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THE WORLD BANK

Washington, D.C.

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Global Environment Facility (GEF) - Corporate Relations - Constituencies Country Files -
Transferred to Archives April 2006 - Austria - 1991-1994 - Volume 1

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FY91 - 95

Vol. 1

• PAR - Austria



Record Removal Notice

File Title Global Environment Facility (GEF) - Corporate Relations - Constituencies Country Files - Transferred to Archives April 2006 - Austria- 1991-1994 - Volume I	Barcode No. 30021511
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Document Date July 18 - December 23, 1994	Document Type
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Correspondents / Participants

Subject / Title
 Global Environment Facility (multiple documents)

Exception No(s).

1
 2
 3
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 10 A-C
 10 D
 Prerogative to Restrict

Reason for Removal

Additional Comments
 Pending consultation with the Global Environment Facility (GEF)

The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information. This Policy can be found on the World Bank Access to Information website.

Withdrawn by Shiri Alon	Date Sep 5, 2014
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Austria

FEDERAL MINISTRY OF FINANCE

Himmelfortgasse 4 - 8
A-1015 Vienna

Mag. Harald Sitta
Tel. 51433 ext. 2282
Fax. 513 08 16

TELEFAX

(Fax.Nr. 001 202 477 0551)

1 Page

Vienna, July 6, 1994

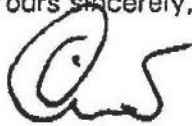
Mr. Ian Johnson
GEF Administration

Subject: Austrian Council Member

Dear Mr. Johnson,

Please be informed that Mr. Walter Rill (World Bank Executive Director) shall serve as Member of the GEF Council representing the constituency led by Austria.

Yours sincerely,



H. Sitta

bill Austria

- 1. McCree
- 2. McSweeney

Att.

FEDERAL MINISTER OF FINANCE
GZ. IF-295/47-III/15 a/94

Himmelfortgasse 4 - 8
A-1015 Vienna
Austria

TELEFAX

(Fax.Nr. 001 202 522 1640)

1 Page

Vienna, June 21, 1994

Mr. T. T. Thahane
Vice President and Secretary
The World Bank

Subject: Notification of Participation in the Global Environment Facility

Dear Mr. Thahane,

The Government of Austria hereby notifies the Chief Executive Officer of the Global Environment Facility ("the Facility") that Austria will participate in the Facility - subject to parliamentary approval.

Sincerely yours,



Ferdinand Lacina
Minister of Finance

→ partic anticipates a contribution contribution -

clarify contrib as contribution to parliamentary approval

→ Japanese

**INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION
INTERNATIONAL FINANCE CORPORATION
MULTILATERAL INVESTMENT GUARANTEE AGENCY
INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES**

SECRETARY'S DEPARTMENT
MEMBERSHIP AND SUBSCRIPTIONS UNIT
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

Run # G 6-011

FACSIMILE TRANSMITTAL FORM

FAX NO.: (202) 522-1642
TELEPHONE NO.: (202) 458-0217
TELEX NO.: 82987 (WORLDBANK)

NO. OF PAGES: 2
(including this page)

DATE: June 22, 1994
TO: Ms. Patricia Bliss-Guest

FAX No.: 522-3240
FROM: Estela T. Sanidad *ETS*
Secretary's Department

SUBJECT: AUSTRIA - GEF

Herewith Austria's notification of participation in the GEF. I'll send original by interoffice mail.

If you experience any problems in receiving this transmission, inform the sender at the telephone or fax number shown above.

A L L - I N - 1 N O T E

DATE: 13-May-1994 05:14pm EST

TO: Rene Moreno (RENE MORENO@A1@WBWASH)

FROM: Peter Sand, LEGEN (PETER SAND@A1@WBWASH)

EXT.: 82921

SUBJECT: RE GEF-Austrian Cofinancing Agreement

Rene,

Having had an opportunity to discuss this with Tom Duvall and Stephen Silard, I would propose the following: Mr. Sitta should be informed that we reviewed the Austrian proposal, and suggest the various additional points listed by Charles Di Leva to be covered in the agreement (we would be glad to propose language if so requested). Regarding Article 2, the introduction of tied funding would represent a major departure from standard Bank practice and from GEF practice during the pilot phase (which expressly required cofinancing to be "untied as to procurement" under para. 15/b of Resolution 91-5). Our proposal therefore would be to delete Article 2 altogether; alternatively, the issue should be submitted to the GEF Council for consideration as soon as possible, as a policy matter applicable to all cofinanciers.

CC: Thomas Duvall (THOMAS DUVAL@A1@WBWASH)
CC: Stephen Silard (STEPHEN SILARD@A1@WBWASH)
CC: Charles Di Leva (CHARLES DI LEVA@A1@WBWASH)
CC: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS@A1@WBWASH)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER@A1@WBWASH)
CC: Kenichi Ohashi (KENICHI OHASHI@A1@WBWASH)

A L L - I N - 1 N O T E

DATE: 13-May-1994 08:41am EST

TO: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS@A1@WBWASH

FROM: Charles Di Leva, LEGEN (CHARLES DI LEVA@A1@WBWASH)

EXT.: 81745

SUBJECT: RE: GEF - Austrian Co-financing Ag.

Fred and Rene, thank you for your EMS and the added information.

I think we are willing to defer to you and Tom Duvall on this issue. It just seems, as a legal matter, unusual that such an important change from GEF pilot phase would not have been recorded in writing.

I understand from Peter that the French were also keen on making clear that, unlike the Pilot Phase, their co-financing could be tied.

Do you know whether we have resolved their request? That would help resolve the issue with Austria.

Best regards.

CC: Rene Moreno (RENE MORENO@A1@WBWASH)
CC: Peter Sand (PETER SAND@A1@WBWASH)
CC: Thomas Duvall (THOMAS DUVAL@A1@WBWASH)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER@A1@WBWASH)
CC: Kenichi Ohashi (KENICHI OHASHI@A1@WBWASH)

A L L - I N - 1 N O T E

DATE: 12-May-1994 08:21am EST

TO: Charles Di Leva (CHARLES DI LEVA@A1@WBWASH)

FROM: Rene Moreno, FRMRP (RENE MORENO@A1@WBWASH)

EXT.: 80854

SUBJECT: RE: GEF - Austrian Co-financing Ag.

Charles:

At the risk of hammering on the same point:

Your reference to Annex B para. 3 is pertinent, it seems to me, to the Trustee's management of "the Fund". However, as I mentioned earlier, cofinancing under GEF2 is not considered part of "the Fund." Also, the term "cofinancing" may be unfortunate. In fact, it is my understanding that the Austrians' notion of "cofinancing" is closer to a separate trust fund out of which they will finance specific activities of their choice. I think Frederik can probably clarify whether this interpretation is right. If that is the case -- i.e. the separate trust fund notion -- the question remains whether they should be allowed to tie their contribution as they wish.

I think it is important that we get full clarity on this fundamental point since as other "cofinanciers" start coming in, the same issue is likely to creep up.

Thanks,

Rene

CC: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS@A1@WBWASH)
CC: Peter Sand (PETER SAND@A1@WBWASH)
CC: Thomas Duvall (THOMAS DUVAL@A1@WBWASH)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER@A1@WBWASH)
CC: Kenichi Ohashi (KENICHI OHASHI@A1@WBWASH)

A L L - I N - 1 N O T E

DATE: 11-May-1994 06:01pm

TO: Rene Moreno (RENE MORENO)

FROM: Charles Di Leva, LEGEN (CHARLES DI LEVA)

EXT.: 81745

SUBJECT: RE: GEF - Austrian Co-financing Ag.

Rene, you make an important point that needs to be fully considered. You are correct that the Pilot Phase instrument made specific reference to co-financing being untied, and that this reference is not clear in the "Instrument" for GEF II.

At this point, however, Annex B para.3 of the Instrument (p. 19) states that the "Trustee shall administer the Fund in accordance with the applicable provisions of the Instrument and such decisions as the Council may take under the Instrument and shall be bound in the performance of its duties by the applicable provisions of the Trustee's Articles of Agreement, By-Laws, rules and decisions...."

It is our understanding from Tom Duvall that IBRD rules do not allow co-financing to be tied. Thus, to the extent that the Trustee continues to be bound to its rules in carrying out its responsibilities as Trustee, it would appear that the same requirements apply as in GEF II.

Nonetheless, if you have any other reports, arguments, or documents to the contrary we would be happy to go over them with you.

CC: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS)
CC: Peter Sand (PETER SAND)
CC: Thomas Duvall (THOMAS DUVALL)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER)
CC: Kenichi Ohashi (KENICHI OHASHI)

This report to GEF Trust fund not nec. to Austrian Trust fund

+
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A L L - I N - 1 N O T E

DATE: 11-May-1994 05:44pm EST

TO: Charles Di Leva (CHARLES DI LEVA@A1@WBWASH)

FROM: Rene Moreno, FRMRP (RENE MORENO@A1@WBWASH)

EXT.: 80854

SUBJECT: RE: GEF - Austrian Co-financing Ag.

Charles:

Thanks for your comments on the above. I have a query relating to the first two comments in your EM regarding the hiring of Austrian consultants and on nationality of suppliers:

While it is true that the pilot phase explicitly required cofinancing to be untied, the role of cofinancing in GEF2 is quite different than in the pilot phase. In the pilot phase, cofinancing was counted as part of the (re)plenishment and considered an integral part of "contributions". That is also why the stringent untied conditions were introduced.

In contrast, GEF2 gave cofinancing no such formal recognition and therefore also did not discuss any preconditions for its "acceptance" -- in fact, there is no acceptance here. The understanding is that countries can do what they want on the cofinancing front. The GEF2 will simply keep track of it and report it.

In that context, it is my understanding that the Austrians essentially want to treat their cofinancing as a separate trust fund which would adhere to their conditions.

Does any of the above alter your comments?

Thanks,

Rene

CC: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS@A1@WBWASH)
CC: Peter Sand (PETER SAND@A1@WBWASH)
CC: Thomas Duvall (THOMAS DUVAL@A1@WBWASH)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER@A1@WBWASH)
CC: Kenichi Ohashi (KENICHI OHASHI@A1@WBWASH)

A L L - I N - 1 N O T E

DATE: 11-May-1994 05:31pm EST

TO: Rene Moreno (RENE MORENO@A1@WBWASH)
TO: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS@A1@WBWASH)

FROM: Charles Di Leva, LEGEN (CHARLES DI LEVA@A1@WBWASH)

EXT.: 81745

SUBJECT: GEF - Austrian Co-financing Ag.

Rene and Fred,

Peter and I have the draft Austrian Agreement and have the following comments:

Articles 1 and 2 note that consultants would be primarily hired from Austrian nationality. The Bank's rules do not allow co-financing to be "tied" and the GEF follows Bank procedures. This policy was recognized in The IBRD Board's Resolution 91-5 of the GEF Pilot Phase, "Each cofinancing will be evidenced by a separate agreement... providing as appropriate in the context of the Cofinancing Arrangement that the Cofinancing will be untied as to procurement...." Page 6, para. 15(b).

Article 2 - We recommend that this article be deleted in that, as with the use of co-financing funds, the selection of suppliers and consultants (procurement) is to follow Bank procedures. Bank procedures already address the issues set forth here, such as conflict of interest.

As a general comment, other than in Articles 1 and 2, GEF should be replaced with "the Bank". The signature line for the Bank should read "International Bank for Reconstruction and Development as Trustee for the Gloabel Enviroment Facility."

Other provisions that we think should be added are as follows:

✓ - that with the written agreement of the parties the Agreement can be amended in writing.

~ - Bank fees (in the Norwegian agreemnt 2%), with Bank permitted to retain overage (interest assrued but not needed for project funding) for purposes related to the Cofinancing agreement.

✓ - Identification of when the funds will be deposited (upon signature?)

~ - A statement The Bank will exercise the same care in the administration of the funds so deposited in the T-Account as it exercises with respect to the administration and manahemnt of its own funds and will have no further liability to Austria in respect

what about
w/NDP?

already in

thereof.

CC: Peter Sand
CC: Thomas Duvall

(PETER SAND@A1@WBWASH)
(THOMAS DUVALL@A1@WBWASH)

A L L - I N - 1 N O T E

DATE: 10-May-1994 03:00pm EST

TO: Peter Sand (PETER SAND@A1@WBWASH)

FROM: Rene Moreno, FRMRP (RENE MORENO@A1@WBWASH)

EXT.: 80854

SUBJECT: GEF - Austria Cofinancing Agreement

Peter:

I sent you a while back a copy of a draft cofinancing agreement which the Austrians provided to us for comment. We had agreed to have comments go to Frederik who would then transmit them onwards to Mr. Sitta.

Have you had a chance to look at the Agreement? Any major issues we should be aware of?

Thanks,

Rene

CC: Kenichi Ohashi (KENICHI OHASHI@A1@WBWASH)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER@A1@WBWASH)
CC: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS@A1@WBWASH)

A L L - I N - 1 N O T E

DATE: 27-Apr-1994 03:25pm

TO: Kenichi Ohashi (KENICHI OHASHI)

FROM: Rene Moreno, FRMRP (RENE MORENO)

EXT.: 80854

SUBJECT: GEF - Austria Meeting with Mr. Sitta

In the meeting today with Johannes, Mr. Sitta mentioned the following:

Cofinancing. they had prepared a draft cofinancing agreement which they wanted us to review. He indicated the amount would be "up to SDR 6 million". He was not sure with whom the co-financing agreement should be: i.e. the Bank, the GEF, etc. He had earlier discussed the same question with Frederik. We agreed to get our (FPR) comments together with LEG and transmit these to Frederik, who would then coordinate the transmission of comments to him. He also indicated that they would want the cofinancing handled as a trust fund arrangement (managed by CFS or CTR).

In the pilot phase cofinancing was handled by Ken Newcombe's group. We will need to clarify to ourselves -- and then of course to the donors -- how we will be handling this aspect in the replenishment.

Timing of Core Contributions. He indicated that elections will be held in October and that the most likely time for the GEF contributions to pass through parliament would be the end of the year, more likely January 1994. Therefore, we should not expect deposit of the first note by November as per the Instrument.

Rene

CC: Paula Donovan (PAULA DONOVAN)
CC: Frederik Van Bolhuis (FREDERIK VAN BOLHUIS)
CC: Wolfgang Hoehenwarter (WOLFGANG HOEHENWARTER)

GLOBAL ENVIRONMENT FACILITY

Replenishment and Participants' Meetings

Palais des Nations, Geneva

March 14 - 16, 1994

REGISTRATION FORM

(Please print clearly)

 Country/Organization: AUSTRIA

Name(s): 1. HARALD SITTA

Title DEPUTY DIRECTOR

2. _____

Title _____

3. _____

Telephone: _____ Fax: _____



GLOBAL ENVIRONMENT FACILITY
Replenishment and Participants' Meetings

Palais des Nations, Geneva
March 14 - 16, 1994

REGISTRATION FORM
(Please print clearly)

Country/Organization: _____

AUSTRIA

Name(s):

1. _____

Hugo Scherlly

Title _____

2. _____

Title _____

3. _____

Telephone: _____

Fax: _____

FEDERAL MINISTRY OF FINANCE
GZ. IF-247/3-III/15 a/94

cc: NW
HA
KO

Austria

Himmelpfortgasse 4 - 8
A-1015 Vienna

Mag. Harald Sitta
Tel. 51433/2282
Fax. 513 08 16

TELEFAX

(Fax.Nr. 001 202 477 7019)

4 Page (s)

Vienna, January 21, 1994

Mr. Charles F. Meissner
CFSOC
The World Bank

Subject: Consultant Trust Fund Handbook

Dear Mr. Meissner,

Thank you for your letter dated January 6, 1994, concerning the revision of the "Consultant Trust Fund Handbook" and proposed changes in the Bank-policy with respect to the use of consultant trust funds.

With regard to your proposals to change (1) the 40 working days rule, (2) the one assignment a year rule, and (3) maximum ceilings on the payment of Part II consultants we have the following comments:

- (1) Concerning the two Austrian Consultant Trust Funds, we confirm that short-term and long-term assignments as well as special studies can be financed through these two Funds; however, we want to keep the rule that longer-term assignments (more than 40 days) and special studies have to be approved by the Ministry of Finance.
- (2) We agree that "the one assignment a year rule" can be counter-productive sometimes, especially in cases of follow up assignments for a particular project. We, therefore, accept to drop this restriction. Nevertheless, more than one assignment during a 12 month-period should only be taken into consideration in cases of follow up-activities, such as participation in an appraisal mission after a pre-appraisal mission or something alike. In any case, we would like to be informed and requested for approval before a second or third assignment of one consultant or consultant firm is envisaged during one year.

(3) The proposal under this item doesn't concern the Austrian Consultant Trust Funds since, by law, we can not permit funding of local and/or Part II consultants out of our two Trust Funds.

Attached please find the revised sheets concerning the Austrian Consultant Trust Funds.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Harald Sitka', written in a cursive style.

Harald Sitka

AUSTRIA - General Consultant Trust Fund

ELIGIBILITY OF CONSULTANT	Austrian nationals only; One assignment in a 12-month period; exceptions have to be approved by the Ministry of Finance
MAXIMUM AMOUNT EACH ASSIGNMENT	✓ Short-term as well as longer-term assignments and special studies; Assignments which take longer than 40 days and special studies have to be approved by the Ministry of Finance.
EXPENSES COVERED BY CTF	Fees, Travel and Subsistence
APPROVAL AUTHORITY	The World Bank
ELIGIBLE COUNTRIES	Borrowing member countries, excluding Central and Eastern Europe and the CIS countries
ELIGIBLE SECTORS	No restrictions, but primarily the sectors: Agriculture, Education (technical), Energy, Industrie (Rehabilitation of Steel Plants etc.), Health, Transport, Water and Sanitation, Project Analysis (technical, economic, financial, social, institutional, environmental and procurement), Mining
TYPE OF ASSIGNMENT FUNDED	Sector and Economic work underlying lending strategy. Short-term operational assignments for project identification, appraisal and supervision Special studies have to be approved by the Ministry of Finance.
CFSOC CONTACT PERSON	Hank Ahn (0-5001) Tel.: 8202) 473-1212 Fax: (202)477-7019
GOVERNMENT'S CONTACT PERSON	Mag. Harald Sitta, Ministry of Finance, Vienna, AUSTRIA Tel: (43-1) 51433-2282 Fax: (43-1) 5130816 Mr. Walter Rill, E.D., EDS10, IMF 11-302 Tel.: (202)623-4582 Fax: (202)623-4948 Mr. Günter Kleedorfer, Austrian Trade Commissioner Tel.: (202)835-8962 Fax: (202)835-8960
SPECIAL NOTES	

FEDERAL MINISTRY OF FINANCE

May 8, 1992

Dear Mr. Gafsi,

With reference to our conversation at your office on April 30, 1992, I am pleased to inform you that the Federal Minister of Finance has agreed to amend the Schedule to the Agreement on the Austrian Consultant Trust Fund for Eastern and Central Europe and add the Republics of the former Soviet Union.

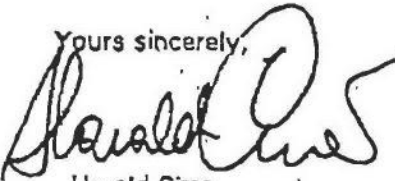
The revised Schedule, therefore, shall read as follows:...

Schedule

Eastern and Central Europe as used in this Agreement includes for the time being the following countries:

Albania
Armenia
Azerbaijan
Belarus
Bulgaria
Czechoslovakia
Estonia
Georgia
Hungary
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Moldova
Poland
Romania
Russian Federation
Tadjikistan
Turkmenistan
Ukraine
Uzbekistan
Yugoslavia

Yours sincerely,



Harald Sitta

1st DRAFT

Mr. S. H. K.
for comments

Sept '94

AGREEMENT between the Republic of Austria and the Global Environment Facility
on an Austrian Technical Assistance Co-operation Fund

define
transfer
implementing Agency
GEF Sec

PREAMBLE

Aiming at intensifying the cooperation between the Republic of Austria (hereinafter called Austria) and the Global Environment Facility (hereinafter called GEF) to enhance environmental sound and sustainable development programs and projects, especially in the region of the countries in transitions of Central and Eastern Europe and the former Soviet Union, a **Technical Cooperation Trust Fund** (hereinafter called **GEF-ATCTF**) **donated by Austria and administered by the GEF** is hereby established.

local areas

Article 1

Austria is prepared to contribute as part of its membership in the GEF and in addition to its contribution to the multilateral fund (Global Environment Trust Fund - GET) for the first replenishment period of the GEF (October 31, 1994 - October 30, 1997) grant funds up to **6 million SDR** to

- a) co- and/or parallel finance GEF-programs and -projects to meet expenditures
 - primarily - in respect of goods produced in or services supplied from Austria and
- b) to finance services, including fees, travel and other reimbursable costs - primarily - rendered by Austrian consulting firms or other Austrian consultants, as described below in connection with their employment by the GEF in the preparation, appraisal and supervision of GEF financed projects and other technical assistance, training and advisory services to address the environmental sound and sustainable development, especially in the region of the ^{economic} countries in transitions of Central and Eastern Europe and the former Soviet Union.

Article 2

The suppliers selected and consultants recruited shall - primarily - be of Austrian nationality or employees of Austrian firms. One and the same firm, supplier or consultant can only be engaged once in a twelve months period. This does not apply to consulting firms, provided they assign different experts to the job. With regard to the assignment of consultants and other experts, no former staff member is eligible for funding under this agreement.

of what?

Article 3

The funds may be used without any restriction for operations in the region of the ^{Economic} countries in transition of Central- and Eastern Europe and the former Soviet Union for activities as described in Article 1.

Article 4

The selection of suppliers and recruitment of consultants shall be the sole responsibility of the GEF and shall be done according to the established procedures of the World Bank (the GEF?). The GEF will issue to consultants, recruited under this agreement, its (the World Bank's) standard letter of appointment. In its negotiations with Austrian consultants, the GEF will offer fees within the range of the fees paid by the GEF out of its own account. The Federal Ministry of Finance will assist the GEF in identifying qualified suppliers and candidates for such assignments. The selection of assignments to be financed under this agreement will be made in consultation with the Federal Minister of Finance. All such proposals will be submitted in writing to the Federal Minister of Finance for his approval. The same procedural system applies to technical assistance for training purposes. The Federal Minister of Finance will endeavor to inform the GEF of his decision within 14 days of receipt thereof.

Article 5

The GEF shall open and maintain an interest-bearing account denominated Austria-Global Environment Facility Co-operation Trust Fund Account (the Account) at the Oestereichische Nationalbank (OeNB) into which the funds for the financing of the activities described in the present agreement shall be deposited by the Government. The GEF shall be entitled to draw on the Account for the financing of the expenditures eligible under the present agreement. The Funds in the Account may be freely exchanged by the GEF into other currencies as may facilitate their disbursement. The GEF may invest and reinvest the funds pending their disbursement. Interest earned on the Account will be added to the Account and used for the same purpose.

1 A 5 of The GEF

GEF Admin. Cost share?

*Reporting 1. Sec. - first year
2. Trustee - financial reporting
or all for Trustee*

Article 6

- 1. ^{*Sec*} The GEF will submit to the Government twice a year a report on the use of the funds. As soon as possible after the end of the GEF's fiscal year, it will submit to the Government a financial statement of the funds in the Account prepared by the GEF.
- 2. ^{*Trustee*}

Article 7

Sec and Min of Finance As required, and at times agreed between the parties, but at least once a year, consultations *between* shall be held regarding the progress being made in implementing this agreement and to review the priorities and the composition of sectors to be supported from this agreement.

Article 8

The offices responsible for the co-ordination of all matters related to the content of this agreement shall be the following:

For the Government:

Federal Ministry of Finance
Department III/15 a
att. Mr. Harald Sitta
Himmelfortgasse 8
A-1010 Wien
Austria

Tel.: 43 1 51 433 ext. 2282

Fax.: 43 1 513 08 16

Trustee
For the GEF:

For the GEF Secretariat

.....
.....
.....
Washington, D. C.

Tel.:

Fax.:

Article 9

The arrangements provided for in this letter shall enter into force on the day of its signature by both parties and shall remain in force, unless terminated by any one of the parties upon six-month prior written notice, until the funds in the Account provided by the Government under this agreement are fully withdrawn.

Article 10

If the arrangements provided for herein are terminated, (a) such termination shall not effect any agreements entered into between the GEF and suppliers and consultants, and the GEF shall be entitled to continue withdrawals from the Account in respect of such agreements as if these arrangements had not been so terminated; and (b) any balance in the Account at the completion of such withdrawals shall be returned to the Government and the GEF's functions hereunder shall be considered terminated.

Article 11

The GEF shall exercise the same care in the discharge of the functions described in this agreement as it exercises with respect to the administration and management of its own affairs, and shall have no further obligation or responsibility to the Government in respect thereof.

Done in two original copies in English.

For the Global Environment Facility

For the Government of Austria

.....
dated

.....
dated.....

A U S T R I A

P O R T



71

Umwelttechnik
Environmental Engineering
Ecotechnologies
Técnica de medioambiente

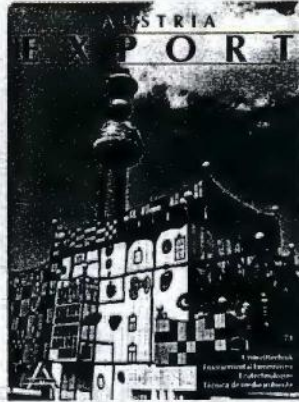


Photo: E. Schauer, Vienna

Spittelau municipal solid waste incineration plant featuring the world's most advanced flue gas cleaning technology.
Architectural design by Friedensreich Hundertwasser.
AUSTRIAN ENERGY & ENVIRONMENT
SGP/WAAGNER-BIRO GES.M.B.H., VIENNA/AUSTRIA

Environmental Engineering

In the Environmental Engineering sector Austria has much more to offer than can be shown in the pages of this magazine. For almost all the goods you require there are Austrian producers who can supply them. By data retrieval inquiries relating to Austrian products and relevant exporters can be dealt with in a matter of minutes by any one of the 86 Austrian foreign trade offices.

Information on Austrian producers in this sector can be had from:

- the Austrian foreign trade offices throughout the world (for addresses see pages 80 and 81) and in Austria from:
- the Exporting Companies Registration Office of the Austrian Federal Economic Chamber.

A-1045 Vienna, Wiedner Hauptstrasse 63, Telephone: +43/1/501 05, Telex: 111871 buka a, Teletex: (61) 3222138 BWK, Fax: +43/1/502 06-255.

Umwelttechnik

Österreichs Wirtschaft hat auf dem Gebiet „Umwelttechnik“ weit mehr zu bieten, als diese Publikation vorstellen kann. Für nahezu jedes Produkt gibt es in Österreich den geeigneten Produzenten. Individuelle Anfragen nach österreichischen Erzeugnissen und den entsprechenden Exporteuren werden von jeder der 86 Außenhandelsstellen der Wirtschaftskammer Österreich durch einfachen Computerabruf in Minutenschnelle erledigt.

Auskünfte über österreichische Produzenten geben:

- die österreichischen Außenhandelsstellen der Wirtschaftskammer Österreich in aller Welt (Adressen siehe Seiten 80 und 81) sowie in Österreich:

- das Außenhandelsfirmenregister der Wirtschaftskammer Österreich:

A-1045 Wien, Wiedner Hauptstraße 63 Telefon +43/1/501 05, Telex: 111871 buka a, Teletex: (61) 3222138 BWK, Telefax: +43/1/502 06-255.

Ecotechnologies

La production autrichienne dans le secteur des écotechnologies dépasse de loin le cadre de cette publication. Et vous trouverez en Autriche des fournisseurs pour la plupart des produits dont vous pouvez avoir besoin. Chacune des 86 délégations commerciales autrichiennes est en mesure de répondre en quelques minutes, en interrogeant l'ordinateur, à vos questions précises concernant les produits fabriqués en Autriche dans ce secteur et leurs exportateurs.

Les services suivants vous fourniront tous renseignements utiles sur la production autrichienne dans cette branche:

- les délégations commerciales autrichiennes dans le monde entier (adresses voir pages 80 et 81) et en Autriche:

- le Registre des exportateurs de la Chambre Economique Fédérale d'Autriche,

A-1045 Vienne, Wiedner Hauptstrasse 63, téléphone + 43/1/501 05, télex: 111871 buka a, télétex: (61) 3222138 BWK, télécopie: + 43/1/502 06-255.

Técnica de medioambiente

Lo que la industria austríaca ofrece en el sector „Técnica de medioambiente“ es mucho más de lo que cabe presentar en esta publicación. Para casi todos los artículos que Vd. desee tiene en Austria los más indicados fabricantes. Cada pregunta sobre productos austríacos y sus correspondientes exportadores es respondida inmediatamente, en pocos minutos, por el despacho competente de las 86 oficinas de Comercio Exterior de Austria en el extranjero, con mera llamada de computadora electrónica.

Informaciones sobre productores austríacos del ramo se las brindan:

- Las Delegaciones Comerciales de la Cámara de Economía de Austria en todo el mundo (ver sus direcciones en las páginas 80 y 81) y en Austria:
- el Registro de compañías exportadoras de la Cámara Federal de Economía de Austria


A-1045 Viena, Wiedner Hauptstrasse 63, teléfono +43/1/501 05, télex: 111871 buka a, teletex: (61) 3222138 BWK, telefax: + 43/1/502 06-255.

A U S T R I A

E X P O R T

Umwelttechnik
 Environmental Engineering
 Ecotechnologies
 Técnica de medioambiente



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	página	Técnicas de desecho	Energía	Pollución del aire		Protección radiológica		Energías nuevas
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Consulting

ILF are one of Central Europe's largest engineering offices with worldwide experience and a permanent workforce of more than 300. Thanks to highly qualified experts in all fields of engineering ILF can offer clients complete in-house services. Special activities comprise plants for the treatment of domestic and industrial waste waters, thermal conditioning of sewage sludge, waste management concepts, waste disposal facilities, evaluation of potential and old landfill sites, clean-up of old landfill sites. ILF's services include expertises, studies, feasibility studies, environmental impact assessments, preliminary design, detailed design, tender documents, project management, construction supervision, start-up and personnel training.



▲ Dornbirn Sludge Drying Plant, 1992. Water evaporation 1,600 kg per hour. 2,200 tons of dry substance per year

Dornbirn Wastewater Treatment Plant, Austria 1983. Population equivalent: 280,000. Mechanical and chemical treatment. ▼



ILF Consulting Engineers

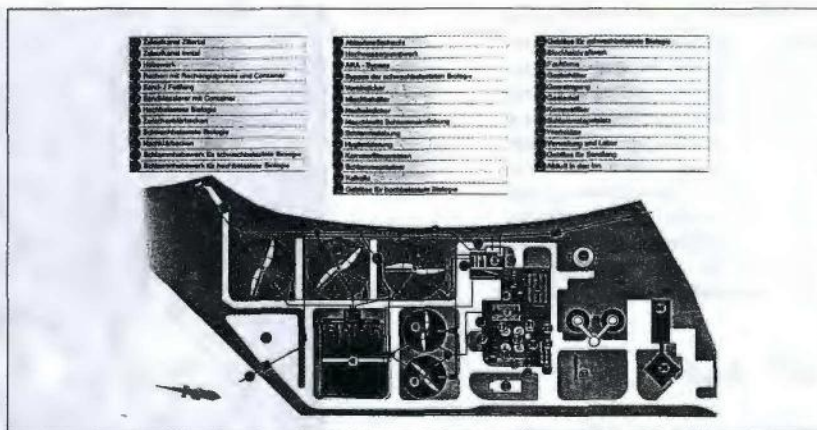
A-6020 Innsbruck Framsweg 16

Telefon: +43/512/2412-0

Telex: 533 733 laibk a

Telefax: +43/512/267 828

• Deutsch, English, Français, Español, Italiano



▲ AIZ Wastewater Treatment Plant, Austria, 1991. Population equivalent: 295,000. Mechanical and biological treatment

Consulting

ILF ist eines der größten Ingenieurbüros Mitteleuropas mit weltweiter Erfahrung und beschäftigt mehr als 300 ständige Mitarbeiter. Hochqualifizierte Fachkräfte auf allen Gebieten des Ingenieurwesens ermöglichen es, den Kunden Planungen aus einer Hand anzubieten. Spezialgebiete sind Reinigungsanlagen für häusliche und industrielle Abwässer, (thermische) Klärschlammbehandlung, abfallwirtschaftliche Konzepte, Deponietechnik, Standortuntersuchungen, Altlastuntersuchungen, Altlastsanierung. Das Leistungsprogramm der ILF beinhaltet Gutachten, Studien, Wirtschaftlichkeitsuntersuchungen, Umweltverträglichkeitsuntersuchungen, Vorentwürfe, Ausführungsplanung, Ausschreibung, Angebotsprüfung, Projektmanagement, Bauüberwachung, Inbetriebnahme und Personalschulung.

Conseil

ILF, un des plus grands bureaux d'études d'Europe centrale, jouissant d'une expérience internationale, dispose d'une équipe de plus de 300 collaborateurs permanents. Grâce à ses experts hautement qualifiés couvrant tous les domaines de l'ingénierie, il est en mesure d'assurer à sa clientèle une planification intégrale des projets. ILF s'est spécialisé dans les stations d'épuration pour eaux résiduaires domestiques et industrielles, le traitement (thermique) des boues, la gestion des déchets, la technique des décharges, l'analyse des sites, l'analyse et l'assainissement des décharges anciennes. ILF fournit des expertises, des études, des analyses de rentabilité, des évaluations d'environnement, des avant-projets et des projets d'exécution, rédige les appels d'offres, contrôle les offres, assure le contrôle et la gestion des projets ainsi que la surveillance des chantiers, la mise en service des installations et la formation du personnel.



Graslboden Domestic Waste Site, 1994. Construction of new waste site, 420,000 m³

Consulting

ILF es una de las oficinas más grandes de ingeniería de Europa Central, con experiencia en todo el mundo, y ocupa continuamente una plantilla de más de 300 personas. Expertos de alta calificación en todos los sectores de la ingeniería posibilitan ofrecer al cliente planeamientos de "una sola mano". Los campos especiales son instalaciones limpiadoras para aguas residuales domésticas e industriales, tratamiento (térmico) del lodo activado, proyectos de la economía de residuos, técnica de depósito de basura, estudios y saneamiento de basureras abandonadas. El programa de prestaciones de la ILF comprende dictámenes, estudios, estudios de rentabilidad, estudios de tolerancia medioambiental, preproyectos, planeamiento de la ejecución, licitaciones, control de ofertas, management del proyecto, control de la construcción, puesta en marcha y adiestramiento del personal.

Environmental Technology



Austrian Energy are Austria's largest energy and environmental technology enterprise. In the environmental technology field AE offer not only individual components but also complete plants for flue gas cleaning, drinking water treatment, waste water and solid waste treatment. Services comprise planning and engineering, plant startup and retrofitting, modernisation, installation and installation supervision, as well as turnkey project management up to and including after-sales service.

Umwelttechnik

Austrian Energy ist das größte österreichische Energie- und Umwelttechnik-Unternehmen. In der Umwelttechnik bietet die AE sowohl Komponenten als auch komplette Anlagen für die Rauchgasreinigung, Wasseraufbereitung, Abwasser- und Abfallbehandlung an. Der Leistungsumfang umfaßt Planung und Engineering, Inbetriebsetzung von Neuanlagen und Nachrüstungen, Modernisierung, Montage und Montageüberwachung, Turn-key Auftragsabwicklung bis zum After Sales Service.

Ecotechnologie

Austrian Energy, la plus grosse entreprise autrichienne intervenant dans le domaine énergie et ecotechnologie, propose des composants ainsi que des installations complètes pour l'épuration des fumées, l'incinération des déchets, l'épuration des eaux usées, la potabilisation de l'eau et le traitement des déchets. Ses prestations englobent l'étude des installations et l'ingénierie, la mise en service d'installations et l'adaptation ultérieure d'équipements, la modernisation, le montage et la surveillance du montage, la réalisation d'équipements clé en main et le suivi après vente.

Técnica de medioambiente

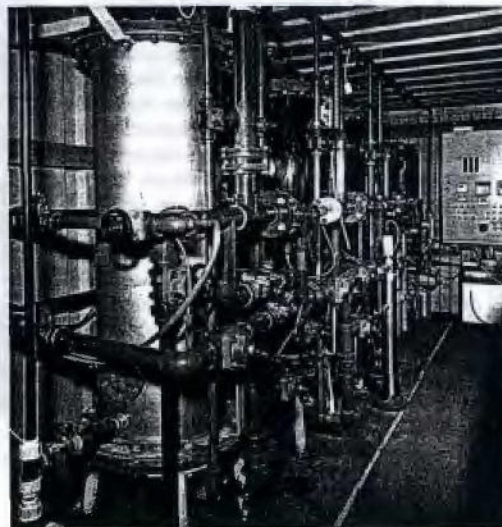
Austrian Energy es la empresa más grande de Austria en técnica energética y medioambiental. En la técnica medioambiental la AE ofrece no sólo los componentes de una planta sino también plantas completas para la depuración de humos, tratamiento del agua, depuración de aguas residuales e incineración de desechos.

El volumen de sus prestaciones comprende el planeamiento y engineering, la puesta en marcha de instalaciones nuevas y ampliación del equipo, modernización, montaje y control del montaje, ejecución del pedido turn-key hasta el „after sales service“.



▼ Refuse incinerator in Rotterdam/Netherlands

▲ Distant heating plant. Spittelau/Austria



▼ Denitrification plant Leibnitz/Austria

AUSTRIAN ENERGY &
ENVIRONMENT
SGP/WAAGNER-BIRO
GMBH

A-1210 Wien
Siemensstrasse 89
Telefon: +43/1/252525
Telex: 114 113
Telefax: +43/1/252525-125
☎ Deutsch, English, Français





Consulting

For more than 20 years now this independent consulting company has been active in the environmental, energy and infrastructure sectors. Services offered cover consultation, specific studies and assessments, project management, regional and investment planning, rehabilitation concepts and environmental impact analyses. Clients include governments, international development organisations (e. g. World Bank and UNO) and the private sector.

Environmental audit at a steelworks ▼



Environmental audit team at work ▼



Consulting

Das seit rund 20 Jahren bestehende unabhängige Consultingunternehmen AEEG ist vorwiegend im Umwelt-, Energie- und Infrastruktursektor tätig. Das Leistungsangebot umfaßt Beratung, fachspezifische Studien und Gutachten, Projektmanagement, Regional- und Investitionsplanung, Sanierungskonzepte sowie Umweltverträglichkeitsanalysen. Auftraggeber sind die öffentliche Hand, internationale Entwicklungsorganisationen (u. a. Weltbank und UNO) und der private Sektor.

AUSTRIAN ENVIRONMENTAL
EXPERT GROUP
AEEG

A-1180 Wien
Gymnasiumstrasse 42/5
Telefon: +43/1/34 01 27
Telex: 7521 1633 aeege a
Telefax: +43/1/319 46 62
☎ Deutsch, English, Français,
Español

AUSTRIAN ENVIRONMENTAL
EXPERT GROUP



PRIVATE CONSORTIUM OF ENVIRONMENTAL EXPERTS

Conseil

La société de conseil indépendante AEEG qui intervient depuis près de 20 ans, essentiellement dans les secteurs environnement, énergie et infrastructure, propose les prestations suivantes: assistance-conseil, établissement d'analyses et d'expertises spécifiques, gestion de grands projets, planification régionale et plannings d'investissement, élaboration de plans d'assainissement et analyses d'impact sur l'environnement. Les maîtres d'œuvre sont les administrations, les organisations internationales de développement (notamment la Banque mondiale et l'O.N.U.) ainsi que des entreprises du secteur privé.

Consulting

Esta compañía de consultoría independiente ha desarrollado sus actividades durante más de 20 años en los sectores del medioambiente, de la energía y de la infraestructura. Sus servicios incluyen fundamentalmente asesoramiento, estudios y análisis relacionados a los sectores mencionados anteriormente, administración de proyectos, planificación regional y de inversiones, conceptos de saneamiento como también análisis de impactos al medioambiente. Sus clientes son generalmente entidades públicas y gubernamentales, organizaciones internacionales de desarrollo (entre otras el Banco Mundial y la ONU) y el sector privado.

Soil Purification Process



Eco-Tech are an internationally active company engaged in the development, production and distribution of recycling plants for contaminated soils and similar materials (e. g. harbour and river sediments, oil sludges, etc.). The "Solid Cycle Process" developed by Eco-Tech sets a new standard worldwide in this sector. The main merits of the Solid Cycle Process are:

- Suitable for both organic and anorganic contamination.
- No by-products in form of residual concentrates.
- Handles smallest grain sizes (coarse clay/clay, mud).

ECO - Tech
Umwelttechnologie Ges. m. b. H.

A-4810 Gmunden
Kaltenbrunnerstrasse 45
Telefon: +43/7612/729 47-0
Telefax: +43/7612/729 47-59
☐ Deutsch, English

- für organische als auch anorganische Kontaminationen
- generell keine Restkonzentrate als Nebenprodukt
- auch für kleinste Korngrößen (Schluff/Ton, Schlämme) geeignet.

- utilisable pour les contaminations organiques et anorganiques,
- ne donne généralement pas lieu à la production de concentrats résiduels,
- convient pour les produits de granulométrie extrêmement fine (limons/argile, boues).

Proceso de saneamiento de suelo

Eco-Tech es una empresa que trabaja internacionalmente en el desarrollo, producción y distribución de instalaciones de reciclaje de contaminados y materiales similares como sedimentos portuarios y fluviales, fango de aceite, etc.). El proceso desarrollado por Eco-Tech, "Solid Cycle Process", representa en todo el mundo un nuevo estándar en este sector. Las ventajas esenciales de "Solid Cycle Process" son:

- es apropiado para las contaminaciones orgánicas como también anorgánicas
- generalmente no se tiene ningún concentrado restante como producto secundario
- es apto también para tamaños mínimos de granulado (arena movediza/arcilla, lodos).

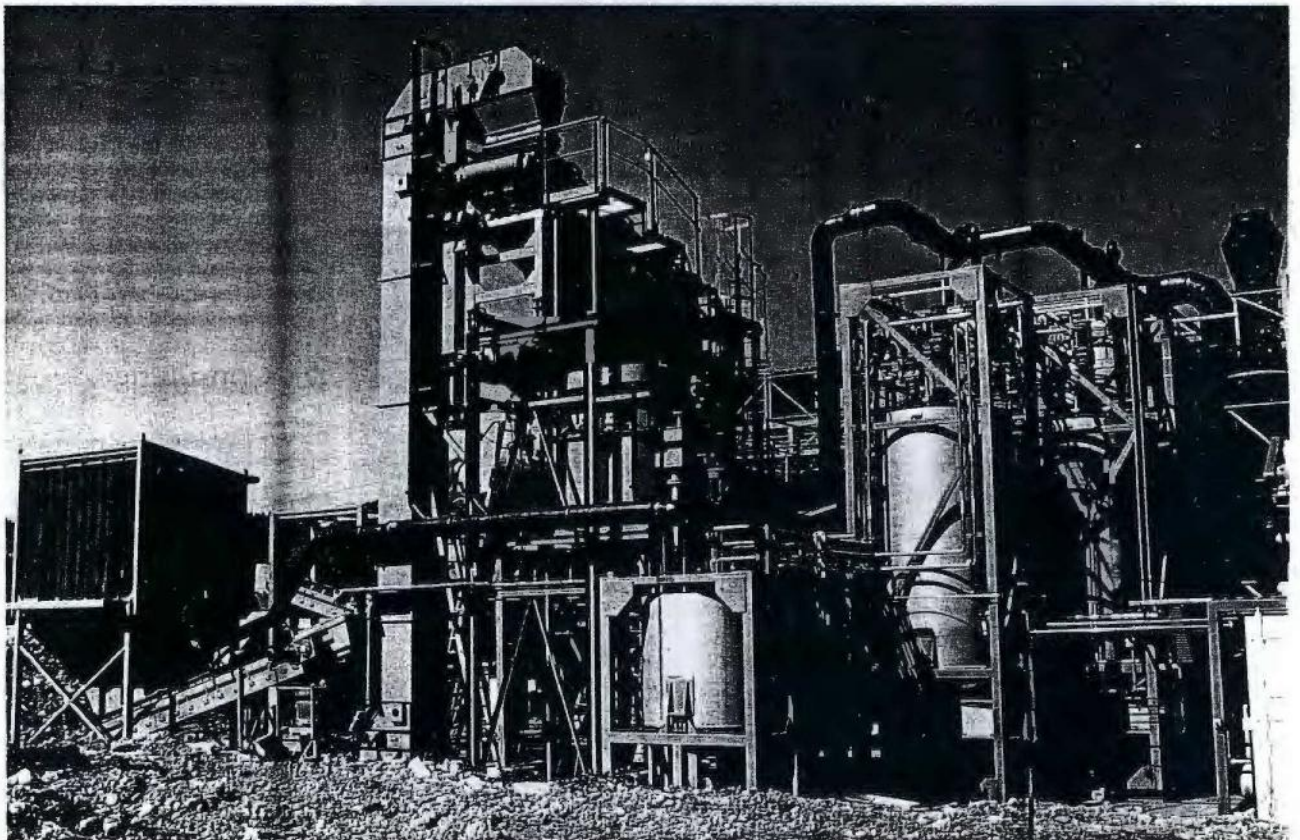
Bodensanierungsverfahren

Eco-Tech ist ein international tätiges Unternehmen, das Recyclinganlagen für kontaminierte Böden und ähnliche Materialien (wie Hafen- und Flußsedimente, Ölschlämme, etc.) entwickelt, produziert und betreibt. Das von Eco-Tech entwickelte Verfahren „Solid Cycle Process“ stellt weltweit einen neuen Standard auf diesem Sektor dar. Die wesentlichen Vorteile von Solid Cycle Process sind:

Assainissement du sol

Eco-Tech est une entreprise intervenant au niveau international dans le développement, la production et l'exploitation d'installations de recyclage de sols contaminés et autres matériaux pollués tels que sédiments des rivières et des ports, boues d'huile, etc.). Le procédé "Solid Cycle Process" mis au point par Eco-Tech établit un nouveau standard de référence mondial dans ce secteur. Les principaux avantages du "Solid Cycle Process" se déclinent comme suit:

The Solid Cycle Process is an economy-priced process with a wide range of use ▼





Consulting

As a basis for environment-related company decisions Allplan offer an extensive interdisciplinary services package containing strategies designed to overcome the most complex of problems. Allplan solve energy and environmental issues with feasibility studies, provision of new funding sources and advanced eco-conscious concepts. Allplan's municipal services include comprehensive advice and attendant consultation for municipalities in every phase of eco-related projects.

Consulting

Als Grundlage für umweltrelevante Unternehmensentscheidungen bietet Allplan ein umfangreiches,

ALLPLAN Gesellschaft m. b. H.

A-1040 Wien
Schwindgasse 10
Telefon: +43/1/505 37 07-0
Telefax: +43/1/505 37 07-2
☐ Deutsch, English

Water- Riverside tract ▶



interdisziplinäres Paket an. Dieses zeigt Strategien zur Bewältigung der durchwegs komplexen Problemstellungen auf. Allplan löst Energie- und Umweltfragen durch Wirtschaftlichkeitsstudien, Erschließung neuer finanzieller Quellen und ausgereifte Umweltkonzepte. Zum Kommunalservice von Allplan gehört die umfassende Beratung und Begleitung der Gemeinden in allen Phasen ökologischer Projekte.

Straw- Municipal assignment ▶



Conseil

Afin d'aider les entreprises dans leurs décisions ayant un impact sur l'environnement, Allplan met à leur disposition un outil interdisciplinaire très vaste, proposant des stratégies pour résoudre les problèmes extrêmement complexes qui se posent à cet égard. Allplan offre des solutions aux problèmes de l'énergie et de l'environnement à partir d'études de rentabilité, de recherche de nouvelles sources de financement et d'élaboration de concepts d'environnement bien pensés. Ses prestations s'adressent aussi aux communes, avec conseil et suivi à toutes les phases des projets écologiques.

Consulting

Allplan ofrece a las empresas interesadas un vasto paquete interdisciplinario como base para sus decisiones de relevancia para el medioambiente. Este ofrece estrategias para superar los problemas siempre complejos que se presentan. Allplan resuelve cuestiones de energía y de medioambiente con estudios de rentabilidad, con investigación de nuevas fuentes financieras y madurados conceptos ecológicos. Dentro del servicio comunal de Allplan se tiene su amplio asesoramiento y asistencia a las comunidades en todas las fases de los proyectos ecológicos.



Eco-Consulting

The consulting engineering office Denkwerkstatt provides assistance under the maxim "Think-Plan-Act, for ecofriendly plant operation" and geared to individual requirements. Services offered embrace the preparation of waste management concepts, prevention strategies, the drawing up of eco-analyses, eco-controlling and the creation of the preconditions for eco-auditing to EC guidelines. The aim of all consultation is to join with the client in working out made-to-measure solutions for the benefit of both the enterprise and the environment.



ÖKO – Consulting

Das Consultingbüro Denkwerkstatt bietet Hilfestellung nach dem Prinzip „denken – planen – handeln, für umweltgerechtes Wirtschaften“, abgestimmt auf individuelle Problemstellungen. Die Angebotspalette umfaßt das Erarbeiten von Abfallwirtschaftskonzepten, Vermeidungsstrategien, Erstellen von Öko-Bilanzen, Öko-Controlling und Schaffen der Voraussetzungen für ein Öko-Audit nach den Richtlinien der EG. Ziel jeder Beratung ist es, gemeinsam mit dem Auftraggeber maßgeschneiderte Lösungen zum Nutzen von Unternehmen und Umwelt zu erarbeiten.

Conseil en écologie

L'activité du bureau-conseil Denkwerkstatt s'oriente sur le principe «Réfléchir - projeter - agir, pour une économie écologique» en appliquant cette démarche aux divers problèmes spécifiques qui lui sont posés. Son équipe étudie dans cette perspective des concepts de trai-

tement des déchets et des stratégies ayant pour enjeu d'éviter les déchets; elle établit des bilans écologiques, effectue des analyses d'impact écologique et prépare le terrain pour un contrôle d'impact écologique selon les directives de la C.E. L'objectif de toutes ses interventions est de dégager, en collaboration avec le client, des solutions sur mesure profitables à la fois pour l'entreprise et pour l'environnement.

Consulting ecológico

La oficina Denkwerkstatt ofrece ayuda según el principio "pensar – planear – actuar, para una economía ecológica", ajustado a los problemas individuales. La paleta de oferta abarca desde la elaboración de planes de la economía de residuos, estrategias elusivas, balances ecológicos, control ecológico y creación de presupuestos para un audit ecológico según las normas de la UE. La meta de cada asesoramiento es elaborar conjuntamente con el cliente soluciones a medida para el provecho de la empresa y del ambiente.

Achstrasse 46
Telefon: +43/5574/78 349-0
Telefax: +43/5574/78 34 94
☐ Deutsch, English

DENKWERKSTATT
Ing. Michael BÜCHELE

A-6922 Wolfurt



Plant and Electric Machine Construction

EBG offer customers optimum solutions for the utilisation and distribution of electrical energy, at the same time contributing to plant performance by ensuring the efficient and eco-conscious use of energy optimally adapted to customers' processing requirements. EBG supply electrical, measuring, control and communication technology in the form of turnkey projects. If required, individual services can be provided, e. g. engineering, preparation of software, delivery of materials, switchboard construction, transformers, assembly, supervision of assembly, startup and project management.

ELEKTRO BAU AG
A-4021 Linz
Krausstrasse 1-7
P. O. B. 301
Telefon: +43/732/6939
Telefax: +43/732/6939/71
☎ Deutsch, English, Français, Español

Anlagenbau / Elektromaschinenbau

Die EBG bietet ihren Kunden optimale Lösungen zur Nutzung und Verteilung elektrischer Energie. Dabei unterstützt die EBG die Leistungsprozesse in Kundenunternehmen unter dem Aspekt prozeßoptimaler, effizienter und ökologisch sinnvoller Energieanwendung. Die EBG erstellt elektrotechnische, meß-, steuer- und regeltechnische sowie nachrichtentechnische Leistungspakete in Form von Gesamtanlagen. Bei Bedarf werden auch einzelne Leistungen übernommen, wie: Engineering, Softwareerstellung, Materiallieferung, Schalteranlagenfertigung, Transformatoren, Montage, Montageüberwachung, Inbetriebnahme oder Projektmanagement.

Construcción de instalaciones – Máquinas eléctricas

La EBG ofrece a sus clientes soluciones óptimas para el aprovechamiento y distribución de energía eléctrica. Con eso apoya la EBG los procesos de rendimiento en las empresas de los clientes bajo el aspecto del más eficiente y más ecológico empleo de energía. La EBG ofrece paquetes de rendimientos electrotécnicos, de medición, de mando y de regulación, así como de técnicas de comunicación en forma de instalaciones completas. En caso de necesidad se hace cargo también de prestaciones individuales, como: engineering, software, suministro de materiales, ejecución de instalaciones de conmutación, transformadores, montaje, control del montaje, puesta en marcha y management del proyecto.

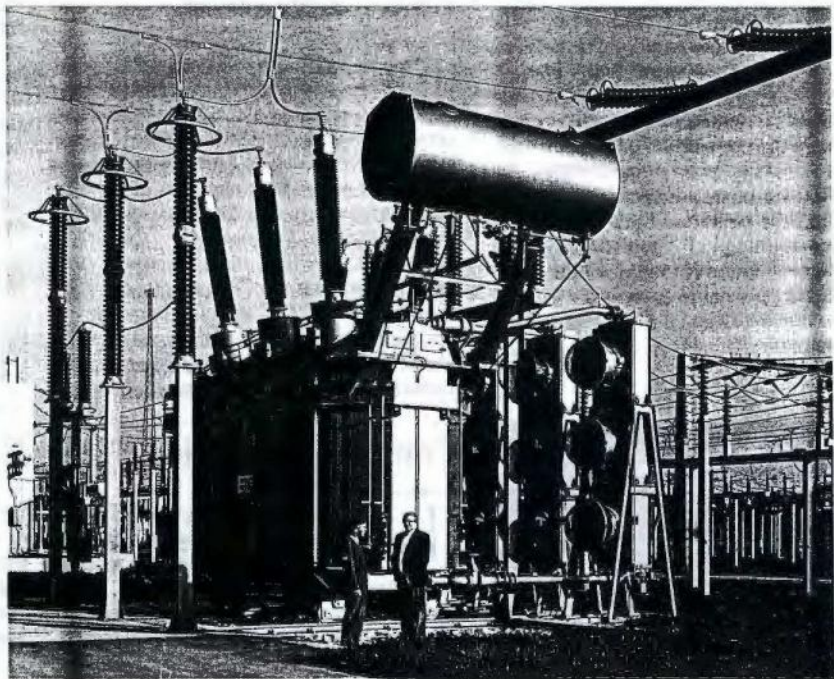


▲ Visualisation by means of PC (software creation and control unit) in control room of a waste water treatment plant.

▼ 200 MVA regulating transformer of extra-low-noise design (installed in close proximity to a residential area).

Installations technologiques, équipements électriques

EBG propose à ses clients des solutions optimales pour l'utilisation et la distribution de l'énergie électrique et apporte un soutien efficace aux entreprises en mettant à leur disposition des applications intéressantes pour l'optimisation des processus et l'utilisation intelligente et écologique de l'énergie. La société fournit des installations complètes apportant des solutions électrotechniques intégrées pour les opérations de mesure, de commande et de réglage ainsi que pour la transmission de l'information. Ses prestations s'étendent également aux domaines suivants: ingénierie, fourniture de matériaux, fabrication d'installations de commutation, transformateurs, montage, surveillance du montage, mise en route des installations et gestion des projets.





Sealing Materials

For sealing the surfaces and bottoms of protected and safe landfills AGRU-PEHD produce HDPE liners with smooth and with textured surface on one or both sides. The AGRU Sure Grip® concrete protective liners provide a high-grade sealing system for engineering solutions to acid protection and sewer construction problems. Thanks to their excellent chemical and physical properties the AGRU Sure Grip® are ideal for sealing collecting basins, ponds, shafts and sewers. The comprehensive quality assurance guaranteed by comprehensive in-plant controls and outside monitoring by state-authorised test institutes ensure the constant high quality of AGRU products. AGRU plastic products are in successful use in 80 countries worldwide.

Abdichtungen

Zur Oberflächen- und Basisabdichtung geschützter und gesicherter Deponien erzeugt AGRU PEHD-Dichtungsbahnen mit glatter, und ein- oder beidseitig strukturierter Oberfläche. Mit den AGRU Sure Grip® Betonschutzplatten wurde ein hochwertiges Abdichtungssystem für ingenieurmäßige Lösungen im Säureschutz- und Kanalbau entwickelt. Aufgrund der hervorragenden chemischen und physikalischen Eigenschaften kommt die AGRU Sure Grip® im Säureschutzbau und im kommunalen Bereich zur Abdichtung von Auffangwannen, Becken, Schächten und Abwasserkanälen zum Einsatz. Durch die umfangreiche Gütesicherung der werkseitigen

Eigenüberwachung und der Fremdüberwachung durch staatlich autorisierte Prüfinstitute ist eine gleichbleibend hohe Qualität der AGRU Produkte gewährleistet. Weltweit kommen AGRU-Kunststoffzeugnisse in 80 Ländern erfolgreich zum Einsatz.

Etanchéité

Les feuilles d'étanchéité AGRU en polyéthylène h.d., à surface unie ou structurées sur une ou sur les deux faces, sont utilisées pour assurer l'étanchéité à la base et en surface des décharges contrôlées.

Avec ses dalles de protection en béton Sure Grip®, AGRU met à la disposition des ingénieurs un système d'étanchéité extrêmement efficace, pour la protection contre les acides et pour la construction d'égouts. Ses remarquables propriétés chimiques et physiques font d'AGRU Sure Grip® le système de choix pour les équipements communaux et les ouvrages de protection contre les acides, lorsqu'il s'agit d'assurer l'étanchéité des cuves de réception, bassins, puits et canalisations de tout-à-l'égout. Les nombreuses mesures d'assurance qualité mises en place par l'usine ainsi que la surveillance des produits par des instituts officiellement autorisés garantissent une qualité toujours égale des produits AGRU. Les produits en matières plastiques AGRU sont exportés avec succès dans 80 pays à travers le monde entier.



AGRU Sure Grip® concrete protective liner ▲

▼ PE/PP pipe systems



Impermeabilizaciones

AGRU PEHD produce para la impermeabilización de superficies y bases de depósitos controlados de basura, bandas de impermeabilización o estancamiento, de superficie lisa o estructurada por un lado o por sus dos lados. Con las planchas protectoras AGRU Sure Grip®, de hormigón, se ha desarrollado un sistema de hermetización, de alta calidad, para soluciones de ingenieros en la construcción de protecciones antiácidos y en la de alcantarillados o acequias o canales. Debido a sus excelentes calidades químicas y físicas la AGRU Sure Grip® se utiliza en la construcción antiácida y en el sector comunal, para la hermetización de bandejas colectoras, depósitos abiertos, pozos y canales de aguas residuales. Se garantiza la constante alta calidad de los productos AGRU gracias a las amplias medidas de aseguramiento de calidad en el autocontrol de la empresa misma y del constante control ejercido por los institutos controladores autorizados por el Estado. Los mundialmente acreditados productos AGRU de material plástico se emplean con éxito en 80 países.

AGRU
Alois Gruber Ges.m.b.H
A-4540 Bad Hall
Ing.-Pesendorfer-Strasse 31

Telefon: +43/7258/4811-0
Telex: 28151
Telefax: +43/7258/3863
Deutsch, English



Sealing Membranes

DURABIT, the sealing membrane specially developed from mod. HDPE, is used for a wide variety of civil engineering and building applications. DURABIT membranes display outstanding mechanical properties and are highly resistant to heat, ageing, ultraviolet radiation, root penetration and many chemicals. Free from plasticizers and fillers, they are ecofriendly and can be easily welded without the use of adhesives or solvents. Available in rolls of up to 2 m in width, DURABIT membranes are recommended for assignments calling for fail-safe and long-life waterproofing (e. g. tunnels, ponds, dams).



Ground water protection ▲

Géomembranes

DURABIT, une géomembrane en polyéthylène h.d. spécialement développé pour assurer l'étanchéité, trouve de nombreuses applications pour les ouvrages de génie civil. Les nappes d'étanchéité DURABIT possèdent de remarquables propriétés mécaniques; elles résistent à la chaleur, aux rayons ultraviolets, à la pénétration des racines et à de nombreux produits chimiques. Il s'agit d'un produit écologique ne contenant ni plastifiants, ni charges. Ces nappes faciles à souder, sans adjuvant ni solvant, sont vendues en rouleaux de différentes largeurs jusqu'à 2 m. Elles sont recommandées pour tous les ouvrages demandant un système d'étanchéité sûr et durable (p.ex. tunnels, étangs, bassins de retenue).

DURABIT — BAUPLAST
 Ges. m. b. H. & Co. KG

A-4050 Traun
 Industriestraße 39-45
 Telefon: +43/732/81 4 94,
 81 4 95
 Telefax: +43/732/82 8 87
 ☐ Deutsch, English

Dichtungsbahnen

DURABIT, die speziell entwickelte Dichtungsbahn aus modifiziertem HDPE, findet Anwendung für die verschiedensten Einsatzgebiete im Hoch- und Tiefbau. DURABIT Dichtungsbahnen besitzen hervorragende mechanische Eigenschaften und sind wärmebeständig, UV-stabil, wurzelfest und resistent gegen viele Chemikalien. Sie sind umweltfreundlich, enthalten keine Weichmacher und keine Füllstoffe. Die Verschweißung ist einfach und erfolgt ohne Zusatzstoffe und ohne Lösungsmittel. DURABIT Dichtungsbahnen werden in Rollen bis zu 2 m Breite produziert und bei Bauvorhaben empfohlen, die eine sichere und langlebige Abdichtung voraussetzen (z. B. Tunnelbau, Teiche, Dämme).

Rollos de junta

DURABIT, el rollo de junta especialmente desarrollado de HDPE modificado, se utiliza en los distintos campos de empleo de las construcciones altas y subterráneas. Los rollos de junta DURABIT tienen excelentes calidades mecánicas, son resistentes al calor, estables contra UV, resistentes a las raíces y resistentes contra muchas sustancias químicas. Son favorables al ambiente, no contienen plastificantes ni ingredientes de relleno. Su soldadura es sencilla y se hace sin aditivos y sin disolventes. Los rollos de junta DURABIT se producen en rollos de hasta 2 mts. de ancho. Se recomiendan para proyectos de construcción que presuponen juntas seguras y de larga duración de vida (como por ej. construcción de túneles, estanques y diques).

Storage basin ▼



Ultrasonic Waste Burners

Liquid waste often contains impurities in the form of solids. With conventional atomising burners these have to be separated out by strainers. The need for constant cleaning and a further residue raise disposal costs. With the Dumag ultrasonic burner the waste/fuel mixture is led by way of a uniformly smooth and straight canal to and through the nozzle and is not atomised until it leaves the ultrasonic field. Solids of several millimetres in diameter are no problem. Various nozzles ensure optimum adaption to all combustion chambers. The appropriate burning of many different types of waste bears unequivocal testimony to the suitability of the ultrasonic burner.

Ultraschall-Abfallbrenner

Flüssige Abfälle beinhalten häufig Feststoffe als Verunreinigungen. Bei herkömmlichen Zerstäuberdüsen müssen Siebeinrichtungen die Feststoffe zurückhalten. Dauernde Reinigungsarbeiten und ein weiterer Rückstand verteuern die Entsorgung. Bei der vorgestellten Ultraschalldüse der Firma Dumag tritt der Abfallstoff/Brennstoff durch ein glattes Rohr ohne Verengung und Umlenkung durch die Düse und wird erst nach Austritt vom Ultraschallfeld erfaßt und in feine Tröpfchen zerlegt. Feststoffe mit mehreren Millimetern Durchmesser sind kein Problem. Verschiedene Ausführungsformen der Düse in Ver-

bindung mit einem Brennergesschrank mit vielen Verstellmöglichkeiten erlauben die Anpassung an bestehende Feuerungsräume. Die ordnungsgemäße Verbrennung einer großen Anzahl verschiedener Abfallstoffe hat die Eignung der Ultraschalldüse eindeutig bewiesen.

Brûleur de déchets à buses à ultrasons

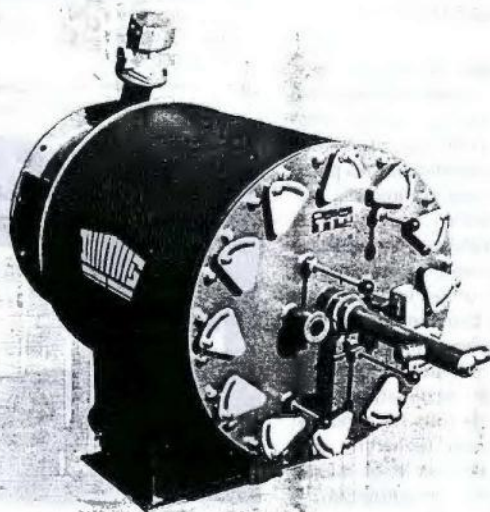
Les déchets liquides contiennent aussi souvent des matières solides. Lorsqu'on utilise des tuyères classiques il est donc nécessaire de monter en aval des filtres retenant ces impuretés. Le nettoyage fréquent de ces filtres et la présence de matières solides résiduelles constituent de nouveaux facteurs de coût. Dans le cas de la tuyère à ultrasons Dumag, le mélange déchets/combustible traverse la tuyère dans une tubulure à parois lisses, sans rétrécissement ni déviations et ce n'est qu'à la sortie qu'il pénètre dans le champ d'ultrasons où il est pulvérisé. Les particules solides ne posent aucun problème, même si elles ont plusieurs millimètres de diamètre. Les nombreuses formes de tuyères ainsi que les différentes possibilités de réglage de l'armoire du brûleur permettent de tenir compte des paramètres du foyer existant. Les excellents résultats obtenus avec toutes sortes de déchets liquides confirment les avantages des tuyères à ultrasons.

DUMAG
Dr. techn. Ludwig Kaluza & Co. KG
Verbrennungstechnik

A-1037 Wien
Schwarzenbergplatz 7
Telefon: +43/1/712 4105-0
Telefax: +43/1/712 4109
Deutsch, English

Quemador industrial ultrasónico de desechos

Los desechos líquidos contienen muchas veces sustancias sólidas como ensuciamiento. Instalaciones de tamiz deben retener las sustancias sólidas en las toberas pulverizadoras usuales. Los continuos trabajos de limpieza y los remanentes residuos encarecen su eliminación. En la tobera ultrasónica presentada por la firma Dumag, el desecho/combustible pasa por un tubo liso sin estrechamiento ni desvíos por la tobera para, recién después de salir, ser captado por el campo ultrasónico pulverizándose en gotas finas. Las sustancias sólidas, de varios milímetros de diámetro, no constituyen problema alguno. Diversas formas de ejecución de la tobera en unión con un estribo de apriete de quemador, de muchas posibilidades de ajuste, permiten la adaptación al lugar de quema existente. La combustión en debida forma de un gran número de distintos desechos ha comprobado claramente la aptitud de la tobera ultrasónica.



Waste Separation Systems

The firm Kagerer develops and produces waste separation systems of steel for the separate collection of all reusable waste such as glass, paper, cans, metals and plastics for municipalities, businesses, workshops, factories and service enterprises, authorities and government offices. The coordinated waste separation system is characterised by eye-catching design, a high degree of safety and maximum noise prevention. Proven at home and abroad, the containers can be grouped together to form so-called "refuse islands", meaning that various reusable waste can be collected in one place.

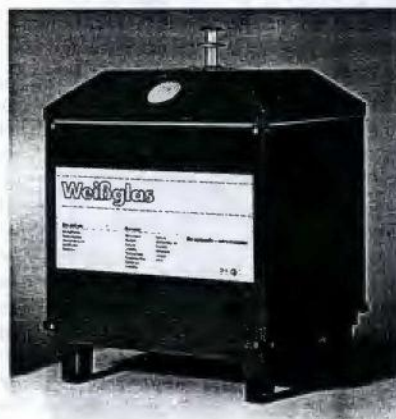
Kagerer need partners for marketing and assembling, in particular in European countries.



▲ "Refuse Islands". All recyclable waste is collected in one place. Bins are of uniform design.

Sammelbehälter-Systeme

Die Firma Kagerer entwickelt und produziert Behältersysteme aus Stahl zum getrennten Sammeln aller wiederverwertbaren Altstoffe, wie Glas, Papier, Dosen, Metalle und Kunststoffe für Kommunen, Handels-, Gewerbe-, Industrie- und Dienstleistungsbetriebe, Behörden und Ämter. Das aufeinander abgestimmte Behältersystem zeichnet sich durch anziehendes Design, hohe Sicherheitsstandards und hohen Lärmschutzgrad aus. Die im In- und Ausland bewährten Behälter lassen sich zu sogenannten „Umweltinseln“ zusammenstellen, d. h., an einem Ort können alle wiederverwertbaren Altstoffe gesammelt werden. Kagerer sucht Partner für den Vertrieb und Assembling vor allem in europäischen Ländern.



▲ The most important refuse bins UNIROL 1100 (wheeled bin) and UNIHUB 1500 (bin with hinged bottom)



▲ The UNIHUBROL bin (wheeled and with hinged bottom) is especially suitable for restaurants and canteens and can be wheeled to curb for emptying

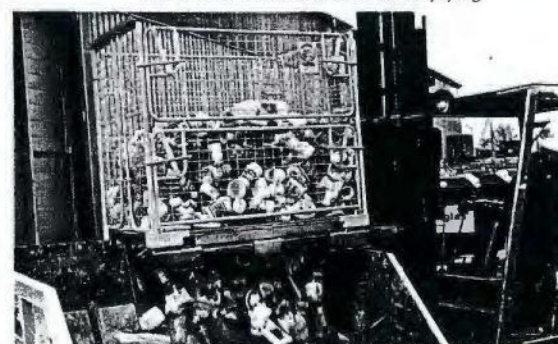
KAGERER Ges. m. b. H.
Rohr- und Metallwerk
A-4017 Linz
Ignaz-Mayer-Strasse 17
Telefon: +43/732/774 471
Telefax: +43/732/774 471-35
Deutsch, English

Sistemas de recipientes colectores

La empresa Kagerer desarrolla y produce sistemas de recipientes de acero para la recogida separada de todos los materiales viejos reciclables, como vidrio, papel, latas, metales y plásticos de comunas, oficinas comerciales, empresas industriales y oficinas de prestaciones de servicio, entidades públicas y oficinas administrativas. El sistema sincronizado de recipientes se distingue por su atractivo diseño, por su alto estándar de seguridad y su alto grado de protección contra ruidos. Los recipientes comprobados en el país y en el extranjero pueden configurarse de tal manera que constituyan las así llamadas "islas de medioambiente", es decir en un lugar determinado o "isla" se recogen todas las materias viejas reciclables. Kagerer busca socios para la venta, distribución y ensamblaje sobre todo en países europeos.

Systèmes de poubelles

Kagerer développe et fabrique des poubelles combinées en acier pour la collecte-tri de tous les déchets recyclables tels que: verre, papier, boîtes métalliques, métaux et plastiques; ces poubelles sont destinées aux communes, au commerce, à l'industrie ainsi qu'aux bureaux et administrations. Le système Kagerer réunissant tous les récipients nécessaires se distingue par son esthétisme, son extrême sécurité et son fonctionnement non bruyant. Ces poubelles utilisées avec succès en Autriche et à l'étranger permettent de créer des «îlots écologiques» où s'effectue la collecte de tous les produits usés recyclables. Kagerer recherche des partenaires pour la vente et le montage, principalement dans les pays européens.



▲ Discharge bin with hinged bottom. For emptying packing materials and similar waste into skips or refuse trucks

Lattice-front bin for paper, Collected refuse and state of bin – full or empty – clearly visible ▼





Waste Separation Systems

In turning out their products G + K Umwelttechnologie pay special attention to the recyclability of the materials used. The refuse separation systems of recyclable PE combine elegance with functionality and versatility. They have proved their worth not only in the home, but also in hospitals, offices and schools. In 1990 this product was awarded the Austrian Environmental Protection Prize.

Abfall- und Sammel-systeme

Bei den Produkten der G * K Umwelttechnologie wird auf die Wiederverwendung von Einsatzstoffen besonderer Wert gelegt. Die aus Recycling-PE erzeugten Mülltrennsysteme vereinigen Formschönheit mit Funktionalität und vielseitiger, flexibler Einsatzmöglichkeit. Die Anwendung im Haushalt, in Spitälern, in Büros sowie im schulischen Bereich ist erprobt. 1990 wurde dieses Produkt mit dem österreichischen Umweltschutzpreis ausgezeichnet.

Systèmes de collecte des déchets

Les produits de G + K Umwelttechnologie sont toujours centrés sur la possibilité de récupération des matériaux utilisés. Les systèmes de tri des déchets en polyéthylène recyclable se distinguent par ailleurs par leur aspect esthétique, leur fonctionnalisme et leurs multiples possibilités d'utilisation. Ils ont été mis à l'épreuve avec succès dans les

G * K Umwelttechnologie

A-4451 Garsten
St.-Berthold-Allee 27
Telefon: +43/7252/47 807
Telefax: +43/7252/47 918
Deutsch, English,
Français, Español, Italiano

ménages, les hôpitaux, les bureaux et les écoles. En 1990, ce produit a reçu le prix d'écologie autrichien.

Sistemas para desechos y su recolección

En los productos de la G + K Umwelttechnologie se presta especial atención a la rentabilización de los materiales empleados. Los sistemas separadores de basura hechos de polietileno reciclado, reúnen en sí la elegancia de formas con la funcionalidad y múltiple posibilidad de flexibilidad de empleo. Se ha acreditado su empleo en casa, en hospitales, en oficinas, así como en el sector escolar. En 1990, este producto ha sido galardonado con el Premio Austríaco del Medioambiente.



Can Presses

With a 90% size reduction of empty aluminium and tinplate cans the can presses from Alutech guarantee optimum recycling. Energy-independent, maintenance-free and designed for outdoor installation, the SAG Can Presses save money and protect the environment: only 10% of transport and storage costs and only 10% of environmental impact. The line-up also includes PET Bottle Presses, Gastro-Presses, collecting bins for liquid waste (e. g. used oils) and transport bins for hazardous waste.

Dosenpressen

Optimales Recycling bieten die Dosenpressen von Alutech, die leere Alu- und Weißblechdosen um 90% verkleinern. Energieunabhängig, wartungsfrei und zum Aufstellen im Freien geeignet, helfen die SAG-Dosenpressen sparen und die Umwelt schützen: Nur noch 10% der Transportkosten, nur noch 10% der Lagerkosten, nur noch 10% der Umweltbelastung. Pet-Flaschen-Pressen, Gastropresen, Sammelbehälter für flüssige Abfälle (z. B. Altöle) sowie Gefahrguttransportbehälter ergänzen das Angebot.

Presses pour boîtes

Une solution optimale pour le recyclage: les presses SAG d'Alutech permettent de comprimer boîtes d'aluminium et de fer-blanc avec une réduction de volume de 90%. Elles fonctionnent sans consommation d'énergie, sans entretien et peuvent être installées en plein air. D'où économie de frais de transport et d'entreposage qui ne sont plus que de 10% de ceux occasionnés par les boîtes non comprimées, et réduction de la pollu-

ALUTECH Gesellschaft m. b. H.

A-5651 Lend
Nr. 25
Telefon: +43/6416/6161
Telefax: +43/6416/6161-344
Deutsch, English

tion dans la même proportion. Alutech propose également des presses pour bouteilles de PET, des presses pour boîtes et conditionnements métalliques, des conteneurs pour déchets liquides (p.ex. huiles usées) ainsi que des citernes pour le transport de substances dangereuses.

Prensas de latas

Las prensas de latas de Alutech ofrecen un reciclaje óptimo reduciendo en un 90% el volumen de las latas vacías de aluminio y de chapa blanca. Independientes de la energía, libres de entretenimiento y aptas para ser colocadas al aire libre, las prensas SAG de latas ayudan a ahorrar y proteger el medioambiente: sólo el 10% de los costes de almacenaje, sólo el 10% de carga del medioambiente. La oferta de la empresa la complementan sus prensas de botellas PET, prensas para la gastronomía, recipientes colectores para desechos líquidos (por ej. aceites usados), así como recipientes transportadores de mercancía peligrosa.



Plastics Recycling

The Replast System developed by the firm Hoffmann provides technological knowhow and machines for recycling plastics waste, e. g. PET soft drink bottles, yoghurt cups, boxes, film and other plastic packings. These are treated, shredded and reused in concrete building materials, such as concrete bricks, hollow bricks, prefabricated parts for houses, ready-mixed concrete, etc.

Kunststoffrecycling

Das von der Firma Hoffmann entwickelte Replast System bietet Technologien, Know-how und Maschinen zur Verwertung von Kunststoffmüll, wie z. B. Getränke-PET-Flaschen, Joghurtbecher, Schachteln, Folien und andere Kunststoffverpackungen. Diese werden aufbereitet, zerkleinert und in Betonbaustoffen, wie Betonziegel, Hohlblöcke, Fertigteile für Häuser, Ready-Mix Lieferbeton usw., wiederverwertet.

Recyclage des plastiques

Le système Replast développé par Hoffmann inclut technologies, savoir-faire et machines pour le recyclage des déchets de plastique tels que: bouteilles de boissons en polyéthylène, pots de yaourth, boîtes, feuilles et autres emballages en plastique. Les déchets sont préparés, broyés et mélangés au béton pour obtenir des matériaux de construction tels que parpaings, blocs creux, éléments préfabriqués, béton transporté Ready-Mix, etc.

Reciclaje de material plástico

El sistema Replast, desarrollado por la firma Hoffmann, ofrece tecnologías, know-how y máquinas para el aprovechamiento de basura de material plástico, como por ej. botellas PET de bebidas, vasos de yogur, cajas, folios y otros envases de material plástico. Estos se preparan, desmenuzan y se recuperan convirtiéndose en material de construcción de hormigón, como ladrillos de hormigón, bloques huecos, piezas acabadas para casas, ready-mix, hormigón mezclado en seco, etc.



LOUIS HOFFMANN
 Synthetic Recycling
 Technologies +
 Equipment

A-1210 Wien
 Gerasdorferstrasse 131
 Telefon: +43/1/391 208
 Telefax: +43/1/391 152
 ☎ Deutsch, English



Talking Litter-bin Man

The talking litter-bin men from Papst are intended for use in parks and fairgrounds, shopping centres, at town festivals, in banks, etc. to help keep the surroundings clean and, in a jocular way, influence people's eco-awareness. The litter-bin man can be programmed with any text and language and thus also used for advertising. The firm is eager to contact franchisees worldwide, in particular in the advertising and tourist sector.

"Bonhomme-poubelle" parlant

Le "bonhomme-poubelle" parlant de Papst peut être installé dans les parcs de loisirs et de divertissement, les centres commerciaux, les fêtes foraines, les banques et d'une façon générale partout où l'on souhaite maintenir un environnement propre en faisant appel à une méthode ludique pour éveiller la conscience écologique. Le "bonhomme-poubelle" peut être programmé avec un texte au choix dans n'importe quel langue et donc servir en même temps de support publicitaire. La société Papst souhaite travailler avec des franchisés dans le monde entier, en particulier dans les branches publicité et tourisme.

El muñeco parlante del medioambiente

Los muñecos parlantes del medioambiente, de Papst, se emplean en los parques de descanso y de distracción, en los centros comerciales, en las fiestas urbanas, instituciones bancarias, etc., por una parte, para mantener limpio el medioambiente, y, por otra, para alcanzar de manera fácil y amena una concientización de medioambiente. Este "muñeco ecologista" puede programarse con el texto que se desee, en cualquier idioma, y emplearse así también para fines propagandísticos. La empresa busca distribuidores consignatarios en todo el mundo, especialmente del sector publicitario y turístico.



Sprechender Umweltmann

Die sprechenden Umweltmänner von Papst werden in Freizeit- und Vergnügungsparks, Einkaufszentren, bei Stadtfesten, Banken usw. eingesetzt, um einerseits die Umgebung sauber zu halten, andererseits in spielerischer Art und Weise ein Umweltbewußtsein zu bewirken. Der Umweltmann kann mit jedem Text und in jeder Fremdsprache programmiert werden und somit auch zu Werbezwecken dienen. Das Unternehmen sucht weltweit Franchisenehmer, speziell aus der Werbe- und Fremdenverkehrsbranche.

Dipl.-Ing. WERNER PAPST
 Ges. m. b. H.

A-8565 St. Johann ob Hohenburg
 Moosing 28
 Telefon: +43/3137/3127
 Telefax: +43/3137/3517
 ☎ Deutsch, English

Litter-bin Man outside a savings bank



Shredding Machines

Maschinenfabrik Lindner are one of the leading producers of shredding machines and waste disposal plants with slow-running rotor. The Lindner Shredders can be used for a variety of assignments: shredding of plastics, cans, tyres, hazardous waste, wood waste, pallets, demolition wood, etc. The firm also offers complete solutions ranging from feeding and pre-screening through metal recognition, shredding and final screening to conveyance of shredded material.

MASCHINENFABRIK
LINDNER GES. M. B. H.

A-9800 Spittal/Drau
Villacher Strasse 48
Telefon: +43/4762/4017-0
Telefax: +43/4762/401 632
☐ Deutsch, English, Italiano



▲ XYLO-CUT S 1000. Compact wood shredder with guide-free, wear-resistant press-feed system.

Machines de déchiquetage

La société Maschinenfabrik Lindner est un des principaux fabricants de machines de broyage et installations d'élimination des déchets à rotor lent. Les shredders Lindner sont utilisés pour réduire en fragments matières plastiques, emballages, pneus, déchets spéciaux, déchets de bois, palettes, bois de démolition, etc. Lindner propose aussi des lignes complètes avec dispositif d'alimentation, crible préparatoire avec séparateurs de métaux, déchiquetage, criblage et évacuation.

Poly - Cut 02 - 35 - 200 Universal Shredder ▼



▲ The rotor. Hard-metal turning knife with screwed-on tool-holding components. Easy-change cutting tools. Unaffected by nails and screws, etc. up to 6 mm diam

Zerkleinerungsmaschinen

Die Maschinenfabrik Lindner gehört zu den führenden Herstellern von Zerkleinerungsmaschinen und Entsorgungsanlagen mit langsam laufendem Rotor. Zerkleinerung von Kunststoffen, Gebinden, Autoreifen, Sondermüll, Resthölzern, Paletten, Abbruchhölzern etc. sind die vielfältigen Einsatzmöglichkeiten der Lindner-Shredder. Das Unternehmen bietet auch Komplettlösungen von der Beschickung, Vorsiebung über Metallerkennung, Zerkleinerung, Siebung, bis zur Abförderung.

Máquinas trituradoras

La Maschinenfabrik Lindner se cuenta entre los productores líderes de máquinas trituradoras e instalaciones eliminadoras de rotor de marcha lenta. La trituración de materias plásticas, envases, neumáticos de autos, basura especial, maderas residuales, paletas, maderas de derribo, etc. representa las múltiples posibilidades de empleo de la trituradora-desguazadora Lindner. La empresa ofrece también soluciones completas que van desde la carga, precribado con identificación de metal, trituración, tamizado, hasta su misma transportación.

Waste Presses



Meindl Ges.m.b.H. develop innovative machines and plants for recycling and reducing waste. The latest separating system, e. g. the MEPAC 20-06/4 with several pressing chambers, ensures maximum order, whatever the enterprise, thanks to sorted-waste baling. Of horizontal or vertical design, the MEPAC presses are particularly suitable for baling waste and packing material such as paper, plastic films, cartons, PET bottles, cans, barrels, etc. and will compact loose material to 1/20th its original size.

Abfallpressen

Die Meindl Ges. m. b. H. entwickelt innovative Maschinen und Anlagen für die Abfallverwertung und -verminderung. Das neueste Trennsystem, z. B. MEPAC 20-06/4 mit mehreren Preßkammern, sorgt für geordnete Platzverhältnisse in jedem Unternehmen durch sortenrein gepreßte Ballen. Diese MEPAC Pressen in horizontaler oder vertikaler Ausführung sind besonders geeignet für Abfall- und Verpackungsmaterialien, wie Papier, Folien, Kartonagen, PET-Flaschen, Dosen, Fässer etc. und verdichten loses Vormaterial bis auf 1/20tel.

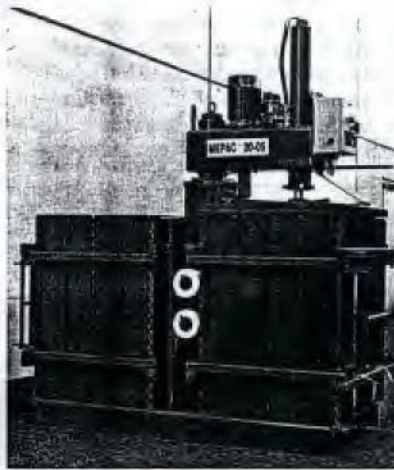
Presses à déchets

Meindl développe des machines et installations innovantes pour le recyclage et la réduction de volume des déchets. Son nouveau système de séparation, p.ex. en version MEPAC 20-06/4 avec plusieurs chambres de compression fournit des balles pressées de déchets non mélangés, permet un stockage rationnel et fait gagner de la place. Les presses MEPAC, qui existent en modèle horizontal ou vertical, conviennent spécialement pour les déchets et matériaux d'emballages et de conditionnement tels que papier, feuilles de plastique, cartonnages, bouteilles en polyéthylène, boîtes, fûts, etc., qui peuvent être comprimés jusqu'à ne représenter plus que 5 % du volume des matériaux en vrac.

Prensas de residuos

La Meindl GesmbH. desarrolla máquinas innovadoras e instalaciones para el aprovechamiento y la reducción de basuras. El sistema más reciente de separación, por ej. la MEPAC 20-06/4, con varias cámaras de prensado, permite un acondicionamiento ordenado de lugar en cada empresa gracias a las balas o pacas o bloques prensados específicamente según clasificación. Estas prensas MEPAC, de ejecución horizontal y vertical, se prestan especialmente para materiales de basura y envases, como papel, folios, cartones, botellas PET, latas, toneles, etc. La compactación de materiales sueltos es de hasta un veinteavo de su volumen original.

MEINDL Ges. m. b. H.
MEPAC Pressen-Anlagenbau
 A-4210 Gallneukirchen/Linz
 Trefflinger Allee 14
 Telefon: +43/7235/(6)2549
 Telefax: +43/7235/(6)2120
 ☎ Deutsch, English, Français,
 Español



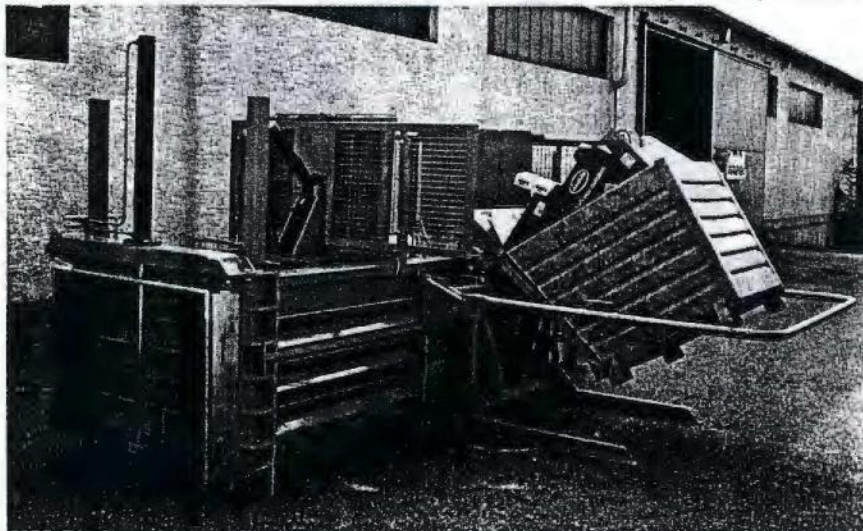
Vertical Baling Press. Mepac 20-05/2 ▲



Multichamber Baling Press.
 Separating system Mepac 20-06/4 ▼

Barrel or Can Press. Mepac 20-16F ►

Horizontal Baling Press. Mepac 30-18 ▼





Compost Turners

For composting organic waste and processing contaminated soil the firm Morawetz produces tractor-mounted and self-propelled compost turners for triangular windrow composting. The lineup embraces seven tractor-mounted models with working widths of 2.5 to 3.3 m and three self-propelled compost turners with working widths of 2.5 to 4.5 m. Characterised by efficient operation, simplicity of design and troublefree function, the machines are doing service in many European countries.

Mezcladoras de compost

Para el compostaje de desechos orgánicos y tratamiento de tierra contaminada la firma Morawetz produce mezcladoras de compost, tiradas por tractor o autopropulsadas para el compostaje, lográndose montoncillos piramidales. Se ofrecen siete tipos de mezcladoras para tractor, de anchos de trabajo de 2,50–3,30 m, así como tres mezcladoras autopropulsadas, de anchos de trabajo de 2,50–4,50 m. Las máquinas se distinguen por su excelente manera de trabajar, por su construcción sencilla y funcionamiento libre de fallos. Se emplean en distintos países de Europa.

Kompostumsetzgeräte

Für die Kompostierung organischer Abfälle und Bearbeitung kontaminierter Erde fertigt die Firma Morawetz traktorgezogene und selbstfahrende Kompostumsetzer für Dreiecksmietenkompostierung. Angeboten werden sieben Typen von Traktormaschinen, mit Arbeitsbreiten von 2.50–3.30 m, sowie drei Selbstfahrer mit Arbeitsbreiten von 2.50–4.50 m. Die Maschinen zeichnen sich durch hervorragende Arbeitsweise, einfache Bauart und störungsfreie Funktion aus und sind in verschiedenen Ländern Europas in Einsatz.

Recoupeurs de compost

Pour le compostage des déchets organiques et le traitement de la terre contaminée, Morawetz propose des recoupeurs automobiles pour tas triangulaires. On trouve à son programme sept types de tracteurs pour une largeur de travail de 2,50 à 3,30 m ainsi que trois recoupeurs autotractés pour une largeur de travail de 2,50 à 4,50 m. Ces matériels en utilisation dans différents pays d'Europe se distinguent par la simplicité de leur construction ainsi que par leur fiabilité de fonctionnement et la qualité du travail fourni.

- 1 Self-propelled compost turner
- 2 Self-propelled compost turner
- 3 Tractor-mounted compost turner
- 4 Tractor-mounted compost turner

OSKAR MORAWETZ
Maschinenbau

A-4943 Geinberg
Gimpling 19
Telefon: +43/7723/2217
Telefax: +43/7723/3706
Deutsch, English, Italiano



Composting of Waste



The firm Neuhold is engaged among other things in the planning, production, assembly and startup of components and turnkey plants for the composting of waste. The plants perform preprocessing, fermentation and final processing operations and come complete with shredders, mixing and screening units and automatic windrow forming and turning devices.

The advantages of these waste composting plants are:

- clean, dustfree operation thanks to enclosed machine design,
- high screening efficiency thanks to use of special mixer and screening devices for separating compostible from non-compostible waste,
- low initial and maintenance costs.

Müllkompostierung

Die Firma Neuhold beschäftigt sich mit der Planung, Herstellung, Montage und Inbetriebnahme von Komponenten und Gesamtanlagen für die Abfallkompostierung. Die Anlagen bestehen aus der Grobaufbereitung, der Fermentation und der Feinaufbereitung und sind im wesentlichen mit Zerkleinerungsanlagen, Misch- und Siebanlagen und auto-

matischen Mietenaufsetz- und -umsetzmaschinen ausgerüstet.

Die Vorteile dieser Müllkompostierungsanlagen bestehen in

- sauberem und staubfreiem Betrieb durch weitgehend geschlossene Maschinen
- hohem Ausschleusungsgrad durch spezielle Misch- und Siebtrommeln zur Trennung der kompostierbaren von den nicht kompostierbaren Fraktionen
- niedrigen Investitions- und Wartungskosten.

Compostage des ordures

Neuhold assure l'étude, la fabrication, le montage et la mise en route de matériels et installations complètes de compostage des ordures. Les installations qui se composent de stations de dégrossissage, de fermentation et de traitement final sont généralement équipées de systèmes de broyage, de systèmes de criblage et de mélange ainsi que de recycleurs automatiques.

Ces installations de compostage présentent les avantages suivants:

- fonctionnement propre, sans dégagement de poussière, les machines étant presque entièrement fermées,
- triage efficace grâce à l'utilisation de

tambours cribleurs-mélangeurs pour séparer les produits compostables des produits non compostables,

- coûts d'investissement et d'entretien peu élevés.

Compostaje de basura

La firma Neuhold se ocupa del planeamiento, de la producción, montaje y puesta en marcha de componentes e instalaciones completas para el compostaje de basuras. Las instalaciones comprenden la preparación gruesa o basta de la fermentación y la preparación fina. Esencialmente están equipadas de instalaciones trituradoras, instalaciones mezcladoras y de criba y de máquinas automáticas de superposición y mezcla de almiarres o amontonamientos.

Las ventajas de esas instalaciones de compostaje de basura consisten en:

- servicio limpio y libre de polvo gracias a máquinas en gran parte cerradas
- alto grado de tamizado por especiales tambores mezcladores y de tamiz para la separación de las partes o fracciones compostables de las no compostables
- costes bajos de inversión y de mantenimiento.

▼ Composting plant

NEUHOLD Ges. m. b. H.

A-8200 Gleisdorf

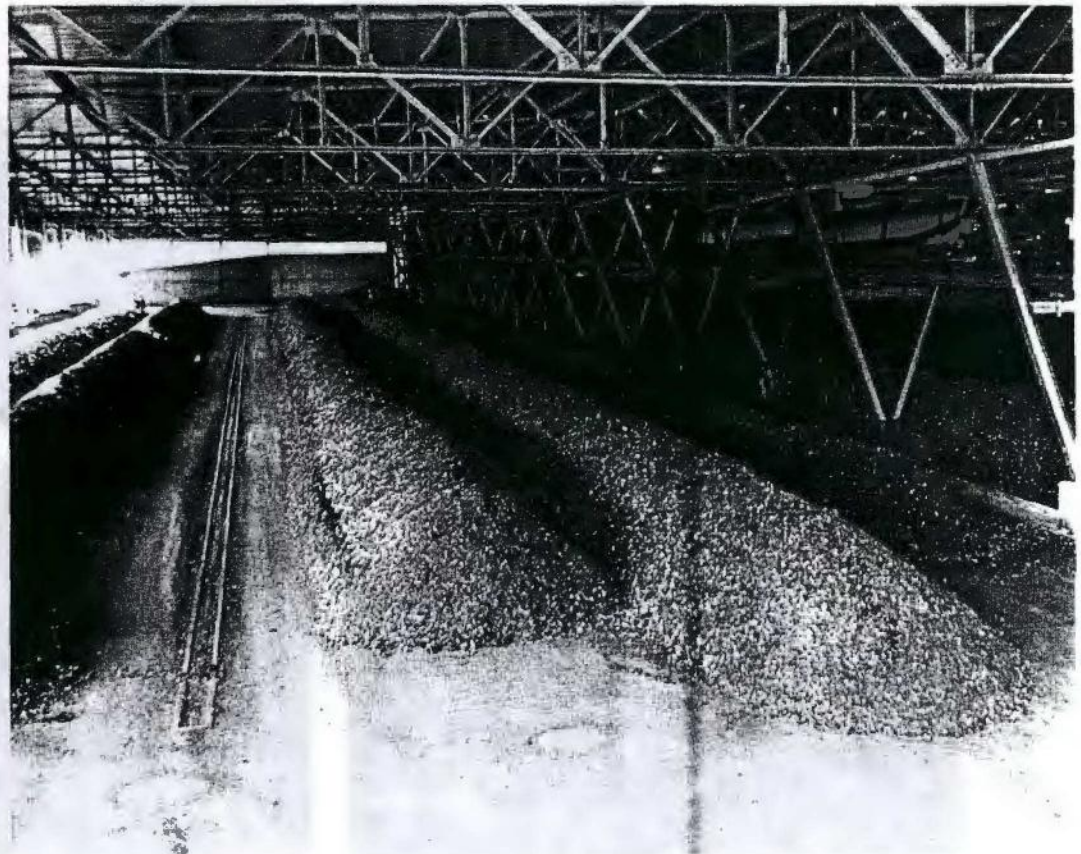
Weizer Strasse 49

Telefon: +43/3112/4057-0

Telex: 312069

Telefax: +43/3112/4320

☎ Deutsch, English, Français, Italiano



Waste Disposal Technology and Engineering

TBU are engaged exclusively in consultation and planning in the waste disposal technology and soil protection sectors. Internationally the activities and services of TBU embrace:

- the creation of practice-oriented waste handling concepts for large areas and urban centres as adapted to socio-economic conditions, and
- the planning of new, or optimisation of existing, waste treatment plants (landfills, composting works, sorting plants, etc.)

Abfallwirtschaftskonzepte und Engineering

TBU beschäftigt sich ausschließlich mit Aufgaben der Beratung und Planung in den Fachgebieten Abfallwirtschaft und Bodenschutz. International liegen die Arbeits- und Interessenschwerpunkte von TBU

- in der Erstellung praxisorientierter, dem sozioökonomischen Umfeld angepaßter Abfallwirtschaftskonzepte für Großregionen und Ballungszentren,
- in der Planung neuer bzw. der Optimierung bestehender Abfallbehandlungsanlagen (Deponien, Kompostwerke, Sortieranlagen usw.).

Concepción de la economía de los desechos y engineering

La TBU se ocupa exclusivamente del asesoramiento y planificación en los sectores especiales de la economía de los desechos y protección del suelo. Internacionalmente los puntos fuertes de trabajo y de interés de la TBU se concretizan en:

- la concepción de proyectos de energía de los desechos, orientados a la práctica y adaptados al ámbito socio-económico para regiones grandes y centros de aglomeración
- la planificación de instalaciones nuevas u optimación de instalaciones ya existentes de tratamiento de basura (depósitos, instalaciones de compostaje, instalaciones clasificadoras, etc.).

Concepts de gestion des déchets et ingénierie

TBU intervient exclusivement au niveau de l'activité conseil et de l'étude de projets dans les secteurs gestion des déchets et protection des sols. Ses prestations internationales ont pour points forts:

Domestic refuse sorting plant



- l'élaboration de concepts de gestion des déchets basés sur l'application pratique et adaptés au contexte socio-économique, pour les régions et les grosses agglomérations;
- l'étude de nouvelles installations de traitement des déchets ou l'optimisation des installations existantes (décharges, usines de compostage, installations de tri, etc.).

**TBU – Technisches Büro für
Umweltschutz Ges. m. b. H.**

A-6020 Innsbruck
Defreggerstrasse 18
Telefon: +43/512/493 733
Telefax: +43/512/493 022
☐ Deutsch, English, Italiano

Municipal Vehicles

Waste disposal, street cleaning and road and plant repair call for practice-oriented vehicles. Steyr chassis have been specially developed for such jobs and, together with the vehicle bodies, ensure optimum solutions to the problems of this particular sector. Decades of experience and maximum precision in research, development and production have made the trucks from Steyr what they today are: reliable and sought-after vehicles for municipal use.

Kommunalfahrzeuge

Die Entsorgung und Reinigung sowie die Instandsetzung von Straßen und Anlagen erfordert praxisgerechte Fahrzeuge. Die Fahrgestelle von Steyr wurden für diese Anwendung entwickelt und ergeben mit den Aufbauten die optimalen Problemlösungen für diese speziellen Einsatzzwecke. Jahrzehntelange Erfahrung sowie die Präzision in Forschung, Entwicklung und Fertigung hat die Trucks aus Steyr zu dem gemacht, was sie heute sind: zuverlässige und gefragte Fahrzeuge im kommunalen Bereich.

Engins de voirie

Les travaux de nettoyage et d'entretien des chaussées et des espaces publics ne peuvent être effectués correctement qu'avec des engins appropriés. Steyr a développé des châssis spéciaux pour les engins de voirie qui, équipés de caisses appropriées, permettent de résoudre dans les meilleures conditions les problèmes spécifiques de ce domaine. Des dizaines d'années d'expérience ainsi que la précision caractéristiques de Steyr dans le domaine de la recherche, du développement et de la production ont fait de ces véhicules ce qu'ils sont aujourd'hui: des engins fiables, toujours appréciés des services communaux.

Vehículos comunales

El transporte de basuras, la limpieza, así como la reparación de carreteras e instalaciones requiere vehículos bien ajustados a la práctica. Los chasis de Steyr se han desarrollado especialmente para estos fines de empleo y ofrecen, junto con sus superestructuras, las

STEYR NUTZFAHRZEUGE AG

A-4400 Steyr
 Schönauer Strasse 5
 Telefon: +43/7252/585-0
 Telefax: +43/7252/486 50
 Deutsch, English, Français

soluciones óptimas para estos específicos fines de empleo. Una experiencia de decenios, así como la precisión en la investigación, desarrollo y fabricación ha hecho de los „trucks“ de Steyr lo que son hoy en día: vehículos fiables y solicitados en el campo comunal.



Chromium Thermowells Filter Candles

Metallwerk Plansee produce thermowells, burner nozzles, filter candles, heat exchangers, spray disks and linings of Ducropur and Ducrolloy. These chromium materials display high resistance to various corrosive aqueous media, slags and hot (sulphurous) gases. The firm's products are used in refuse incinerators and thermal waste disposal plants and in the chemical, petrochemical and glass industries. Metallwerk Plansee export with success to Japan, Germany, the Netherlands and the USA.

Chrom-Schutzrohre / -Filterkerzen

Das Metallwerk Plansee produziert Thermoelementschutzrohre Brennerdüsen, Filterkerzen, Wärmetauscher, Zerstäuberscheiben sowie Auskleidungen aus Ducropur und Ducrolloy. Diese Chromwerkstoffe weisen eine hohe Beständigkeit gegen verschiedene korrosive, wässrige Medien, Schlacken und Heißgase (schwefelhaltig) auf. Anwender dieser Produkte sind Verbrennungs- und thermische Entsorgungsanlagen, die chemische Industrie, die Petrochemie sowie die Glasindustrie. Das Metallwerk Plansee exportiert erfolgreich nach Japan, Deutschland, den Niederlanden und die USA.

Tubes de protection au chrome/bougies filtrantes

La société Metallwerk Plansee produit des tubes de protection pour thermo-éléments, des buses de brûleur, des bougies filtrantes, des échangeurs de chaleur, des disques de pulvérisateur ainsi que des revêtements en Ducropur et Ducrolloy. Ces matériaux à base de chrome sont extrêmement résistants aux différents agents corrosifs aqueux de même qu'aux scories et aux gaz (sulfureux) chauds. Ces produits sont destinés aux systèmes de combustion et installations de traitement thermique des déchets ainsi qu'à l'industrie chimique, pétrochimique et verrière. Les usines Plansee exportent une bonne partie de leur production au Japon, en Allemagne, aux Pays-Bas et aux Etats-Unis.

Tubos protectores de cromo Cartuchos filtrantes

La Metallwerk Plansee produce tubos protectores de termoelementos, boquillas de mechero, cartuchos filtrantes, termocambiadores, discos



Filter candles 560G-1 ▲



◀ Thermocouple protection tube 547E-7

Ignition guard, burner nozzle 534F-2 ▼



de pulverización, así como revestimientos de ducropur y ducrolloy. Estos materiales de cromo tienen una alta resistencia contra distintos medios corrosivos y acuosos, escorias y gases calientes (sulfurosos). Estos productos los utilizan las instalaciones de combustión y de depolución térmica, la industria química, la petroquímica, así como la industria cristalera o del vidrio. La Metallwerk Plansee exporta con gran éxito al Japón, a Alemania, Países Bajos y a los EE. UU.

METALLWERK PLANSEE
Ges. m. b. H.

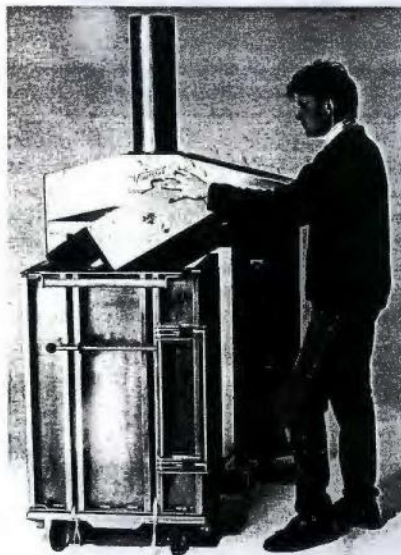
A-6600 Reutte
Telefon: +43/5672/70-2879
Telex: 55505 plana
Telefax: +43/5672/70-510
☎ Deutsch, English, Français

Waste Presses



The Voran Waste Press is a universal machine of stainless steel for compacting practically all materials, e. g. cartons, plastic, film waste, fruit and vegetable crates, cans, canisters and 200-litre barrels.

The M2 Waste Shredder will reduce glass, plastic bottles, milk and drink packs and oil tins to 10% of their original volume, thus minimising refuse disposal costs. The shredder for expanded polystyrene with pre-shredder and blower/fine grinding units has been designed for reducing waste to a grain size suitable for recycling or reuse (capacity approx. 8 m³/h).



▲ Waste press

Müllpressen

Die Voran Müllpresse in Edelstahlausführung ist eine Universalpresse zum Pressen fast aller Materialien, wie Kartonagen, Folienabfälle, Obst- und Gemüsesteigen, Dosen, Kanister sowie 200 l-Fässer.

Mit dem Müllzerkleinerer M2 kann das Volumen von Glas, Plastikflaschen, Milch- und Getränkeverpackungen sowie Öldosen bis auf 10% reduziert werden, wodurch die Müllabfuhr- bzw. Deponiekosten minimiert werden.

Die Styroporzerkleinerungsanlage bestehend aus Vorzerkleinerer und Gebläsefeinmühle dient zum Zerkleinern von Styroporformteilen in die für ein gezieltes Recycling oder Verbrauch optimale Korngröße (Leistung ca. 8m³/h).

Presses à déchets

La presse à déchets Voran, en acier inoxydable, est une presse universelle utilisable à peu près pour tous les matériaux: cartons, déchets de feuilles de plastique, cageots à fruits et légumes, boîtes, bidons et même fûts de 200 litres. Le broyeur de déchets M2 permet de réduire au dixième de leur volume bouteilles de verre ou de plastique, briques de lait ou de jus de fruits et boîtes-bidon d'huile, ce qui se traduit par des économies au niveau de la collecte et de la mise en décharge.

Le dispositif de broyage du polystyrène expansé, avec broyage préalable et broyage fin à soufflante permet d'obtenir une granulométrie optimale pour le recyclage des pièces moulées en polystyrène expansé (rendement: env. 8 m³/h).

VORAN
MASCHINEN KRANZL
Ges. m. b. H. Nfg. KG

A-4632 Pichl/Wels
Telefon: +43/7247/8226-0
Telefax: +43/7247-452
Deutsch, English, Français

Waste shredder ▶



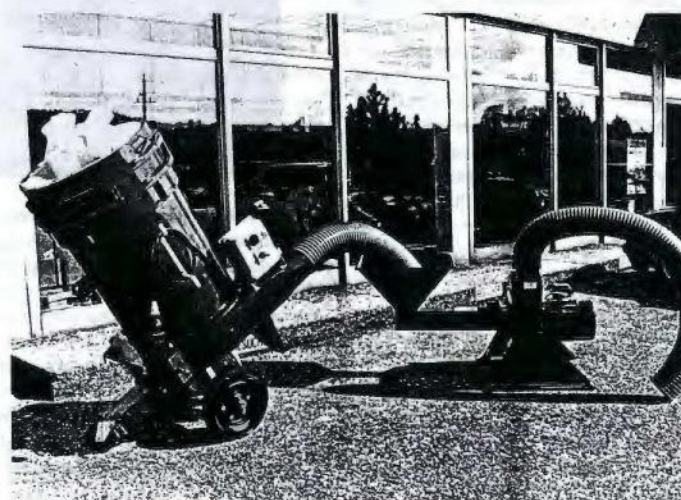
Prensas de basuras

La prensa de basuras Vorau, de ejecución de acero fino, es una prensa universal para prensar casi todo tipo de materiales, como cartonajes, desechos de láminas, jabas o cajas de fruta y verduras, latas, bidones, así como toneles de 200 l.

Con la desmenuzadora de basura M2 puede reducirse al 10% el volumen de vidrio, botellas plásticas, envases de leche y de bebidas y latas de aceite, con lo que se minimizan los costes de transporte de basura y los de su depósito.

La instalación desmenuzadora de estiropor, que consta de una predesmenuzadora y de un molino fino soplante sirve para desmenuzar piezas de forma de estiropor al tamaño de granulado óptimo para su determinado reciclaje o consumo (rendimiento aprox. 8 m³/hora).

Expanded polystyrene shredder ▶





Shredding Machines

The firm UNTHA specialises in the production of universal shredding machines. Thanks to a sophisticated new 4-shaft cutting assembly the intake of various materials can be appreciably increased. Doubling of the thruput makes these machines the answer to many industrial problems. At approx. 15 rpm upwards the variable cutting tool speed of this slow shredder makes it suitable for handling an extra-wide range of materials, e. g. wood, films, plastics, tin barrels, car tyres, etc. Machines can also be adapted to customers' requirements. UNTHA Shredders are renowned and represented worldwide.

Máquinas desmenuzadoras

Las máquinas demenzadoras universales son la especialidad de la firma UNTHA. Un nuevo sistema madurado de 4 ejes de corte posibilita un aumento de la capacidad de admisión o entrada de los diversos materiales. Asimismo la duplicación del rendimiento de paso hace de este aparato el auténtico solucionador de los problemas que se presentan en el campo de empleos industriales. Gracias al variable número de revoluciones del

mecanismo de corte de este motor de velocidad reducida, de 15 – para arriba – r.p.m./min., se cubre una gama, mucho más grande, de materiales a desmenuzar, cuales son, por ejemplo, entre otros, madera, folios o películas, plásticos, envases de hojalata y neumáticos de auto. Los deseos especiales individuales se tratan de conformidad con el cliente. Las desmenuzadoras UNTHA son conocidas y representadas en todo el mundo.

Zerkleinerungsmaschinen

Universal-Zerkleinerungsmaschinen sind die Spezialität der Firma UNTHA. Ein ausgereiftes neues 4-Schneidwellen-System ermöglicht eine Erhöhung der Einzugsleistung diverser Materialien. Auch die Verdoppelung der Durchsatzleistung macht diese Geräte zum echten Problemlöser im industriellen Anwendungsbereich. Durch die variable Schneidwerksdrehzahl dieser Langsamläufer mit ca. ab 15 U/Min. wird eine wesentlich größere Bandbreite an Zerkleinerungsgütern wie u.a. Holz, Folien, Kunststoffe, Blechfässer und Autoreifen abgedeckt. Sonderwünsche werden kundengerecht behandelt. UNTHA-Zerkleinerer sind weltweit bekannt und vertreten.

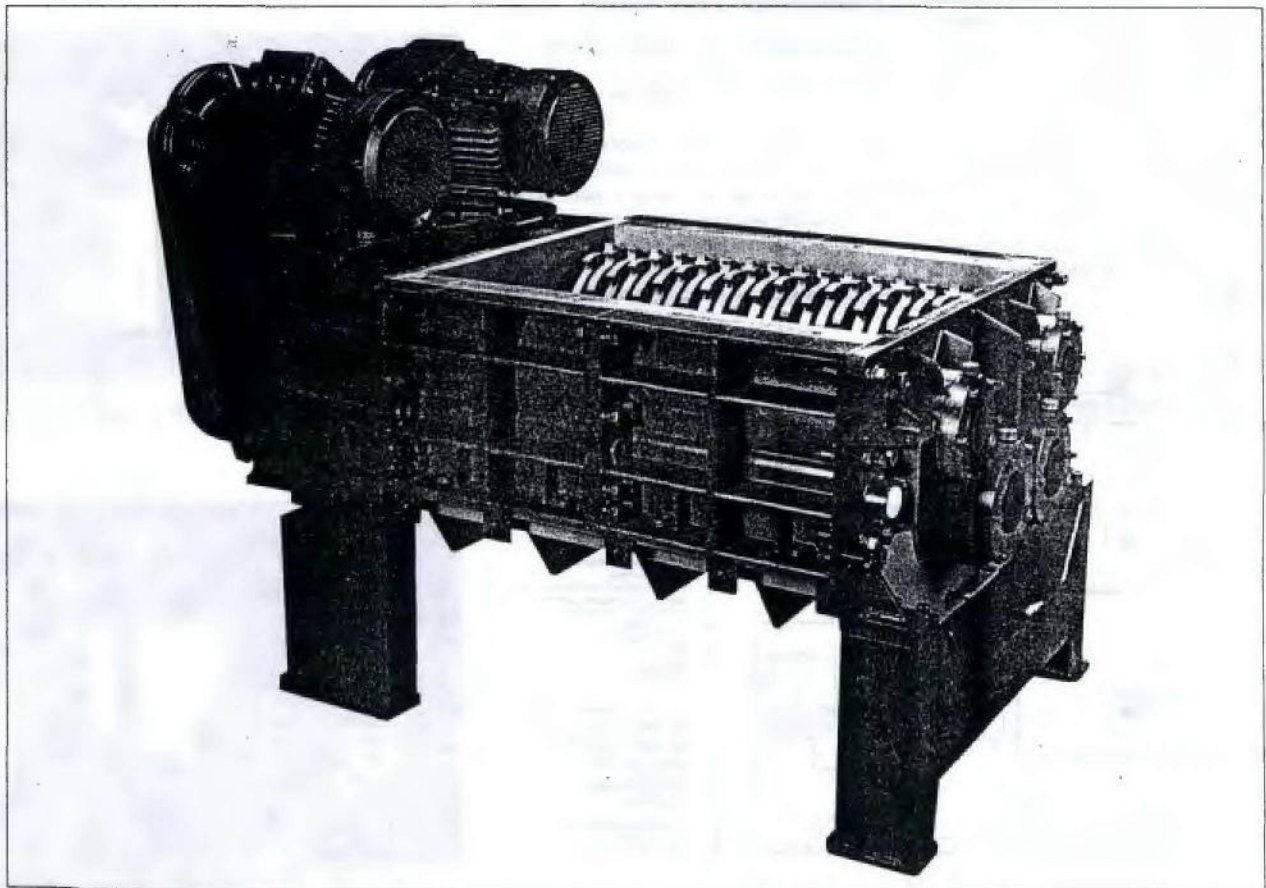
UNTHA – Zerkleinerungstechnik
Anton Unterwurzacher
Maschinenbau Ges.m.b.H.

A-5431 Kuchl
Kellau 41
Telefon: +43/6244/7770
Telefax: +43/6244/7770
Deutsch, English, Français

Déchiqueteuses

La société UNTHA est spécialisée dans les déchiqueteuses universelles. Un nouveau système sophistiqué comprenant 4 arbres porte-lames permet d'augmenter la capacité d'alimentation pour les divers matériaux. Avec un débit doublé, ces déchiqueteuses résolvent de nombreux problèmes pour l'industrie. Grâce à la vitesse variable du mécanisme de coupe de ces déchiqueteuses à faible vitesse – à partir de 15 tr/mn env. – il est possible de les utiliser pour des produits aussi divers que le bois, les feuilles de plastique, les matières plastiques, les fûts métalliques et les pneus. UNTHA étudie des solutions spécifiques des besoins du client. Les déchiqueteuses UNTHA sont connues et vendues dans le monde entier.

▼ RS 50-4-5 Shredder



Waste Water, Sewage, Exhaust Air Treatment



AT plants and processes are used for cleaning heavily contaminated sewage and for treating organic waste with simultaneous energy recovery. Plants are tailored to customers' specifications. Production is based on experience in the handling of industrial and municipal sewage and sludges, organic waste and agricultural substances. The lineup includes: Anaerobic reactors – tanks and equipment, gas storage tanks, plant for gas conveyance, compression and desulphurisation, gas flares and exhaust air treatment, as well as equipment for aerobic waste water treatment.

Knowhow transfer, consultation and assistance in plant construction and startup complete the list of services offered.

Abwasser -, Abfall- und Abluftbehandlung

AT-Anlagen und Verfahren werden zur Reinigung hochbelasteter Abwässer und Aufbereitung von organischen Abfallstoffen mit gleichzeitiger Energiegewinnung eingesetzt. Die Anlagenkonzeption erfolgt jeweils nach den kundenspezifischen Anforderungen. Erfahrungen liegen mit der Behandlung von industriellen und kommunalen Abwässern und Schlämmen, Biomüll und landwirtschaftlichen Substraten vor. Geboten werden Anaerobreaktoren – Tanks und Ausrüstung, Gasbehälter, Anlagen für die Gasförderung – Verdichtung und Entschwefelung, Gasabfackelung und Abluftbehandlung sowie Ausrüstung für die aerobe Abwasserreinigung. Know-how – Transfer, Beratung und Unterstützung beim Bau und der Inbetriebnahme komplettieren das Leistungsangebot.

Traitement des eaux usées, des déchets et de l'air d'évacuation

Les installations et procédés AAT sont utilisés pour l'épuration des eaux usées fortement polluées ainsi que pour le traitement des déchets organiques avec récupération d'énergie. Ces installations sont étudiées individuellement en fonction des besoins du client. AAT dont l'expérience s'étend aux domaines du traitement des eaux et boues industrielles et communales, des déchets biodégradables et des substrats agricoles propose les équipements suivants: réacteurs anaérobies - réservoirs et équipement; réservoirs à gaz, installations de manutention, compression et désulfuration, incinération des gaz et traitement de l'air d'évacuation; équipements d'épuration aérobie des eaux usées. Les prestations de la société s'étendent au transfert de technologie, au conseil et à l'assistance pour la construction et la mise en route des installations.

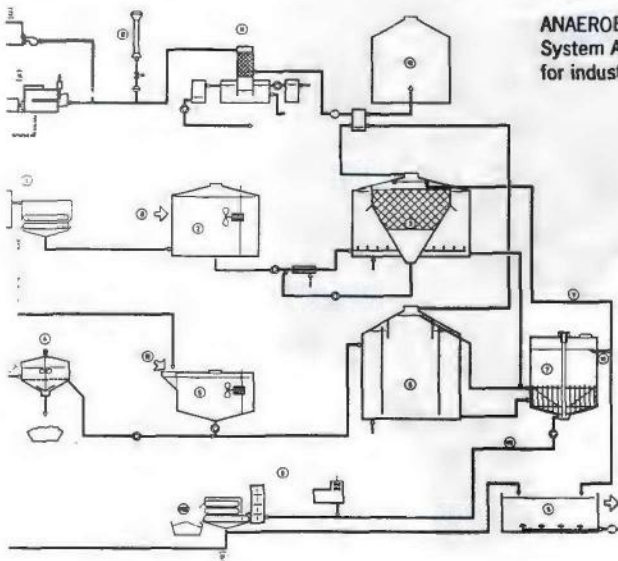
Tratamiento de aguas residuales, de desechos y de aires de salida

Las instalaciones y procesos AAT se emplean para la limpieza de desagües, de alta carga, y para la preparación de residuos orgánicos con simultánea recuperación de energía. La concepción de las instalaciones se hace según los requerimientos específicos de los clientes.

AAT Abwasser- und Abfalltechnik G.m.b.H. & Co

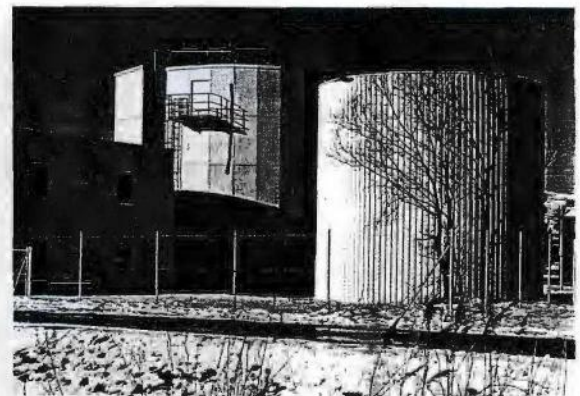
A-6922 Wolfurt
Kellhofstrasse 12
Telefon: +43/5574/65 190
Telefax: +43/5574/65 18 56
Deutsch, English

Se tienen experiencias en el tratamiento de desagües industriales y comunales, de lodos, de biobasura y substratos agrícolas. Se ofrecen reactores anaeróbicos, tanques y equipo, depósitos de gas o gasómetros, instalaciones para la extracción, transporte, compresión y desulfuración del gas, para el quemador de gas de fuga y para el tratamiento del aire de salida, así como equipamientos para la limpieza aeróbica de aguas residuales. Completan la oferta de prestaciones de la empresa la transferencia de su know-how, su asesoramiento y apoyo en la construcción y la puesta en marcha.



ANAEROBIC TREATMENT PLANT System AAT for industrial use

1. separation of coarse-material
 2. buffer and acidification tank
 3. AAT anaerobic reactor
 4. pre-treatment plant, separator, hygienising, etc.
 5. buffer and mixing basin
 6. AAT solids reactor
 7. secondary sludge thickener
 8. sludge dewatering
 9. aerated buffer tank with effluent in public sewage treatment plant / rest in aerobic final sedimentation
 10. AAT gas holder
 11. desulphurization
 12. flare
 13. boiler
 14. cogeneration-module
- L. high loaded waste water with solids
 E. waste water with plenty solids, sludge, etc.
 B. solids like sludge, organic waste, etc.
 V. pre-treated waste water
 M. muddy water
 VI. thickened excess sludge
 VII. dewatered sludge
 D. Faecal
 X. purified waste water effluent
 XL. thermal energy
 XL. mech. and electr. energy



Gas storage tank ▲



Digester ▼



Cooling and Air Conditioning Water Treatment

Cooling systems are prone to many problems caused by such things as precipitation and deposit formation, corrosion and organic growth (algae, bacteria, slime moulds). These lead to faulting and increased operating costs. BWT-Anlagen solve these problems while paying attention to customers' wishes.

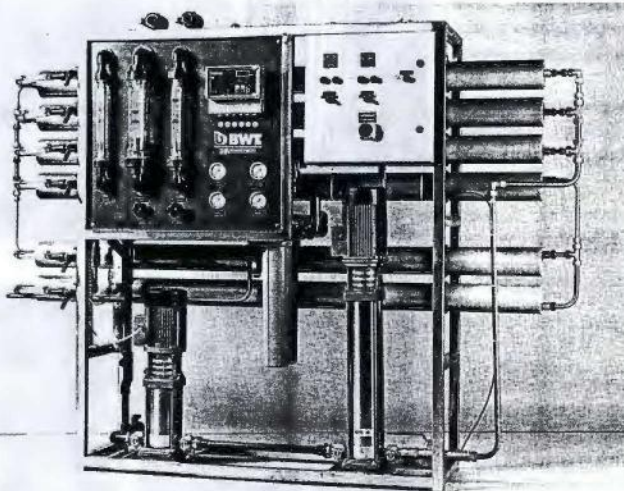
- Water softening through ion exchange or nano-filtration.
- Partial / complete demineralisation through reverse osmosis or ion exchange.
- Dosing plants (in conjunction with biocides, corrosion inhibitors, hardness stabilizers and dispersators).
- UV and ozone plants for disinfection or oxidation.

Kühl- und Klimawasser- aufbereitung

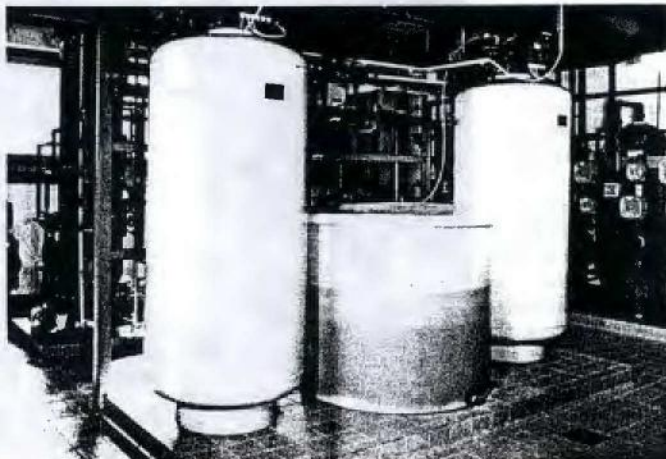
In Kühlsystemen zeigen sich vielfach Probleme in Form von Ausfällungen und Belagbildung, Korro-

sionen und biologischem Wachstum (Algen, Bakterien, Schleimbildner). Dies führt zu Funktionsstörungen sowie erhöhten Betriebskosten. BWT-Anlagen lösen diese Probleme und berücksichtigen alle kundenspezifischen Wünsche:

- Enthärtung durch Ionenaustausch oder Nanofiltration
- Teil/Vollentsalzung durch Umkehrosmose oder Ionenaustausch
- Dosieranlagen (in Verbindung mit Bioziden, Korrosionsinhibitoren, Härtestabilisatoren und Dispergatoren)
- UV-Anlagen und Ozonanlagen zur Desinfektion bzw. Oxidation.



◀ Reverse osmosis plant (Cap: 300 l/h)



◀ Water softening plant (Cap: 25 m³/h)

BWT-AKTIENGESELLSCHAFT

A-5310 Mondsee
Walter-Simmer-Strasse 4

Telefon: +43/6232/5011

Telefax: +43/6232/4058

☎ Deutsch, English, Français

Préparation de l'eau de refroidissement et de climatisation

Il arrive fréquemment que les systèmes de refroidissement posent des problèmes dus à la présence de précipités ou de dépôts, à la corrosion et au développement d'organismes biologiques (algues, bactéries, myxomycètes). Avec pour conséquence un mauvais fonctionnement et une augmentation des coûts. Les systèmes BWT résolvent ce problème en tenant compte des besoins spécifiques du client:

- adoucissement par échange d'ions ou nanofiltration,
- dessalement partiel ou total par osmose inverse ou échange d'ions,
- installations de dosage (pour l'utilisation de biocides, inhibiteurs de corrosion, stabilisateurs de dureté, agents dispersants),
- installations à rayons ultraviolets et à ozone pour la désinfection ou l'oxydation.

Preparación de agua de refrigeración y de agua de clima

En los sistemas de refrigeración se presentan muchas veces problemas en forma de precipitaciones y formación de capas, corrosión y crecimientos biológicos (algas, bacterias, mucilagíferos). Esto lleva a perturbaciones del funcionamiento, así como a costes elevados de servicio. Las instalaciones BWT resuelven estos problemas y tienen en cuenta todos los deseos específicos del cliente:

- desendurecimiento por intercambio de iones o nanofiltración
- desalinización parcial/completa por ósmosis de inversión o intercambio de iones
- instalaciones dosificadoras (en unión con biocidas, inhibidores de corrosión, estabilizadores de dureza y dispersadores)
- instalaciones UV y de ozono para la desinfección u oxidación.



Sludge Heat Exchangers Waste Water Tanks

The firm Enco plans and builds sludge heat exchangers of double-pipe design in C-steel or stainless steel or a combination of both, depending on composition and aggressiveness of the liquid media. The piping is adapted in layout to available space and is contained in a special frame.

In the waste water treatment sector the company turns out all kinds of containers, e. g. solvent containers and heatable and coolable process tanks.

Enco also supply neutralisation plants for the food industry. In this sector, in particular for small plants and cramped operating conditions, a prismatic neutralisation tank type of crimped design has proved its worth.

Circular thickeners of up to 25 m diameter for sewage clarification plants are also in the lineup.

Schlammwärmetauscher / Abwasserbehälter

Die Firma Enco plant und baut Schlammwärmetauscher in Form von Doppelrohren. Je nach Zusammensetzung und Aggressivität der flüssigen Medien werden sie aus C-Stahl bzw. Edelstahl oder einer Kombination beider Werkstoffe gefertigt. Die Rohre werden den Platzverhältnissen entsprechend angeordnet und in einem Rahmengestell zusammengebaut.

Im Bereich der Abwasserbehandlung werden alle Arten von Behältern, wie z. B. Löse-mittellager, sowie heiz- und kühlbare Prozeßbehälter hergestellt.

Weiters befaßt sich Enco mit der Lieferung von Neutralisationsanlagen im Lebensmittelbereich. Hier hat sich, speziell bei kleineren Anlagen und beengten Platzverhältnissen im Gebäude, eine prismatische Ausführung des Neutralisationsbehälters in gesickelter Form bewährt.

Außerdem werden Rundeindicker bis 25 m Durchmesser für Abwasserreinigungsanlagen produziert.

Echangeurs de chaleur pour boues - Réservoirs pour eaux usées

Enco étudie et construit des échangeurs de chaleur pour boues, sous forme de doubles tuyaux. Suivant la composition et l'agressivité des liquides, ils sont exécutés en acier au carbone ou en acier inoxydable, ou encore en combinant ces deux matériaux. Les tuyaux sont montés sur châssis, leur disposition est fonction de la place disponible.

Cette société fabrique par ailleurs des réservoirs de tous types pour installations de trai-

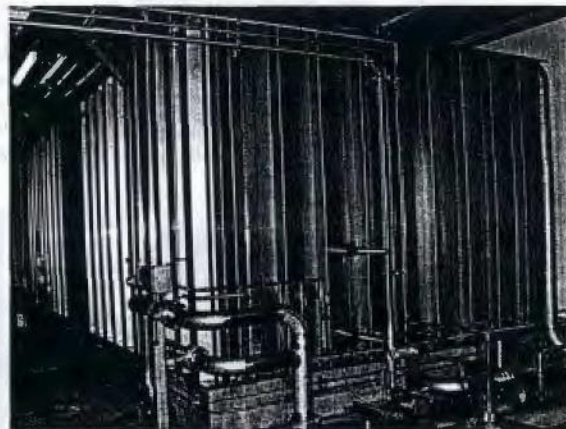
ENCO
Energie Componenten
Gesellschaft m. b. H.

A-4812 Pinsdorf
Mitterweg 8
Telefon: +43/7612/677 71-0
Telefax: +43/7612/677 71-25
Deutsch, English



Sludge heat exchanger ▲

Neutralisation tank ▼



Sludge tank ▼



tement des eaux usées, notamment: réservoirs pour solvants, réservoirs process chauffables ou refroidissables.

Dans un autre domaine, Enco fournit des installations de neutralisation pour denrées alimentaires. Pour les petites installations et les équipements destinés à des locaux exigus, les récipients de neutralisation prismatiques à parois moulurées se sont avérés extrêmement pratiques.

On citera enfin ses épaisseurs ronds, allant jusqu'à 25 m de diamètre, destinés aux installations d'épuration des eaux usées.

Recuperadores térmicos de lodo - Recipientes de aguas residuales

La firma Enco proyecta y construye recuperadores térmicos de lodo en forma de tubos dobles. Según composición y agresividad de los medios líquidos se producen de acero C o de acero fino o de una combinación de ambos materiales. Los tubos se colocan según las relaciones del lugar y se ensamblan en un bastidor de marco.

En el campo del tratamiento de aguas residuales se produce todo tipo de recipientes, como por ej. recipientes de depósito de disolventes, así como recipientes para procesos, calentables y refrigerables.

Enco se ocupa además del suministro de instalaciones de neutralización para el sector de productos alimenticios. Aquí se ha acreditado, especialmente, en instalaciones más pequeñas y de poca disponibilidad de lugar, una ejecución prismática del recipiente de neutralización de forma nervada. Se producen además espesadores redondos, de hasta 25 m de diámetro, para instalaciones purificadoras de aguas residuales.

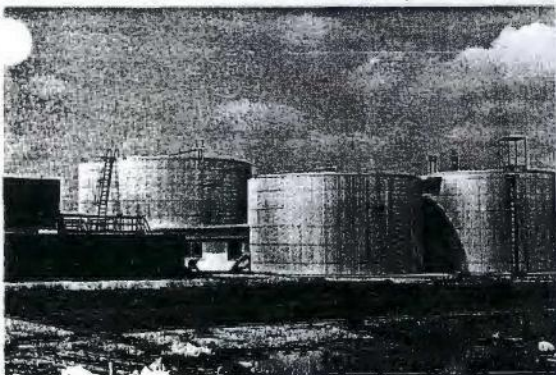


AUSTRIA

Biogas Plants

The services provided by the firm ENTEC embrace consultation, planning and equipping of plants for the anaerobic and aerobic treatment of organic sewage, sludges and solid waste. The emphasis is on biogas facilities and ancillary plants for biogas utilisation. The biogas plants on offer include the BIMA sludge fermenter, the UASB and fixed film waste water fermenter with appurtenant key equipment, e. g. ENTEC dry gas holders, biogas flares, biogas desulphurisation plants and co-generation plants. Applications of ENTEC processing techniques are the fruit, fish, vegetable, meat, alcohol, sugar and yeast industries, sewage sludge digestion, liquid manure cleansing and the treatment of other municipal and industrial organic waste and sewage.

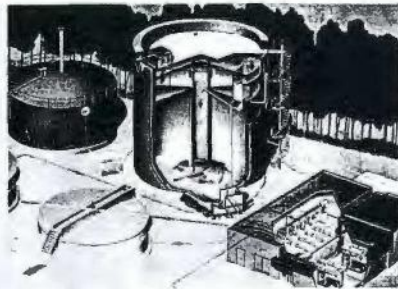
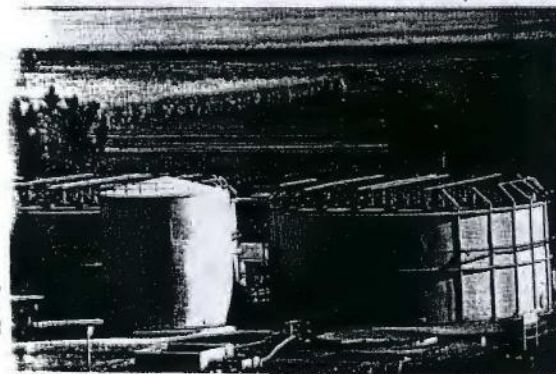
▼ Yeast factory in Zanae/Greece



▼ Liquid manure purification plant in Promest/Netherlands



▼ Ethco distillery in Malawi



▲ Coloured cross-section of BIMA sludge fermenter



▲ ARA waste water clarification plant in Feldkirch/Austria

Biogasanlagen

Das Leistungsangebot der Firma ENTEC umfaßt Beratung, Planung und Ausrüstung von Anlagen zur anaeroben und aeroben Behandlung von organisch verschmutzten Abwässern, organischen Schlämmen und organischen Abfällen. Schwerpunkt bilden dabei Biogasanlagen und die dazugehörigen Anlagen zur Biogasverwertung. Die angebotenen Biogasanlagensysteme umfassen u. a.

den BIMA-Schlammfermenter, UASB- und Festbettabwasserfermenter, sowie zugehörige key-equipments, wie z. B. den ENTEC-Trockengasspeicher, Biogassackeln, Biogaseschwefelungsanlagen und Blockheizkraftwerke. Anwendungsbereiche der ENTEC Verfahrenstechniken sind Gemüse, Obst-, Fisch-, Fleisch-, Alkohol-, Zucker- und Hefeindustrie, Klärschlammfäulung, Güllereinigung, sowie die Behandlung sonstiger kommunaler und industrieller organischer Abfälle und Abwässer.

ENTE C — Environment Technology
Umwelttechnik Ges.m.b.H.

A-6972 Fußach
Schilfweg 1

Telefon: +43/5578-3646
Telex: 59270
Telefax: +43/5578-3638
☎ Deutsch, English

Unités de production de biogaz

Les prestations d'ENTE C englobent l'activité conseil, l'étude et l'équipement d'installations pour le traitement anaérobie et aérobie d'eaux usées contenant des déchets organiques, de boues organiques et de déchets organiques, avec pour points forts les unités de production de biogaz et les installations connexes d'utilisation du biogaz. Parmi les systèmes proposés, on citera les digesteurs boues BIMA, les fermentateurs d'eaux usées à lit de boues anaérobies (UASB) et à lit solide ainsi que les équipements-clés correspondants tels que le réservoir de gaz secs ENTE C, les torches à biogaz, les installations de désulfuration du biogaz et les centrales de chauffage à unités génératrices autonomes. Les domaines d'application des techniques ENTE C sont notamment les industries de transformation des légumes, des fruits, du poisson, de la viande ainsi que les industries de production d'alcool, de sucre et de levure, la putréfaction des boues d'épuration, l'épuration du lisier ainsi que le traitement d'autres eaux résiduaires et déchets communaux et industriels.

Instalaciones de biogás

La oferta de prestaciones de la firma ENTE C comprende asesoramiento, planeamiento y equipamiento de instalaciones para el tratamiento anaeróbico de aguas residuales ensuciadas orgánicamente, lodos orgánicos y desechos orgánicos. Los puntos centrales de esto son las instalaciones de biogás y las instalaciones correspondientes para el aprovechamiento del biogás. Los ofertados sistema de instalaciones de biogás comprenden, entre otros el fermentador de lodo BIMA, el fermentador UASB y el de aguas residuales de lecho fijo, así como los correspondientes keyequipments, como por ej. el acumulador de gas seco, antorchas de biogás, instalaciones desulfuradoras de biogás y centrales calefactoras para bloques de viviendas. Los campos de empleo de las técnicas ENTE C de procesos son la industria de legumbres, de fruta, de pescado, de carne, alcohol, azúcar y levadura, putrición de lodo activado, limpieza de licuame, así como el tratamiento de los demás desechos y aguas residuales orgánicas comunales e industriales.

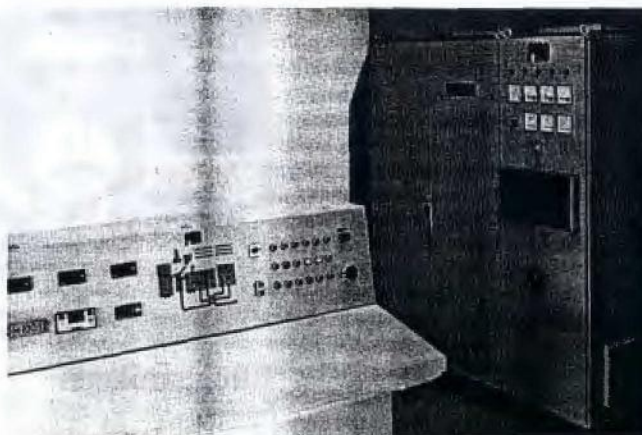


AUSTRIA

Waste Water Purification

Following a period of intensive research and development the firm FHC Abwassertechnik GesmbH are now marketing a new process for the precipitation of heavy metals and for ridding flushing and waste water from metalworking firms of their heavy metal and organic impurities. Based on chemico-physical processing methods, this patented technology can be used for pH value adjustment and neutralisation without the need for chemicals. Detoxication and precipitation of heavy metal is effected by means of the patented ferro-suspension technique. Big advantages include minimum sludge volume and recyclability of the precipitated residue. This innovative process, which operates without the need for chemicals, constitutes a revolutionary change in total sewage purification.

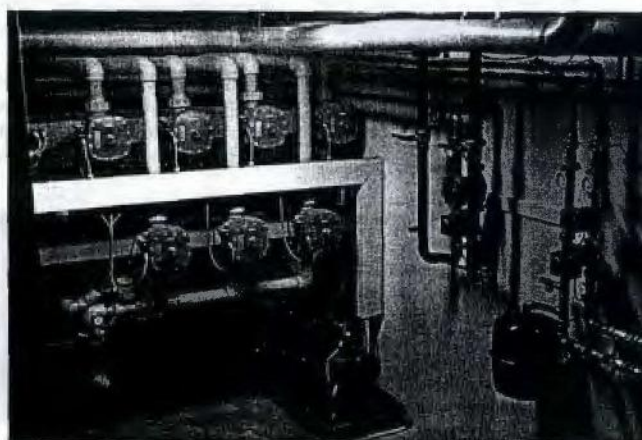
Switching and control system of FHC ferro-suspension generator



Abwasserreinigung

Nach intensiver Forschungs- und Entwicklungstätigkeit konnte von der Firma FHC Abwassertechnik GesmbH ein neues Verfahren zur Schwermetallfällung und Reinigung von schwermetall- und organisch belasteten Spül- und Abwässern aus metallverarbeitenden Betrieben erforscht und zur Marktreife gebracht werden. Diese auf Basis von chemisch-physikalischen Verfahrensmethoden patentierte Technologie ermöglicht die pH-Einstellung und Neutralisation ohne jegliche Chemikalien. Entgiftung und Ausfällung der Schwermetalle wird durch die patentierte Ferrosuspensions-Technik erreicht. Hinzu kommt ein geringer Schlammfall und die Wiederverwertbarkeit der ausgefällten Rückstände. Diese innovative Technologie, die ohne Zugabe von Chemikalien arbeitet, stellt eine revolutionäre Veränderung der kompletten Abwasserreinigung dar.

Valve control system of ferro-suspension plant



Grounds of R & D department



Depuración de aguas residuales

Después de una actividad intensa de investigación y desarrollo la firma Abwassertechnik GesmbH. ha podido perfeccionar y llevar a la madurez de mercado un nuevo procedimiento para la precipitación de metal pesado y la depuración de aguas para aclarar y de aguas residuales cargadas orgánicamente y con metal pesado que se tienen en fábricas de transformados metálicos. Esta tecnología patentada, a base de métodos químico-físicos de procedimiento, posibilita la estabilización del pH y la neutralización sin materias químicas algunas. La destoxificación y precipitación de los metales pesados se alcanza por la técnica patentada de ferrosuspensión. A esto se añade una catidad pequeña de lodo y la recuperabilidad de los residuos precipitados. Esta tecnología innovadora, que trabaja sin aditamento de materias químicas, representa un cambio revolucionario en la depuración completa de aguas residuales.

Épuration des eaux usées

Gâce à une activité R&D intense, la société FHC Abwassertechnik a pu étudier et développer au niveau opérationnel un nouveau procédé de précipitation des métaux lourds et d'épuration d'eaux résiduaires qui contiennent des déchets organiques et des métaux lourds provenant d'entreprises de transformation des métaux. Cette technologie brevetée, reposant sur des méthodes chimio-physiques, permet d'établir le pH voulu et de neutraliser l'eau sans utiliser de produits chimiques. La décontamination et la précipitation des métaux lourds sont obtenus par la technique brevetée de ferrosuspension. La formation de boues est peu importante et les résidus précipités sont récupérables. Cette technologie qui ne fait pas appel aux produits chimiques représente une nouvelle méthode révolutionnaire d'épuration des eaux.

FHC Abwassertechnik Gesellschaft m. b. H.

A-8960 Öblarn Nr. 218
Telefon: +43/3684/2811-0
Telex: 38304 fhc a
Telefax: +43/3684/2811-25
Deutsch, English, Русский



Water Analysis

Grabner Instruments specialise in water monitoring. The firm's instruments are built with a view to providing reliable data for environmental protection through continuous long-term measurement. Fields of application are the monitoring of drinking, ground, waste and open waters. Customers of the public and industrial sectors make use worldwide of the Water Monitoring Station, the Monitoring Trailer and the Buoyant Water Monitor, depending on requirements. For determining chemical parameters the company also offers a solution in the form of the Autoanalyser HLAN2000, which can measure several pollutants simultaneously. User-friendly operation and clear-cut data evaluation dispense with expensive specialists. Lasting stability is guaranteed by automatic cleaning and calibration.

Wasseranalytik

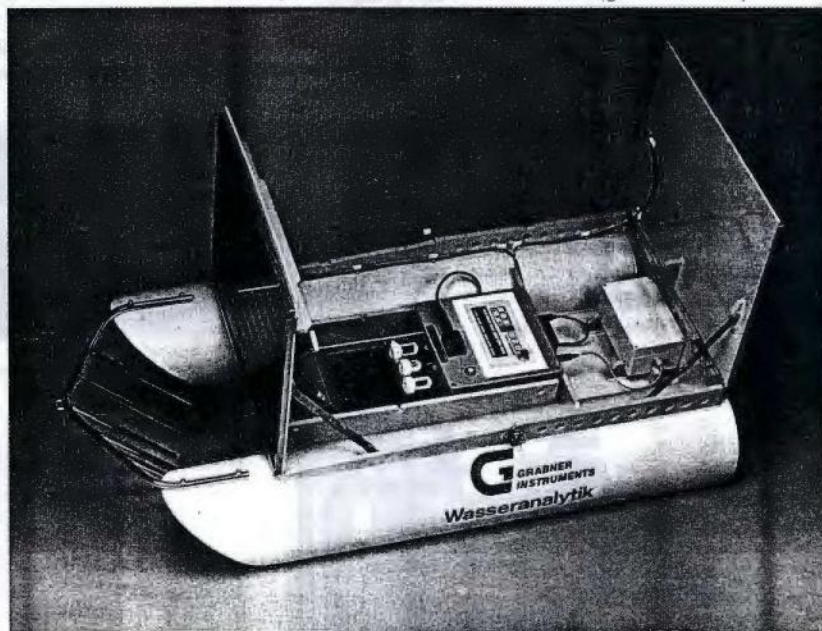
Grabner Instruments ist Spezialist für Wasseranalytik. Verlässliche Datenerfassung für den Umweltschutz durch kontinuierliche Langzeitmessung ist das Grundkonzept der Geräte. Einsatzgebiete sind die Überwachung von Trink-,

Grund-, Abwasser und freien Gewässern. Weltweit setzen Kunden am öffentlichen oder industriellen Sektor die Wassermeßstation, den Anhänger oder das Wassermeßfloß, je nach Anforderung ein. Auch zur Erfassung chemischer Parameter wird eine Lösung geboten: Der Autoanalyser HLAN2000 mißt mehrere Schadstoffe simultan. Bedienungsfreundlichkeit und übersichtliche Datenauswertung ersparen teures Fachpersonal. Langzeitstabilität wird durch automatische Reinigung und Kalibrierung gewährleistet.

GRABNER INSTRUMENTS
Messtechnik Ges.m.b.H.

A-1220 Wien
Dr.-Otto-Neurath-Gasse 1
Telefon: +43/1/221627
Telefax: +43/1/2207334
☐ Deutsch, English

▼ Buoyant Water Monitor HL 2300 detects illegal effluents in open waters



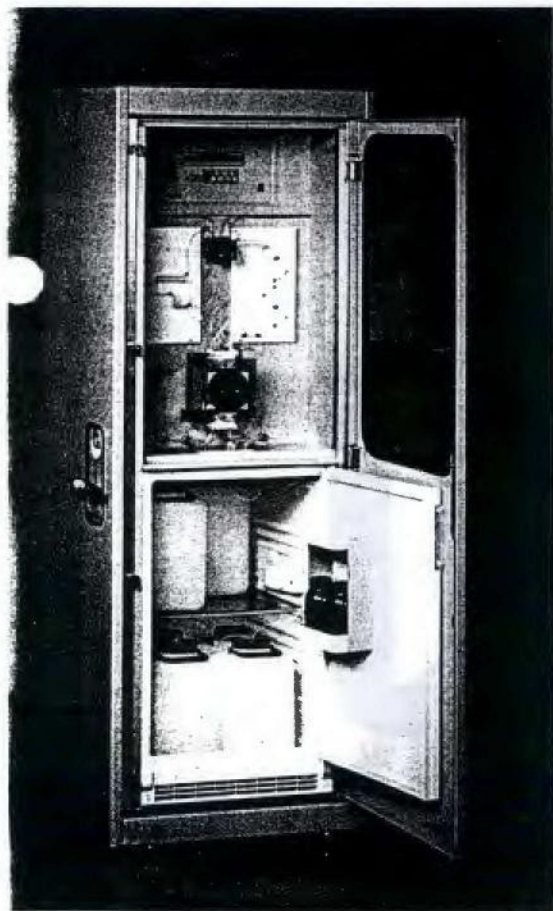
◀ Autoanalyser HLAN 2000 measures several contaminants in water simultaneously

Analyse de l'eau

Grabner Instruments est le spécialiste de l'analyse de l'eau. Ses instruments sont conçus essentiellement pour fournir des données sûres pour la protection de l'environnement, sur la base de mesures continues conduites sur de longues périodes. Leurs principaux domaines d'application sont la surveillance de l'eau potable, de la nappe phréatique, des eaux usées et des eaux libres. Ils sont utilisés dans le monde entier, dans le secteur public et l'industrie, sous forme de stations de mesure, de remorques ou de radeaux. Grabner propose également une solution pour l'évaluation de paramètres chimiques: l'auto-analyseur HLAN 2000 qui mesure simultanément plusieurs produits polluants. Sa facilité d'utilisation et d'exploitation des données permettent de s'épargner les spécialistes coûteux. Sa stabilité à long terme est garantie par le nettoyage et le calibrage automatiques.

Analítica del agua

Grabner instruments es el especialista para analítica del agua. El concepto básico de sus aparatos es una recopilación fiablesísima de datos para la protección del medioambiente obtenida con mediciones continuas de largo plazo. Los campos de empleo son el control de agua potable, de agua subterránea, de aguas residuales y aguas libres. En todo el mundo emplean los clientes en el sector público o industrial las estaciones contadoras de agua, el remolque o balsa contadora de agua, según la necesidad. Se ofrece también una solución para el establecimiento de parámetros químicos: el auto-analizador HLAN 2000 mide simultáneamente varias materias dañinas. Su facilidad de servicio y su total evaluación visible de datos permiten ahorrar un personal de especialistas caros. Su estabilidad a largo plazo se garantiza por una limpieza y calibración automática.



Membrane Filtration Plant



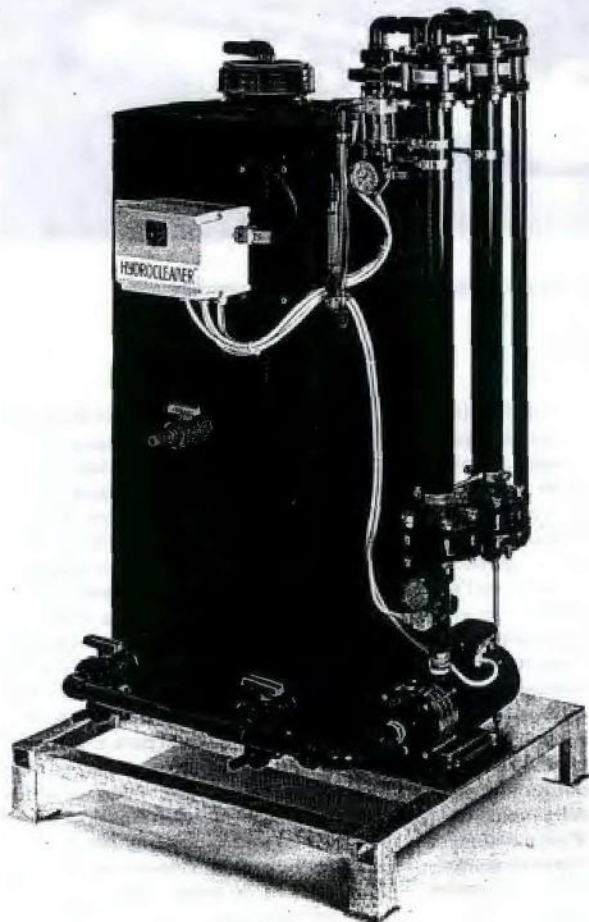
The Hydrocleaner is an all-automatic filtration unit with ceramic membranes intended for the chemical-free separation of oil/water emulsions (e. g. compressor condensates, cooling lubricants, drawing and rolling emulsions, degreasing and phosphating baths), landfill leakage water and waste water containing water lacquers and varnishes. The patented Hydrocleaner Model M1 is worldwide the smallest filtration unit used for handling oil/water emulsions.

Membranfiltrationsanlage

Der Hydrocleaner ist eine vollautomatische Filtrationsanlage mit Keramikmembranen, die zur chemikalienfreien Trennung von Öl/Wasser-Emulsionen (z. B. Kompressorkondensate, Kühlschmierstoffe, Zieh- und Walz emulsionen, Entfettungs- und Phosphatierungs-bäder), von Deponiesickerwässern und von Abwässern mit Wasserlacken eingesetzt wird.

Der patentierte Hydrocleaner Type M ist das weltweit kleinste Filtrationsgerät zur Aufbereitung von Öl/Wasser-Emulsionen.

Hydrocleaner M4 ▼



Instalación de filtración de membrana

El „hydrocleaner 14“ es una instalación filtrante, completamente automática, con membranas de cerámica, que se emplea para la separación libre de sustancias químicas de emulsiones aceite/agua (por ej. condensaciones en compresores, lubricantes refrigerantes, emulsiones de estirados y laminados, baños de desengrase y fosfatado), de aguas de filtración de depositos y de aguas residuales con charcos.

El „hydrocleaner“ patentado, tipo M, es mundialmente el más pequeño aparato filtrador para la preparación de emulsiones de aceite/agua.

Installation de filtration à membrane

L'Hydrocleaner est une installation de filtration à membrane céramique fonctionnant en automatisme intégral, permettant de séparer, sans avoir recours aux produits chimique, les émulsions huile et eau (p.ex. condensats de compresseurs, réfrigérants lubrifiants, émulsions d'étirage et de laminage, bains de phosphatation), d'eaux d'infiltration de décharges et d'eaux résiduelles contenant des laques à l'eau.

L'hydrocleaner breveté type M1 est le plus petit appareil de filtration du monde pour le traitement des émulsions huile/eau.

HYDROCLEANER
Produktions- und
Handelsges. m. b. H.
A-8051 Graz
Wienerstrasse 287

Telefon: +43/316/671 365-0
Telefax: +43/316/671 034
Deutsch, English

▼ Hydrocleaner M1, the world's smallest filtering unit



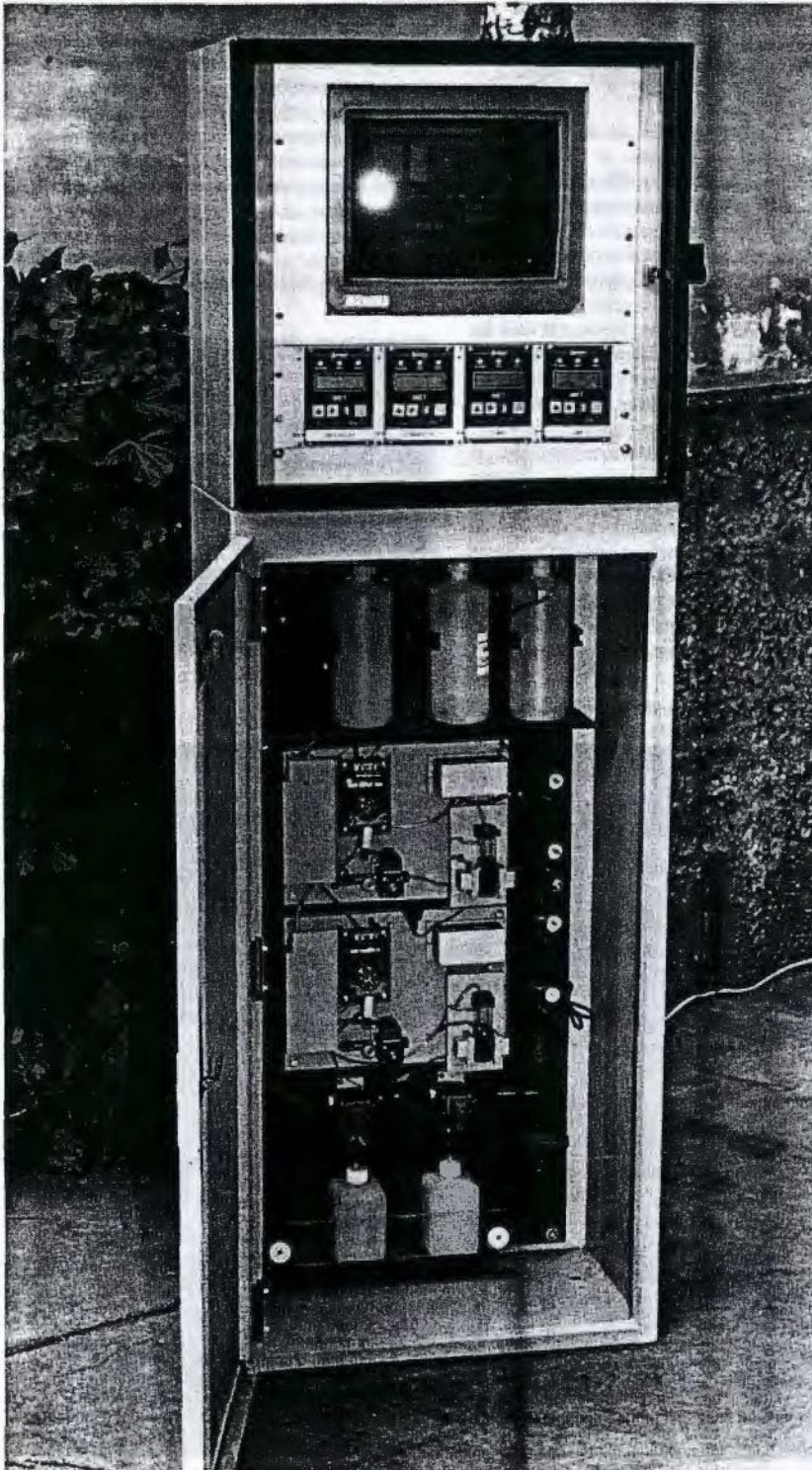


Water Analysis Systems

SEIBOLD Meßgeräte
Günther KAPPL
A-1020 Wien
Untere Augartenstraße 19

Telefon: +43/1/332 00 60
Telex: 114 528 seib a
Telefax: +43/1/330 69 71
Deutsch, English

▼ Analysis cabinet



The firm Günther Kappl Meß- und Regeltechnik produces and exports worldwide analysis systems for sewage works, industrial firms and water treatment plants under the trade name Seibold Measuring Instruments. The company is successful internationally, not only in the pH and conductivity measurement sectors, but also in heavy metal and hazardous matter analysis in liquid media.

Wasseranalyensysteme

Die Firma Günther Kappl Meß- und Regeltechnik produziert und exportiert weltweit Analysensysteme für Kläranlagen, Industriebetriebe und Wasseraufbereitungsanlagen unter dem Markennamen Seibold-Meßgeräte. Nicht nur auf dem Sektor der pH- und Leitfähigkeitsmessung, sondern auch bei Schwermetall- und Problemstoffanalysen in flüssigen Medien ist das Unternehmen international erfolgreich.

Sistemas de análisis del agua

La firma Günther Kappl Mess- und Regeltechnik produce y exporta a todo el mundo sistemas de análisis para plantas depuradoras, empresas industriales e instalaciones de tratamiento del agua bajo el nombre de marca "Seibold-Messgeräte" (aparatos de medición). La empresa registra éxitos internacionales no sólo en el sector de la medición de conductibilidad y pH, sino también en el de análisis de metales pesados y materias problemáticas en medios líquidos.

Systèmes d'analyse de l'eau

La société Günther Kappl Mess- und Regeltechnik produit et exporte dans le monde entier, sous la marque Seibold-Messgeräte, des systèmes d'analyse pour installations d'épuration des eaux d'égout, de traitement des eaux industrielles et de préparation de l'eau potable. Cette entreprise jouit d'une excellente réputation internationale dans le secteur des instruments de mesure du coefficient pH et de la conductivité de même qu'au niveau des systèmes d'analyse des liquides contenant des métaux lourds et des déchets problématiques.

Double-wall Containers



Maximum safety for hazardous liquids is guaranteed by the KVS Double-wall Container with leakage warning system. Created as part of the European EUREKA Development Programme, this new product from KVS-Industrie- und Umwelttechnik constitutes a decisive safety improvement for the transport, storage and processing of water-polluting liquids – e. g. sewage, formaldehyde, glycol, caustic soda solution, sulphuric acid, hydrochloric acid, fuels, heating oil, etc. The novel glass fabric of the double-wall container forms a continuous cavity between container inner and outer walls which is continually monitored by a leakage warning system and catches any escaping liquid. No additional measures are needed for container installation.

Doppelwandbehälter

Maximale Sicherheit für umweltgefährdende Flüssigkeiten bietet der KVS-Doppelwandbehälter mit Leck-Warnsystem. Diese Neuentwicklung der KVS-Industrie- und Umwelttechnik ist im Rahmen des europäischen EUREKA-Entwicklungsprogrammes entstanden und stellt einen entscheidenden Sicherheitsfortschritt bei Transport, Lagern und Verarbeiten wassergefährdender Flüssigkeiten – etwa Abwässer, Formaldehyd, Glykol, Natronlauge, Schwefelsäure, Salzsäure

oder Treibstoffen und Heizöl – dar. Das neuartige Glasgewebe des Doppelmantelraumes bildet einen durchgehenden Hohlraum zwischen Behälterinnen- und Behälteraußenwand, der durch ein Leck-Warnsystem laufend überwacht wird und eventuell austretende Flüssigkeit auffängt. Für die Installierung sind keine zusätzlichen Vorkehrungen notwendig.

Réservoirs à double paroi

Le réservoir KVS à double paroi avec système d'alarme se déclenchant en cas de fuite offre un maximum de sécurité pour la manutention de liquides qui présentent un risque pour l'environnement. Ce nouveau produit du service Technologies industrielles et Ecotechnologies de KVS, développé dans le cadre du programme EUREKA, représente un progrès réel au niveau de la sécurité, pour le transport, le stockage et le traitement de liquides polluants tels que: eaux usées, formaldéhyde, glycol, soude caustique, acide sulfurique, acide chlorhydrique, carburants et fioul. Le tissu de verre d'un type niveau placé entre les deux parois, elles-mêmes renforcées aux fibres de verre, maintient ces deux enveloppes écartées en formant un espace creux ininterrompu, surveillé en permanence par un système d'alarme qui se déclenche en cas de fuite. L'installation de ce réservoir ne demande aucune mesure préalable.

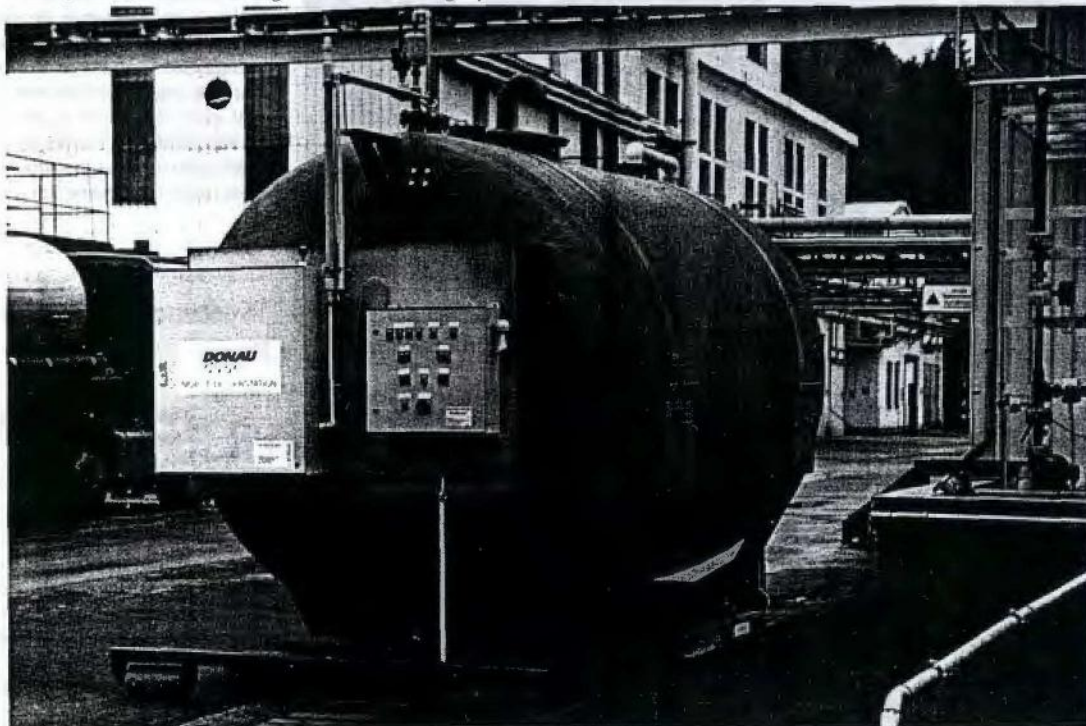
Recipiente de pared doble

Este desarrollo de la KVS-Industria und Umwelttechnik se ha hecho dentro del marco del programa europeo EUREKA de desarrollo y representa un progreso decisivo en cuanto a seguridad de transporte, seguridad de depósito y del tratamiento de líquidos que ponen en peligro el agua, como son las aguas residuales, los formaldehidos, glicoles, lejías de natrón, ácido sulfúrico, ácido clorhídrico o combustibles y aceite de calefacción. El innovado tejido de fibra de vidrio del doble recubrimiento forma un continuo espacio hueco entre la pared interior y exterior del recipiente que ininterrumpidamente se controla por un sistema de aviso de fugas y que recolecta el líquido que eventualmente se escapa. Para su instalación no se necesita ninguna precaución adicional.

**KVS-Kunststoff Verbund Systeme
Gesellschaft m. b. H.**

A-3470 Kirchberg am Wagram
Industriestrasse 5
Telefon: +43/2279/2201-0
Telefax: +43/2279/2201-303
☒ Deutsch, English

▼ Double-wall container, of mobile design, complete with dosing pump and control cabinet for holding water-contaminating liquids





Water and Air Purification

Lenzing Technik-Umwelttechnik are a team of engineers engaged in development and design, planning and applications to authorities, as well as in plant installation, startup and subsequent servicing. Lenzing Technik-Umwelttechnik optimise process techniques, efficiency and performance both for existing and planned waste water and air purification plants. The company offers individual solutions to problems connected with waste treatment, utilisation and recycling in various sectors of production.

Wasser- und Luftreinhaltung

Lenzing Technik-Umwelttechnik ist ein Team von Ingenieuren, das sich mit der Entwicklung und Konzeption, Planung und Behördenansuchen sowie mit der Errichtung, der Inbetriebnahme und dem anschließenden Service beschäftigt. Lenzing Technik-Umwelttechnik optimiert Verfahrenstechnik, Wirkungsgrade und Leistungen sowohl für bestehende als auch für geplante Abwasser- und Abluftbehandlungsanlagen. Das Unternehmen bietet individuelle Problemlösungen für die Abfallbehandlung, -verwertung und Wertstoffrückgewinnung in verschiedenen Produktionsbereichen.

Dépollution de l'air et de l'eau

Le département Technique-Eco-technologies de Lenzing a à sa disposition une cellule d'ingénieurs s'occupant du développement, de la conception, de l'étude des projets, des demandes d'autorisation ainsi que de l'implanta-

tion, de la mise en route et du suivi des installations, ses domaines d'intervention étant l'optimisation de la technologie des procédés industriels, de l'efficacité et des performances d'installations de traitement de l'air d'évacuation et des eaux usées. Lenzing étudie des solutions individuelles pour les problèmes spécifiques de traitement et recyclage des déchets des différents secteurs de l'industrie.

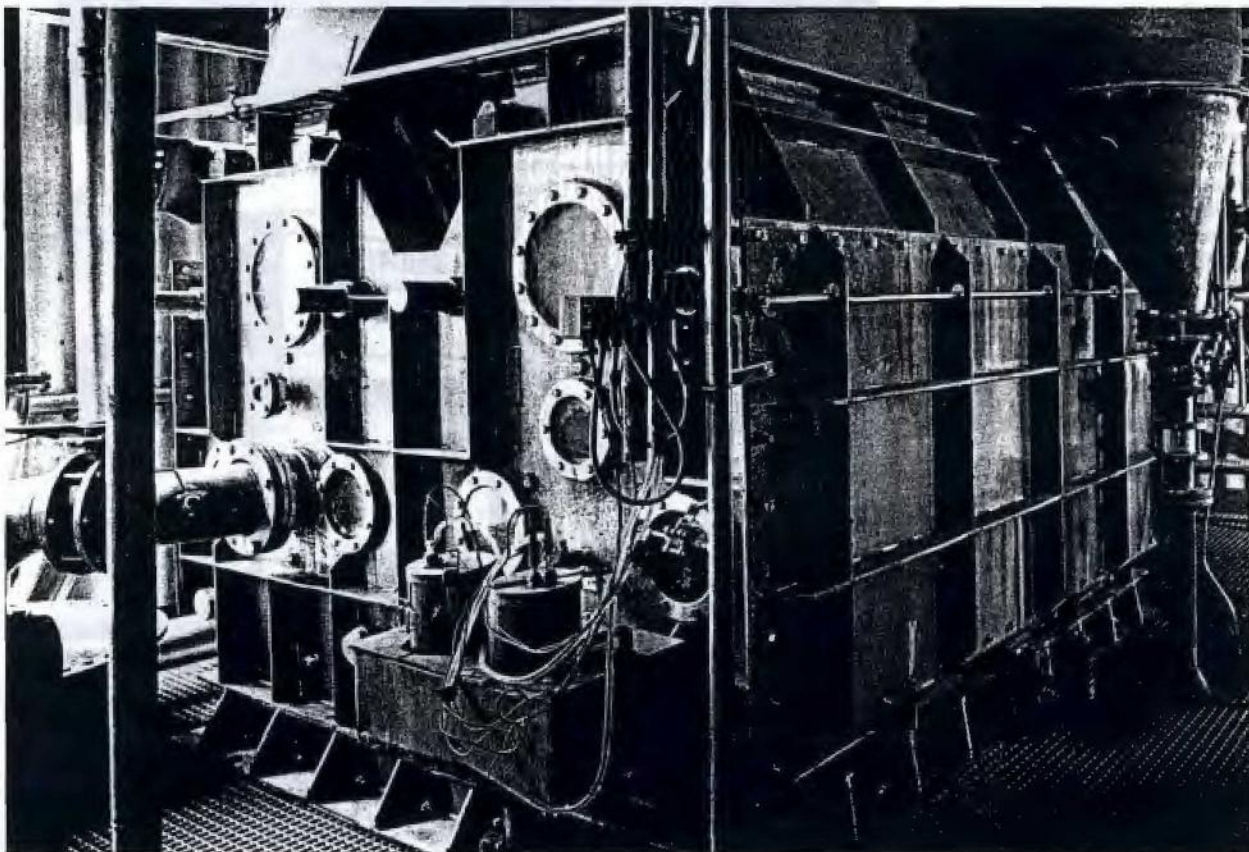
Limpieza del aire y del agua

Lenzing Technik-Umwelttechnik es un grupo de ingenieros que se ocupa del desarrollo, concepción y planeamiento de instalaciones del ramo y hasta de las solicitudes del caso a autoridades, así como de su erección, puesta en marcha y posterior service. Lenzing Technik-Umwelttechnik optimiza la técnica de procesos, rendimientos y potencias tanto de instalaciones ya existentes como también de las nuevas que se planean, ordenadas al tratamiento de aguas residuales y aire de escape. La empresa ofrece soluciones individuales a los problemas de tratamiento y aprovechamiento de desechos y recuperación de materias primas en distintos campos de producción.

**LENZING
AKTIENGESELLSCHAFT
Geschäftsbereich Technik**

A-4860 Lenzing
Telefon: +43/7672/701-0
Telex: 26-606 lenfa a
Telefax: +43/7672/748 19
☎ Deutsch, English

Recovery of chemicals and flue gas purification in cellulose industry.





Electrostatic Water Treatment

Maitron produce electrostatic water treatment devices for eliminating lime and corrosion. As it flows through the electrostatic field the lime

loses its propensity to adhere to pipe walls. Even existing layers of lime and corrosion are removed. The creation of a protective layer prevents further pipe corrosion and

bursting. More than 60,000 of these patented energy-saving devices are in use in private households, hotels, industry and businesses.

Elektrostatische Wasserbehandlung

Maitron erzeugt elektrostatische Wasserbehandlungsgeräte gegen Kalkstein und Korrosion. Der Kalk verliert beim Durchfließen des elektrostatischen Feldes seine Neigung, sich hartnäckig abzulagern. Selbst bereits bestehende Kalk- und Korrosionsschichten werden abgetragen. Der Aufbau einer Schutzschicht verhindert weiteren Korrosionsangriff und Rohrbruch. Bereits mehr als 60.000 dieser patentierten energiesparenden Geräte sind weltweit in privaten Haushalten, Hotels, Industrie- und Gewerbebetrieben im Einsatz.

Traitement électrostatique de l'eau

Maitron fabrique des appareils de traitement électrostatique de l'eau pour lutter contre le calcaire et la corrosion. En traversant le champ électrostatique, le calcaire perd sa tendance à former des dépôts difficiles à éliminer. Les couches de calcaire et de corrosion existantes tendent à se désagréger. La formation d'une couche de protection empêche la progression de la corrosion et évite les ruptures de tuyaux. Ces appareils qui contribuent à réduire la consommation d'énergie sont utilisés à plus de 60.000 exemplaires dans le monde entier, que ce soit par les ménages et les hôtels ou par l'industrie.

Tratamiento electrostático del agua

Maitron produce aparatos electrostáticos de tratamiento del agua contra piedra caliza y corrosión. Al pasar el campo electrostático pierde la cal su tendencia a sedimentarse persistentemente. Incluso se quitan las ya existentes capas de cal y de corrosión. La formación de una capa protectora evita posteriores ataques de corrosión y roturas de tuberías. Más de 60.000 de estos aparatos patentados, ahorrativos de energía, se utilizan ahora en todo el mundo, en casas particulares, hoteles, así como en empresas industriales y comerciales.

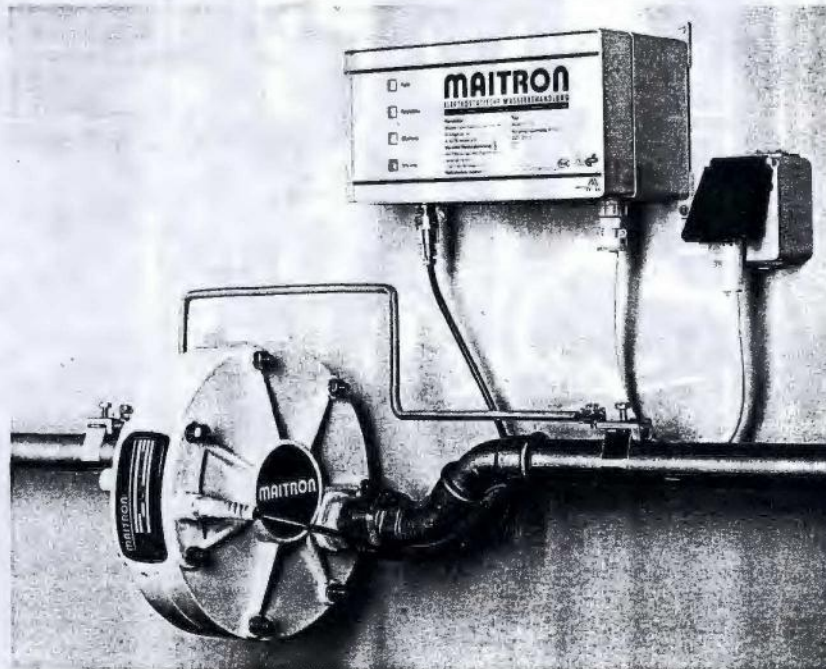
▼ Maitron office building in Innsbruck



MAITRON
Gerätebau Ges. m. b. H.
A-6020 Innsbruck Etrichgase 34
A-6040 Innsbruck, P. O. B. 139

Telefon: +43/512/489 60
Telefax: +43/512/493 130
Deutsch, English, Français,
Español, Italiano

▼ Maitron electrostatic water treatment device for elimination of lime and corrosion





Sludge Dewatering and Drying

Andritz have for decades now supplied machinery and plant for the mechanical dewatering of municipal and industrial sewage sludges and for the dewatering and filtration of slurries and other products of the mining industry. These thickeners, belt presses, screw presses, pressure filters, high-pressure presses for secondary dewatering and complete drying lines are used worldwide for different applications.

Steam pressure filtration is a new technology that has created the edge for Andritz in pollution control, for instance treatment of contaminated soil.

Schlammwässerung und -trocknung

Andritz liefert seit Jahrzehnten Maschinen und Anlagen zur mechanischen Entwässerung kommunaler und industrieller Abwässerschlämme sowie zur Entwässerung und Fil-

tration von Schlämmen und Produkten des Bergbaues und der Minenindustrie. Diese weltweit für verschiedene Zwecke eingesetzten Maschinen sind Eindickmaschinen, Siebdruckpressen, Schneckenpressen, Druckfilter, Hochdruckpressen zur Nachentwässerung sowie komplette Trocknungsanlagen. Mit der neuen Technologie der Dampfdruckfiltration besitzt Andritz weltweit eine führende Position bei der Beseitigung von Altlasten, wie z. B. von kontaminierten Böden, die von Andritz aufbereitet werden.

Déshydratation et séchage des boues

La société Andritz fournit depuis des dizaines d'années des machines et équipements pour la déshydratation des boues des eaux d'égout industrielles et communales ainsi que pour la déshydratation et filtration des boues et produits de l'industrie minière.

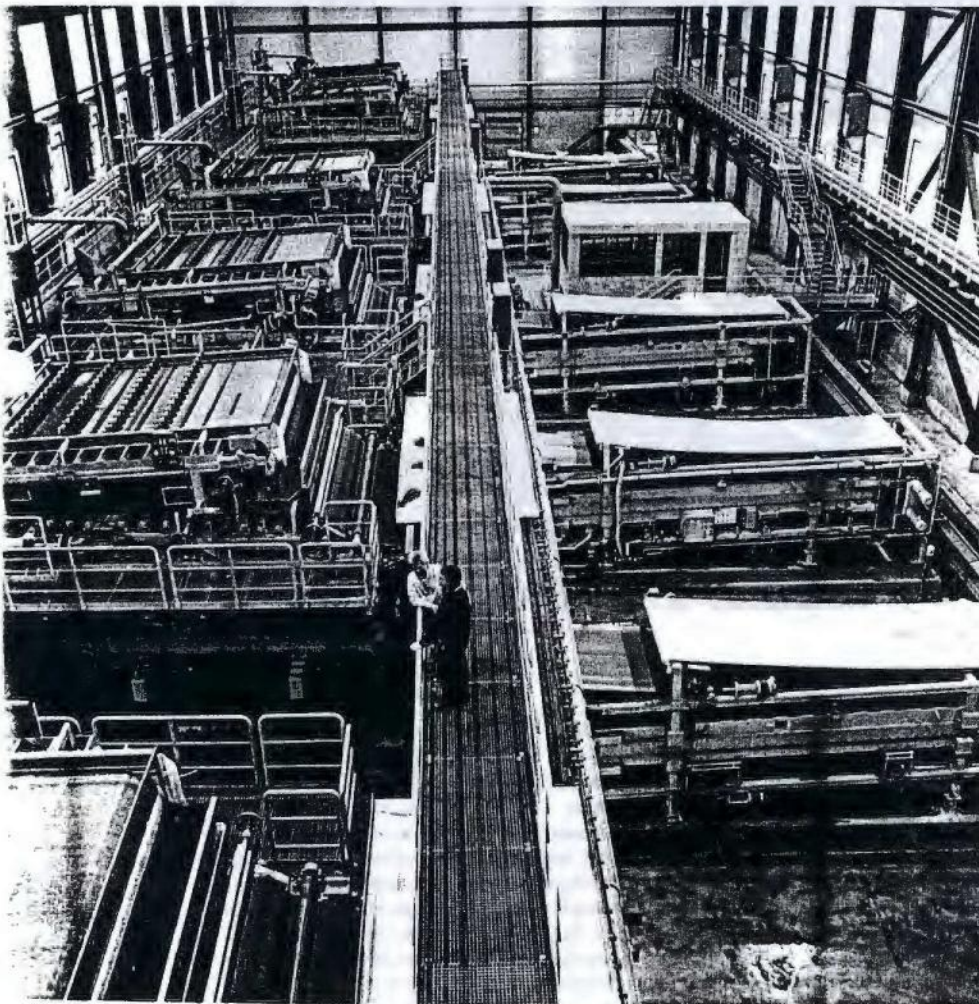
Ce matériel comprend les équipements suivants: épaisseurs, presses filtrantes, presses à vis, filtres à pression, presses à haute pression pour la post-déshydratation ainsi que des installations de séchage complètes, utilisées dans les secteurs les plus divers dans le monde entier. La nouvelle technologie de filtration à pression à vapeur confère à Andritz une position dominante dans le secteur du traitement des aires polluées et notamment des terrains contaminés.

Drenaje y secado de fangos

Andritz suministra desde hace decenios máquinas e instalaciones para el drenaje mecánico de lodos de aguas residuales, comunales e industriales, así como para el drenaje y la filtración de fangos y productos de las explotaciones e industrias mineras. Estas máquinas, empleadas en todo el mundo para distintas finalidades, son máquinas espesadoras, prensas de cinta cribadora, prensas de extrusión por tornillo sin fin, filtros de presión, prensas de alta presión para la extracción posterior de agua, así como instalaciones completas de secado. Con la nueva tecnología de filtración a presión de vapor ocupa Andritz una posición líder en todo el mundo en la eliminación de cargas de desecho o ruina, como por ej. de tierras contaminadas.

Maschinenfabrik
ANDRITZ AG
A-8045 Graz
Stalleggerstrasse 18

Telefon: +43/316/6902-2705
Telex: 311 313
Telefax: +43/316/6902-418
Deutsch, English, Français



◀ Harbour mud dewatering plant, Hamburg, with six belt presses and six HP presses. Cap: 60 tonnes dry matter per hour

Biological Sewage Clarification



Both in the sewage treatment field and in such special sectors as biological phosphorus elimination and remote-site sewage clarification Posch & Partners are active worldwide. The Phostrip Process for the biological elimination of phosphorus was installed in Central Europe for the first time ever in the plant in Darmstadt-Eberstadt (pop. equiv. 50,000) and is the only biological process ensuring continuous effluent values well below legal regulations.

Sewage clarification in remote spots, e. g. for mountain huts, calls for special processing techniques and concepts geared to individual needs, as exemplified by the Kaunergrat Hut in Tirol, altitude 2,800 m.



The Eberstadt sewage works with Phostrip pool ▲

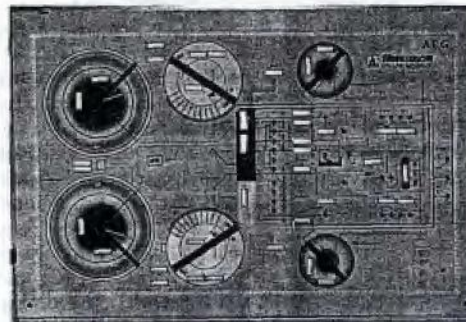
Biologische Abwasserreinigung

Posch & Partner ist international im Bereich allgemeine Abwasserreinigung sowie in den Spezialbereichen biologische Phosphorelimination und Abwasserreinigung in Extremlagen tätig. Das Phostrip-Verfahren zur biologischen Phosphorelimination wurde erstmals in Mitteleuropa auf der 50.000 EGW-Anlage Darmstadt-Eberstadt eingebaut und liefert als einziges biologisches Verfahren kontinuierlich Ablaufwerte weit unter den gesetzlichen Vorgaben.

Die Abwasserreinigung in Extremlagen, z. B. von alpinen Schutzhütten, erfordert besondere Verfahrenstechniken und jeweils ein individuell abgestimmtes Konzept, wie am Beispiel der 2800 m hoch gelegenen Kaunergrathütte/Tirol gezeigt.

Epuración biológica des eaux

Posch & Partner intervient au niveau international dans le secteur de l'épuration des eaux usées ainsi que dans les domaines spéciaux de l'élimination biologique du phosphore et de l'épuration des eaux résiduaires dans des conditions extrêmes. Mis en œuvre pour la première fois en Europe centrale dans l'installation de Darmstadt-Eberstadt équivalent à 50.000 habitants, son procédé Phostrip, pour l'élimination biologique des composés du phosphore, est le seul procédé biologique fournissant en permanence une eau dont la teneur en phosphates est inférieure aux normes fixées par la loi. L'épuration des eaux sur des sites aux conditions extrêmes, tels que celles des refuges de haute montagne, exige l'utilisation de procédés spéciaux et demande d'être étudiée pour chaque cas précis - comme p.ex. le système du refuge du Kaunergrat, à 2.800 m d'altitude, au Tyrol.



Wiring diagram of Eberstadt sewage works ▲

**POSCH & PARTNERS
CONSULTING ENGINEERS**

A-6026 Innsbruck
Sebastian-Kneipp-Weg 17
Telefon: +43/512/282 848
Telex: 534 373
Telefax: +43/512/282 858
☑ Deutsch, English, Français



▲ Construction of dry toilets in Kaunergrat Hut

Depuración biológica de aguas residuales

La empresa Posch und Partner trabaja internacionalmente en el campo de depuración general de aguas residuales, así como en los sectores especiales de eliminación biológica de fósforo y depuración de aguas residuales en condiciones extremas. El procedimiento „phostrip“ para la eliminación biológica de fósforo se instaló por primera vez en

Europa Central en la instalación para 50.000 IVH (igual valor habitantes) de Darmstadt-Eberstadt y suministra como único proceso biológico continuamente valores de salida muy por debajo de las normas legales. La depuración de aguas residuales en condiciones extremas, por ej.: en refugios alpestres, exige técnicas especiales de procedimiento y cada vez una concepción de adaptación individual, como se muestra por ej. en el refugio „Kaunergrat“ de Tirol, a una altura de 2800 m.

Cylindrical Formwork

RSB Rund-Stahl-Bau Ges.m.b.H. are specialists in all kinds of cylindrical formwork. The company supplies customised formwork for round or oviform digesters, circular tanks, high-level tanks, tapered or funnel-shaped buildings, water towers, telecommunication towers and axially symmetrical special-purpose buildings of every kind. With the patented formwork systems from RSB, which differ from conventional shuttering above all through their spreader-free design, low depth of fill and large pouring sections, all buildings can be erected faster, thanks to shorter shuttering preparation and construction times.

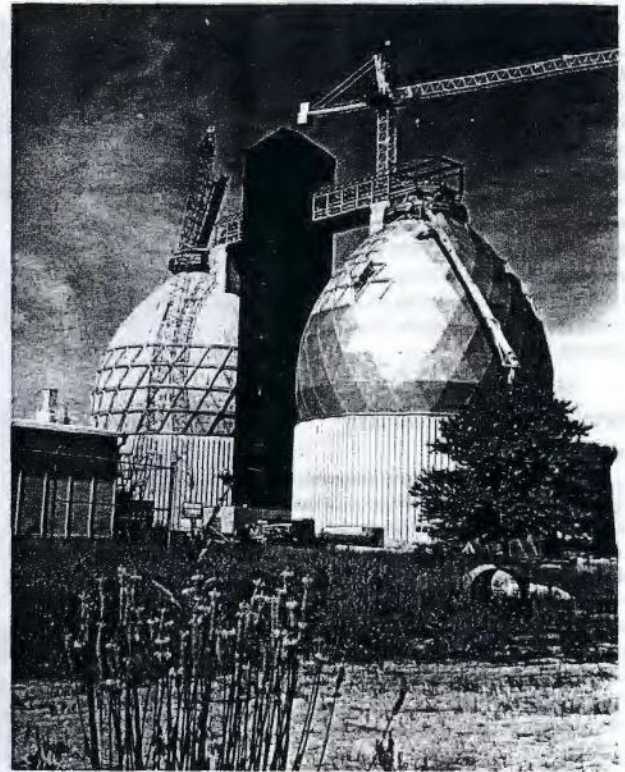
Rundschalungen

RSB Schalungstechnik ist der Spezialist für Rundschalungen aller Art. RSB bietet maßgeschneiderte Problemlösungen für Faultürme, zylindrisch oder eiförmig, Rundbecken, Hochbehälter, kegel- oder trichterförmige Bauten, Wassertürme, Fernmeldetürme sowie rotations-symmetrische Sonderbauten aller Art. Mit den patentierten Schalungssystemen der Firma RSB, die sich von der herkömmlichen Art zu schalen vor allem durch durchdringungsfreien Beton, niedrige Schütthöhen sowie große Betonierabschnitte aus einem Guß unterscheiden, ist es möglich, jede Art von Bauten in erheblich verkürzten Bau- und Schalzeiten herzustellen.

Coffrages arrondis

RSB Schalungstechnik, le spécialiste des coffrages arrondis de tous types, propose des solutions sur mesure pour digesteurs cylindriques ou ovoïdes,

Oviform digesters of Baltimore/USA sewage works. Two units of 11,350 m³ capacity each ▶

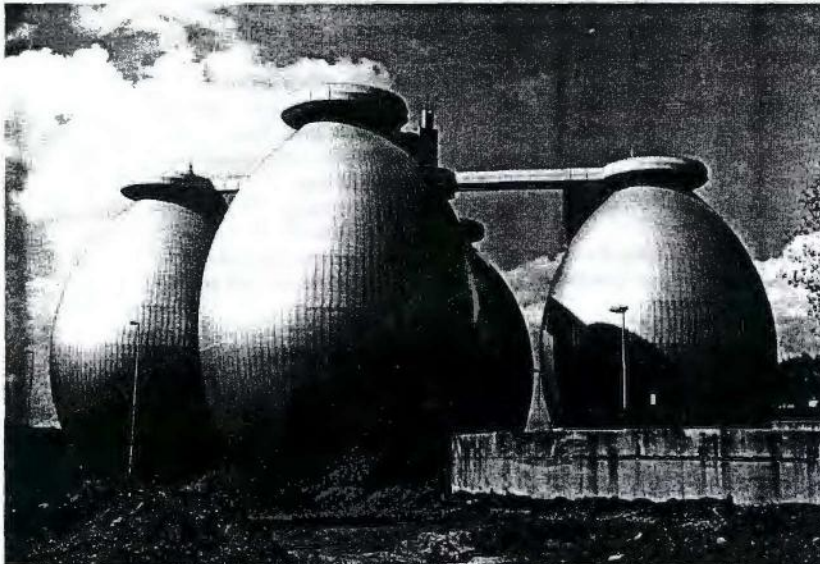


bassins ronds, réservoirs surélevés, constructions coniques ou en entonnoir, châteaux d'eau, tours de télécommunication et bâtiments à symétrie de révolution de tous types. Les systèmes brevetés de RSB qui se distinguent des méthodes de coffrage habituelles par l'absence de tendards, une faible hauteur de coulée et la possibilité de réaliser d'importantes sections à chaque coulée, permettent de réduire sensiblement les délais de coffrage et de construction.

RSB Schalungstechnik

A-6972 Fußach
Schilfweg 1, RSB-Haus
Telefon: +43/5578/360 00
Telefax: +43/5578/3639
☑ Deutsch, English, Français,
Español, Italiano

Oviform digesters of Bottrop/Germany sewage works. Four units of 15,000 m³ capacity each ▼



Encofrados redondos

La empresa RSB Rund-Stahl-Bau Ges. m. b. H se ha especializado en encofrados redondos de todo tipo. La RSB ofrece soluciones de problemas hechas a medida para torres de putrefacción, cilíndricas u ovales, depósitos redondos, recipientes altos, construcciones cónicas o en forma de tolva, torres de agua, torres de telecomunicación, así como construcciones especiales de rotación simétrica de todo tipo. Con los sistemas patentados de encofrado de la firma RSB – que se distinguen de los tipos usuales de encofrado, sobre todo por el hormigón libre de penetración, alturas bajas de relleno, así como por sectores grandes de hormigonado de una sola colada – es posible producir todo tipo de construcciones en tiempos de construcción y encofrado sumamente cortos.

Environmental Consulting



SFC are an independent consulting engineering practice engaged in pollution control of clean water, sewage and waste.

The following specialities are offered:

- SBR and two-stage activated sludge processes for nutrient removal,
- High-rate flocculation,
- Pipe network analysis,
- Injection technology for sewage,
- Strategic waste management schemes.

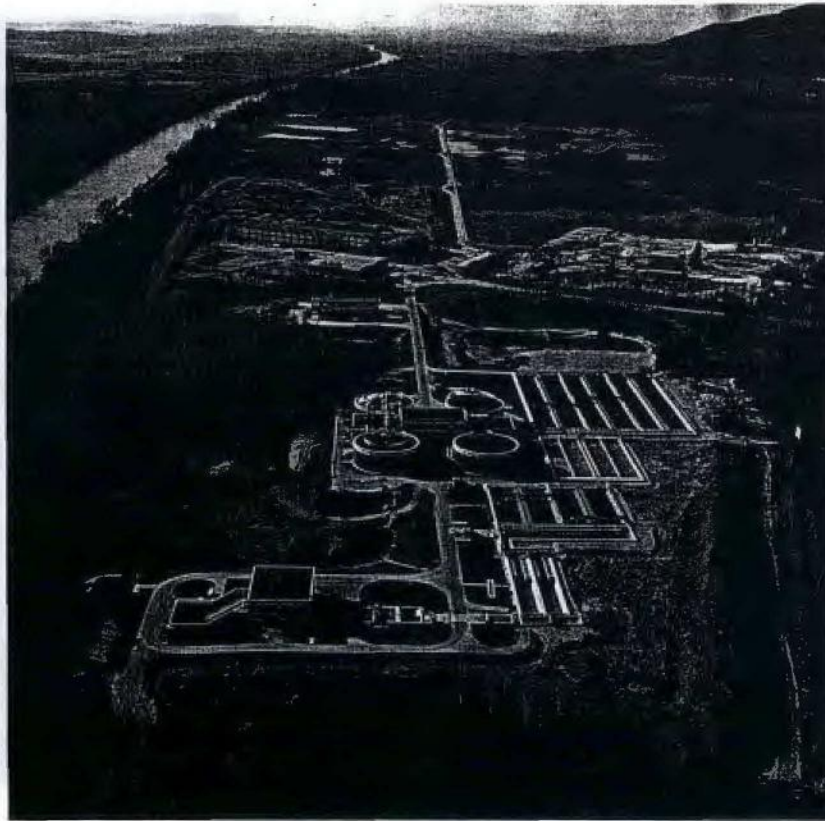
SFC provide complete project management, from feasibility studies to supervision of construction during the implementation phase.

Umweltschutzberatung

SFC ist ein unabhängiges beratendes Technologieunternehmen auf dem Gebiet des Umweltschutzes, und zwar speziell hinsichtlich Reinwasser, Abwasser und Müll. Folgende Spezialitäten werden angeboten:

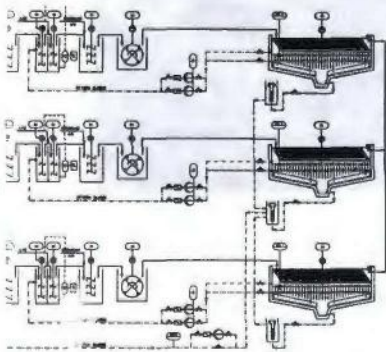
- Zyklisch betriebene Belebtschlammverfahren zur Nährstoffentfernung;
- Hochleistungsflockulation;
- Rohrnetzanalyse;
- Injektionstechnologie für Abwasser;
- strategische Müllkonzepte.

SFC übernimmt den gesamten Projektzyklus von der Durchführbarkeitsstudie bis zur Bauleitung in der Realisierungsphase.

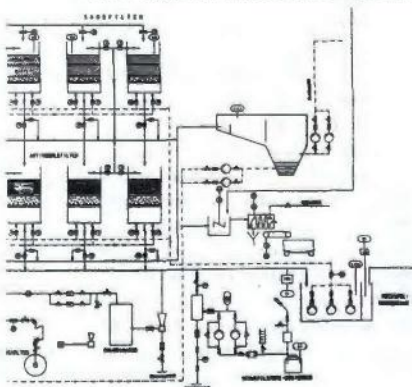


▲ High-capacity sewage works

▼ Flow chart of high-rate flocculation



▼ Flow chart of activated carbon filtration



Conseil en matière d'environnement

SFC est un cabinet d'ingénieurs-conseils indépendant, intervenant dans le secteur de la protection de l'environnement et plus particulièrement au niveau de l'eau potable, des eaux usées et des déchets, en proposant les spécialités suivantes:

- procédé à boues activées à deux étages et procédé SBR pour l'élimination des matières nutritives,
- flocculation à rendement élevé,
- analyse des réseaux d'adduction,
- technologie d'injection pour les eaux usées,
- concepts stratégiques pour la gestion des déchets.

SFC intervient à tous les stades d'un projet, de l'étude de faisabilité jusqu'à la direction des travaux de réalisation.

Consulting de medioambiente

SFC es una independiente empresa de tecnología que asesora en el sector de la protección del medioambiente. Especialmente en lo que se refiere a agua limpia, agua residual y basura. Ofrece las siguientes especialidades:

- procedimientos de depuración por lodo activo por ciclo para la eliminación de sustancias nutritivas,
- flocculación de alto rendimiento,
- análisis de la red de tuberías; tecnología de inyección para aguas residuales,
- concepciones estratégicas para el problema de la basura.

La SFC se hace cargo de todo lo que se relaciona con el proyecto, esto es desde el estudio de su ejecutibilidad hasta la dirección de obras en la fase de su ejecución.

**SFC SCHÜFFL & FORSTHUBER
CONSULTING**
S. u. F. Consult Planungsges. m. b. H.

A-5020 Salzburg
Julius-Welser-Strasse 15

Telefon: +43/662/43 49 01
Telefax: +43/662/43 49 01-8
Deutsch, English, Français

Waste Water Treatment Plants

Solvin research work has resulted in a revolutionary alternative for energy-saving and ecofriendly waste water treatment: physical waste water treatment requiring only 30% of the energy needed by conventional methods. The novelty: separation of oil and/or heavy metal-contaminated waste water in one pass, and energy-saving and low-cost processing ensuring maximum eco-friendliness by dispensing with the use of chemicals. The waste water cleaned by the Solvin AWA 200 waste water treatment can be reused, which means further saving of energy and money.

SOLVIN
Wassertechnik Ges. m. b. H.

A-3452 Atzenbrugg
Mitterndorf 5
Telefon: +43/2275/6101, 6102
Telefax: +43/2275/350
☐ Deutsch, English

*Solvin AWA 2000 waste water treatment plant.
A made-to-measure solution for every individual need*

Abwasseraufbereitungsanlagen

Zur energiesparenden und umweltschonenden Abwasseraufbereitung bietet die Solvin-Forschung eine revolutionäre Alternative: physikalische Abwasseraufbereitung, die nur etwa 30% Energie gegenüber herkömmlicher Aufbereitung benötigt. Die Novität: Trennung von Öl- und/oder schwermetallbelasteten Abwässern in einem Arbeitsgang, energiesparend und durch den Verzicht auf Chemikalien umweltfreundlich und kostengünstig. Das in der Abwasseraufbereitungsanlage Solvin AWA 2000 gereinigte Abwasser kann auch als Recyclingwasser Verwendung finden, was weitere Energie- und Kosteneinsparungen bedeutet.

Installations de traitement des eaux usées

Le département de recherche de Solvin a mis au point une solution révolutionnaire de traitement des eaux usées, intéressante du point de vue écologique et économique; il s'agit d'un

procédé physique pour lequel la consommation d'énergie ne dépasse pas 30% environ de celle normalement nécessaire. L'innovation consiste à séparer l'eau des huiles et/ou des métaux lourds en une seule opération, sans avoir recours aux produits chimiques. Les eaux épurées dans une installation Solvin AWA 2000 peuvent être recyclées, ce qui contribue encore à l'économie d'énergie et à la réduction des coûts.

Instalaciones tratamiento de aguas residuales

La investigación Solvin ofrece para la preparación de aguas residuales, ahorrativa de energía y cuidadora del medioambiente, una alternativa revolucionaria: preparación física de aguas residuales que sólo necesita aprox. el 30% de energía frente a la preparación usual. La novedad: separación de aguas residuales, cargadas de aceite y/o metal pesado, en un proceso de trabajo, ahorrativo de energía y, gracias a su renuncia o privación de sustancias químicas, agradable al medioambiente y barato. El agua residual, limpiada en la instalación de preparación de aguas residuales Solvin AWA 2000, puede emplearse también como agua de reciclaje. Esto significa ahorros de energía y costes.



Mineral Oil Separator

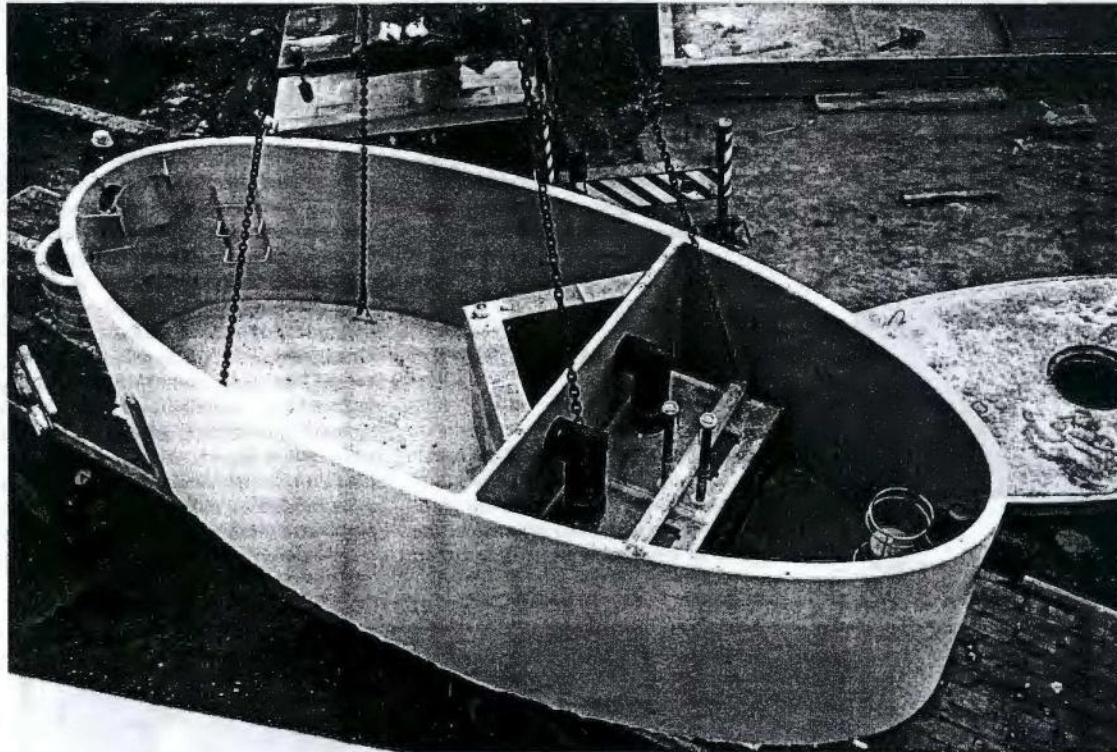


Low space requirements and a 90% reduction of maintenance costs are among the most important advantages of the new mineral oil separators from the Firm Stoiser and Wolschner. The systems ensure the highest cleaning efficiency currently achieved under test conditions. Whereas hitherto three tanks were required for waste water clarification to

relevant standards, the new SW plant achieves the same effect with only one tank, meaning that the silt trap and gravity and residual oil separator are all contained in one compact basin. In this newly developed separator the carbohydrates oil and petrol rise to the surface. The oil film grows steadily in thickness and the cleaned water can be drained off.

STOISER & WOLSCHNER
Umwelttechnik Ges. m. b. H.

A-9021 Klagenfurt
Bahnstraße 87 u. 93
Telefon: +43/463/321 09-0
Telefax: +43/463/376 67
☒ Deutsch, English



▲ Installation of a 20 l/s mineral oil separator Model SW-Euro-BA 20 integral for a multi-storey carpark in Heiligenblut

Mineralölabscheider

Geringer Platzbedarf und eine Reduzierung der Wartungskosten um 90% – das sind kurz zusammengefaßt die wesentlichen Vorteile der neuen Mineralölabscheideanlagen der Firma Stoiser u. Wolschner. Die Systeme erreichen den höchsten Reinigungsgrad, der derzeit gemäß den Prüfbedingungen erzielt wird. Sorgen bisher drei Behälter für die normgerechte Klärung des Abwassers, so kommt die neue SW-Anlage mit nur einem Behälter aus. Das bedeutet, daß Schlammfang, Schwerkraft- und Restölabscheider in einem kompakten Becken untergebracht sind. In dieser neuentwickelten Abscheideanlage steigen Kohlenwasserstoffe wie Öle und Benzin an die Oberfläche. Es bildet sich ein stetig wachsender Ölfilm, und das gereinigte Wasser kann abfließen.

Séparation des huiles minérales

Encombrement minimum et réduction des coûts d'entretien de 90% - tels sont les atouts majeurs des nouvelles installations de séparation des huiles minérales de Stoiser u. Wolschner. Ces systèmes permettent d'obtenir le plus haut degré d'épuration réalisable aujourd'hui selon les conditions d'essai prescrites. Alors qu'on avait jusqu'ici besoin de trois réservoirs pour obtenir l'épuration des eaux usées conformément aux normes, la nouvelle installation SW n'utilise qu'un seul bassin compact, servant à la fois de collecteur de boues, séparateur à gravité et séparateur d'huiles résiduelles. Les hydrocarbures - huiles ou essence - remontent à la surface. Il se forme en surface une couche d'huile de plus en plus épaisse et l'eau épurée peut s'écouler.

Separadoras de aceite mineral

Poco espacio requerido y 90% de reducción de los gastos de mantenimiento . . . tales, brevemente resumidas, las ventajas esenciales de las nuevas instalaciones separadoras de aceite mineral que ofrece la firma Stoiser u. Wolschner. Los sistemas alcanzan el grado máximo de purificación a alcanzarse actualmente conforme condiciones de control. Si hasta ahora se necesitaron tres recipientes para la clarificación según normas de las aguas residuales, a la nueva instalación le basta sólo un recipiente. Esto significa que el recogedor de fangos, así como el separador de aceite residual y el de gravedad están instalados en una sola pila o estanque compacto. En esta instalación separadora, de nuevo desarrollo, los hidrocarburos, como aceites y gasolina, suben a la superficie. Se forma así una película siempre creciente de aceite y el agua depurada vuelve a escurrir limpia.

Waste Water Engineering – Recycling Engineering

A WATEC are engaged in industrial waste water engineering based, in particular, on recycling techniques as applied in all liquid-solid separation and the re-utilisation of recyclable materials. Backed by many years of experience, the firm can offer a services package covering

everything from preliminary planning onwards and including the coordination of all plant components with computerisation of all plant operations.

Abwassertechnik – Recyclingtechnik

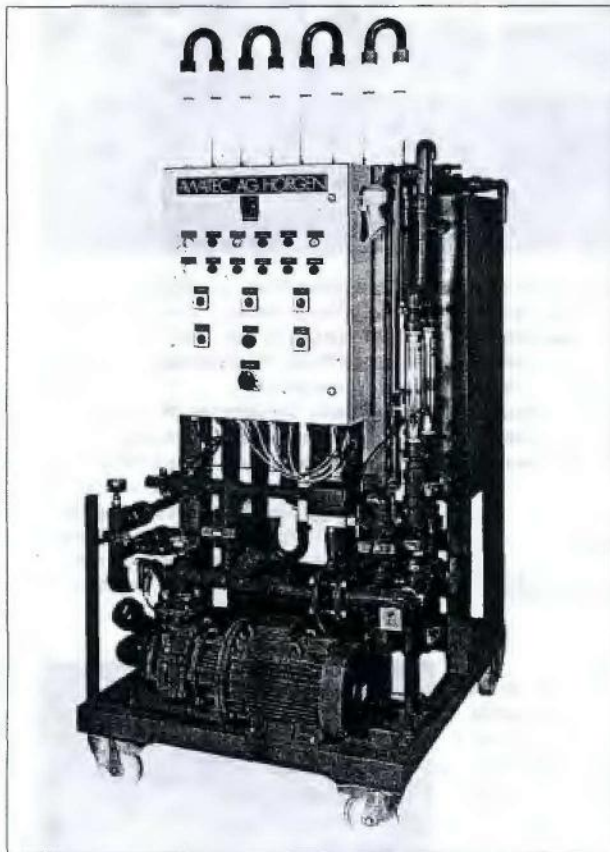
A WATEC beschäftigt sich mit der industriellen Abwassertechnik, insbesondere auf Basis von Recyclingtechnik in allen Bereichen der Flüssig-Feststofftrennung und Wiederverwertung von recyclingbaren Stoffen. Durch die langjährige Erfahrung ist das Unternehmen in der Lage, von der Vorprojektierung über die Koordination sämtlicher Anlagenkomponenten inklusive Computerisierung aller Betriebsabläufe ein Gesamtleistungspaket anzubieten.

Traitement des eaux usées - Recyclage

A WATEC s'intéresse aux techniques industrielles de traitement des eaux usées, en particulier sur la base de techniques de recyclage dans tous les domaines de la séparation liquides/solides et de la récupération des matières recyclables. Fort d'une longue expérience, AWATEC est en mesure de proposer l'ensemble des prestations allant de l'avant-projet à la réalisation, y compris la coordination de tous les composants d'une installation et l'informatisation de toutes les opérations.

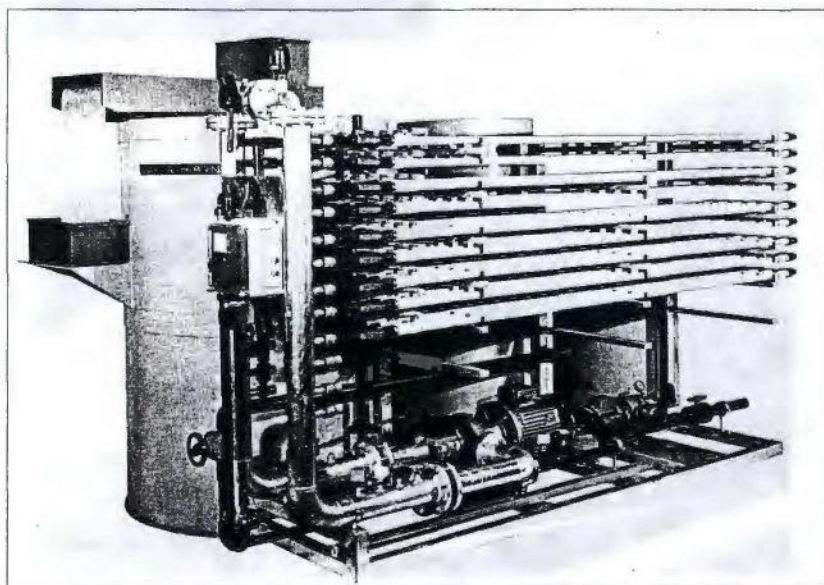
Técnica de aguas residuales – Técnica de reciclaje

A WATEC se ocupa de la técnica industrial de aguas residuales, especialmente a base de la técnica de reciclaje en todos los sectores de la separación de sustancias líquidas y sólidas y recuperación de sustancias reciclables. Gracias a su experiencia de muchos años la empresa está en condiciones de ofrecer la preparación y coordinación de todos los componentes de instalaciones, incluso computarización de todos los desarrollos del proceso, en un paquete total de prestaciones.



◀ Ultrafiltration plant I.
Membrane filtering
technique for recycling
of water-soluble
lacquers

Ultrafiltration plant II.
Membrane filtering
technique for recycling
of water-soluble
lacquers



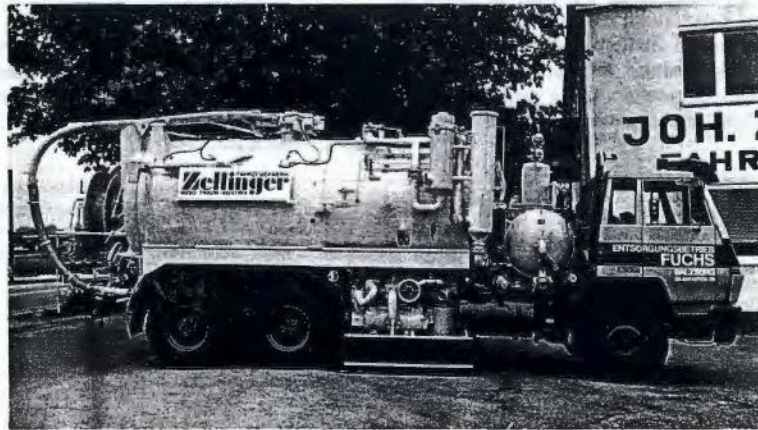
**AWATEC ABWASSERTECHNIK-
RECYCLINGTECHNIK**
Werner Prochaska

A-3430 Tulln
Kaplanstrasse 7
Telefon: +43/2272/3805
Telefax: +43/2272/3805-9
☎ Deutsch, English



Tunnel Washing Machine Sewer Cleaning Vehicle

The lineup of the firm Zellinger includes special vehicles for cleaning sewers and transporting hazardous goods, tunnel washing machines and toilette-cleaners and water tankers for aeroplane servicing. The tunnel-washers with their rotating brushes and water pressure up to 100 bar can be used for cleaning not only road tunnels, but also retaining walls, crash barriers and balustrades. The sewer cleaners with built-in oil/water separation unit suck in the oil/water mixture and separate it at the disposal point. The clean water can be led into the sewer or oil (residual oil is less than 10 ppm); the separated oil is conveyed automatically to a specially provided container.



Tunnelwaschmaschine / Kanalreinigungsfahrzeug

Sonderfahrzeuge zur Kanalreinigung und zum Transport gefährlicher Güter, Tunnelwaschmaschinen sowie Toiletteentsorgungs- und Wasserversorgungsfahrzeuge für Flugzeuge gehören zum Erzeugungsprogramm der Firma Zellinger. Die Tunnelwaschmaschinen dienen nicht nur zur Reinigung von Straßentunnels, sondern auch von Stützmauern, Leitschienen und Geländern durch rotierende Bürsten und Wasserhochdruck bis 100 bar. Die Energieeinsparung für Beleuchtung und Ventilation beträgt dadurch bis zu 50%. Die Kanalreinigungsfahrzeuge mit aufgebauter Öl-Wassertrenneinrichtung saugen das Öl-Wassergemisch auf und trennen es am Entsorgungsort. Das Reinwasser kann in den Kanal bzw. Ölabscheider geleitet werden (Restölanteil kleiner 10 ppm), das abgetrennte Öl wird automatisch in einen eigenen Kessel geleitet.

rage et le fonctionnement des ventilateurs. Les engins de nettoyage des égouts équipés d'un séparateur huiles/eau aspirent le mélange huile/eau et le séparent sur place. L'eau propre peut être renvoyée à l'égout ou à un déshuileur (taux d'huile résiduelle inférieur à 10 ppm); l'huile éliminée est envoyée automatiquement à une chaudière spéciale.

Lavadoras de túneles/ vehículos limpiadores de canalizaciones

El programa de producción de la empresa Zellinger comprende vehículos especiales para limpiar canalizaciones y transportar materiales peligrosos, lavadoras de túneles, vehículos para limpiar retretes, así como vehículos para transportar el agua a los aviones. Las máquinas lavadoras de túnel sirven no sólo para limpiar los túneles de carreteras sino también los muros con contrafuertes, carriles o contracarriles, así como balaustradas y barandillas.

La limpieza se hace con cepillos giratorios y a alta presión de agua de hasta 100 bar. Con esto se alcanza hasta 50% de ahorro de energía de alumbrado y ventilación. Los vehículos limpiadores de canalizaciones con montado equipo separador de aceite-agua aspiran la mezcla de aceite-agua y la separan en el lugar de su eliminación. El agua limpia puede conducirse a la canalización o al separador de aceite (la parte de aceite restante es menos de 10 ppm); el aceite separador se conduce automáticamente a una caldera propia.

JOH. ZELLINGER
Ges. m. b. H. & Co. KG

A-4050 Traun
Kremstalstraße102
Telefon: +43/7229/4491-0
Telefax: +43/7229/4491-20
Deutsch, English, Français

Machine à laver les tunnels, engin de nettoyage des égouts

Engins spéciaux pour le nettoyage des égouts et le transport de produits dangereux, machines à laver les tunnels ainsi que véhicules pour la ventilation et l'alimentation en eau des toilettes d'avion, tels sont les principaux volets du programme de production Zellinger. Ses machines à laver les tunnels, à brosses rotatives et pression d'eau pouvant aller jusqu'à 100 bars, sont utilisées pour le nettoyage des tunnels routiers, des murs de soutènement, des glissières de sécurité et des mains-courantes. Le nettoyage permet d'économiser jusqu'à 50% d'énergie pour l'éclairage



Sewage Treatment Equipment

In our century water has become one of Earth's most precious commodities. Waste water purification is thus gaining steadily in importance. Pantucek are a well-known producer of sewage treatment plants and equipment. The line-up embraces all machinery and equipment for sewage works: pumping stations, screening plants, trash compacters, desilting equipment, sand silos, sand separators, primary settling and aeration tank equipment of all types, secondary sedimentation tank equipment, sludge thickeners, precipitating equipment, sludge presses, all non-housed gate stems, ducted gates, stoplogs, steel sluices, pipework and rainwater tanks. An extensive after-sales service network ensures the reliable operation of the company's products.

PANTUCEK Kläranlagen
 Ges. m. b. H. Telefon: +43/2145/2252
 +43/2145/2253
 Edelstalerstrasse 5 ☐ Deutsch, English

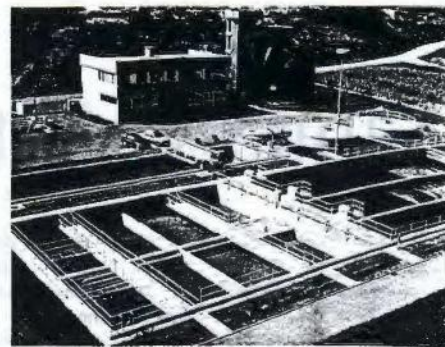
Abwassertechnik

Pantucek ist ein bekanntes Unternehmen auf dem Kläranlagen- und Anlagenbausektor. Die Angebots-

palette umfaßt Ausrüstungsteile für Abwasseranlagen, wie z. B. Pumpwerke, Rechenanlagen, Rechengutverdichter, Sandfang-ausrüstungen, Sandsilos, Sandklassier, Vorklär- und Belebungsbeckenaus-rüstungen aller Variationen, Nachklärbeckenaus-rüstungen, Faulturmausrüstungen, Eindicker, Fällmittelanlagen, Schlammpres-sen, sämtliche gehäuselosen Gewinde-schieber, Rinnschieber, Dammbalken, Stahlschütze, Rohrleitungsbau, Regenklär-becken. Ein gut ausgebautes Servicenetz sorgt für ein reibungsloses Funktionieren dieser Anlagen.

Traitement des eaux usées

Pantucek est connu pour ses presta-tions dans le domaine des installa-tions d'épuration des eaux usées et des installations technologiques. Sa gamme de matériels pour installations d'épuration des eaux se décline comme suit: stations de pompage; dispositifs à râeaux, compres-seurs de produits raclés, dessableurs, silos à sable, installations de criblage du sable, équipements de tous types pour bassins de décantation primaire et bassins d'activa-tion, équipements pour décanteurs secon-daires, équipements pour digesteurs, pres-ses à boues, batardeaux, différents types de vannes, conduites, bassins d'épuration des eaux pluviales. Un excellent suivi après-



vente garantit le bon fonctionnement de ces installations.

Técnica de aguas residuales

Pantucek es una empresa conocida en el sector de depósitos clarifica-dores y de construcción de instala-ciones para aguas residuales. La paleta de oferta comprende piezas de equipamiento para instalaciones de aguas residuales, como por ej. estaciones de bombeo, instala-ciones de rastrillos, compresores del mate-rial rastrillado, equipos receptores de arena, silos de arena, clasificador de arena, equi-pos de preclarificación y de estanques, re-vitalización en todas sus variaciones, equi-pos de estanques de clarificación posterior, equipos torre de pudrición, espesadores, instalaciones de precipitantes, prensas de fango, todo tipo de compuertas de roscas sin cajas, compuertas de acerquias, vigas de cierre, compuertas de acero, construcción de tuberías, piletas depuradoras de agua de lluvia. Una red bien densa de servicio tiene a su cargo el impecable funcionamiento de estas instalaciones.

Waste Water Purification

Tepro specialise in overall solutions to industrial waste water disposal problems, one of which is the treatment of the waste water from flue gas scrubbers. Apart from practically all the heavy metals this contains numerous other contaminants - sulfites, sulfates, ammonia, etc. For such waste water from workshops and factories Tepro build customised purification plants to satisfy regulations governing discharge of effluents into municipal sewers, outfalls, etc.

Abwasserreinigung

Tepro ist Spezialist für Gesamtlösun-gen, um betriebliche Abwässer in den Griff zu bekommen. Ein spezi-elles Problem stellt dabei die Aufbereitung von Abwasser aus Rauchgaswäschern dar. In diesem Abwasser kommen beinahe alle Schwermetalle vor, daneben noch zahl-

reiche andere unerwünschte Wasserin-haltsstoffe wie Sulfite, Sulfate, Ammoniak, etc. Für die bei den verschiedenen Pro-duktionsabläufen in Gewerbe und Industrie anfallenden Abwässer baut Tepro kundenspezifische Abwasserreinigungsan-lagen entsprechend den Emissionsgrenzwerten für die Einleitung in öffentliche Klä-ranlagen oder in Vorfluter.

Epuration des eaux usées

Tepro est le spécialiste des solutions globales pour la dépollution des eaux industrielles, domaine dans lequel le traitement des effluents des installa-tions d'épuration des gaz de fumée consti-tue un problème à part. On trouve dans ces eaux à peu près tous les métaux lourds avec en plus un certain nombre de mati-ères indésirables telles que sulfites, sulfates, ammoniac, etc. Tepro construit des installa-tions d'épuration des eaux répondant aux besoins spécifiques du client et aux condi-tions de production des différentes indus-tries, l'enjeu étant d'obtenir une eau res-pectant les limites de pollution imposées pour l'adduction dans les installations d'épuration des eaux usées et les émissai-res urbains.

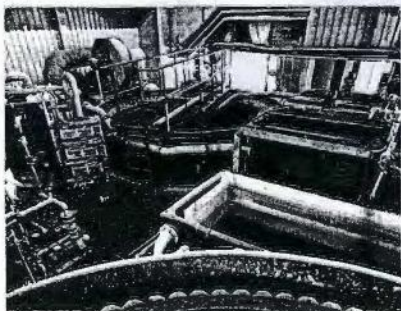
Depuración de aguas residuales

Tepro es el especialista de solucio-nes completas, ordenadas a domi-nar las aguas residuales de las empresas. Un problema especial es el trata-miento de aguas residuales de lavaderos de gas de humo. En estas aguas residuales se encuentran casi todos los metales pesados, además de numerosas sustancias indesea-bles del agua como sulfitos, sulfatos, amoníaco, etc. Para las aguas residuales que se producen en los distintos procesos de producción en la industria y comercio construye Tepro instalaciones depuradoras de aguas residuales específicas según cada cliente correspondientemente a los valores límites de emisión para su acceso a las plan-tas depuradoras públicas o cauces de des-agüe.

TEPRO WASSERTECHNIK
 Ges. m. b. H.

A-8501 Lieboch
 Turmplatz 1
 Telefon: +43/3136/620 22-0
 Telefax: +43/3136/620 226
 ☐ Deutsch, English

In foreground a sludge thickener. Behind it a settling tank, oxidation basin and desatura-tion tank



Sanitary Water Control Systems



For 40 years Kühnel have been producing sanitary water control systems under the tradename "Sanicontrol". The comprehensive lineup of electronic control systems for urinals washbasins and showers embraces 30 models. The latest product is a battery-powered single urinal flushing system of eye-catching design and intended as a substitute for hand-actuated flushing valves. The infrared proximity switch, which triggers flushing after urinal use, not only saves water, but also guarantees maximum hygiene.

Sanitäre Wassersteuerungen

Kühnel erzeugt seit 40 Jahren sanitäre Wassersteuerungen unter dem geschützten Markennamen Sanicontrol. Das umfangreiche Programm zur elektronischen Steuerung für Urinale, Waschbecken und Duschen umfaßt mehr als 30 Modelle. Das jüngste Produkt stellt eine batteriebetriebene Einzelurinalspülung dar, die durch modernes Design besticht und als Ersatz für handbetätigte Druckspüler für Urinalbecken dient. Durch die Infrarot-Näherungselektronik, die nach

der Benützung eine Spülung auslöst, wird nicht nur Wasser gespart, sondern auch ein Maximum an Hygiene garantiert.

Commandes de robinetterie sanitaire

Kühnel fabrique depuis 40 ans des commandes de robinetterie sanitaire vendues sous la marque déposée Sanicontrol. Il propose plus de 30 modèles de commandes électroniques pour urinoirs, lavabos et douches. Il a sorti récemment une chasse d'eau pour urinoir fonctionnant sur pile, séduisant par son esthétique moderne. Ce système électronique qui remplace les chasses d'eau à commande manuelle consiste en un commutateur capacitif à infrarouge qui déclenche la chasse; il permet de réduire la consommation d'eau en même temps qu'il garantit un maximum d'hygiène.

Mandos de agua para sanitarios

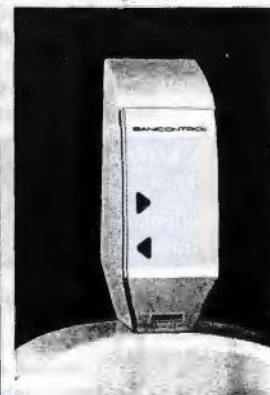
Kühnel produce desde hace 40 años mandos de agua para sanitarios bajo el patentado nombre de

marca Sanicontrol. El vasto programa de mandos electrónicos de urinarios, lavabos y duchas comprende más de 30 modelos. El producto más reciente consiste en un enjuague individual del urinal, accionado por batería. Seduce por su diseño moderno y sirve como sustitución a los enjuagues a presión para tazas de urinales accionados a mano. Gracias a la electrónica infrarroja de acercamiento, que acciona un enjuague inmediatamente después de que el usuario se retira, no sólo se ahorra agua sino se garantiza también un máximo de higiene.

IR single battery-powered urinal flushing unit ▼

Dipl.-Ing. R. KÜHNEL
Ges. m. b. H.

A-1120 Wien
Anton-Scharff Gasse 4
Telefon: +43/1/814 15 0
Telefax: +43/1/814 15 16
☑ Deutsch, English,
Français, Español,
Italiano



Sewer Castings

In addition to heating boilers Valdura have for decades now turned out manhole covers, gully and gutter grids and tree protector gratings of GG 20 produced in automatic moulding plants with a maximum box size of 2000 x 1200 + 200 + 200. Standard parts are designed, produced and tested to ÖNORM or DIN. Thanks to their own design department the foundry is also in a position to supply not only time-proven but also newly developed products on a short-term basis both reliably and economically.

Kanalguß

Seit Jahrzehnten werden von Valdura neben Heizungskessel auch Schachtabdeckungen, Einlaufgitter, Rinnenabdeckroste sowie Baumscheiben aus GG 20 auf automatischen Formanlagen mit einer maximalen Kastengröße von 2000 x 1200 x 200 + 200 gegossen. Soweit es sich um genormte Teile handelt, werden diese entsprechend der ÖNORM bzw. DIN konstruiert, gefertigt und geprüft. Aufgrund der eigenen Modellabteilung ist die Gießerei auch in der Lage, sowohl bewährte als auch neuentwickelte Produkte mit kurzen Lieferzeiten verlässlich und wirtschaftlich zu erzeugen.

VALDURA-Gießerei Ges. m. b. H.

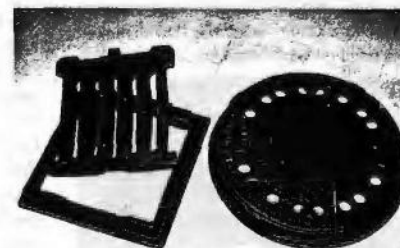
A-2700 Wiener Neustadt
Wienerstrasse 118
Telefon: +43/2622/235 55
Telefax: +43/2622/253 46
☑ Deutsch, English

Moulages en fonte pour égouts

Parallèlement à sa production de chaudières, Valdura fabrique depuis plusieurs dizaines d'années des pièces moulées telles que plaques d'égout, grilles d'égout, en fonte grise 20; grilles de caniveaux et grilles de protection des racines d'arbres ces pièces sont produites sur installations automatiques, la dimension maximum des châssis de moule étant de 2000 x 1200 200 + 200. Les pièces standard répondent aux normes DIN et ÖNORM (norme autrichienne). La fonderie possédant un atelier de fabrication de moules, elle est en mesure de fabriquer économiquement, en respectant strictement les cotes, aussi bien des produits nouveaux que ses produits standards et de les livrer dans les meilleurs délais.

Piezas de fundición para alcantarilla

Desde hace decenios Valdura fabrica a más de calderas de calefacción, cubiertas de caja, rejas de entrada, parrillas tapa alcantarillas, así como discos protectores de tallos, de fundición gris GG 20 fundidos en instalaciones automáticas de moldes de un tamaño máximo de caja de 2000 x 1200 x 200 + 200. Mientras se trata de partes normalizadas, éstas se construyen, fabrican y controlan correspondientemente a la ÖNORM o DN. Gracias al propio departamento de modelos, la fundería está en condiciones de fabricar, de forma segura y económica, tanto productos comprobados como también nuevamente desarrollados, todo esto a cortos plazos de entrega.



Waste Gas, Waste Water and Storage Technology

Heson absorption plants operate on the dust scrubber principle and are used for all assignments where materials are to be removed from gases and recycled for reuse in the process concerned.

In the treatment of the waste waters from the metalworking industry ways of improving flushing technique, recovery and recycling are also among the firm's main aims. A rational supplement to this programme is provided by Heson storage technology developed for the storage of water-polluting and inflammable materials. All storage problems – from small-volume to large-scale chemical storage – are solved in the company's own plant.

Abluft-, Abwasser- und Lagertechnik

Heson-Absorptionsanlagen arbeiten nach dem Prinzip der Naßwäscher und werden überall dort eingesetzt, wo Stoffe aus Gasen entfernt werden und durch Kreislaufführung dem Prozeß als Wertstoffe wieder zugeführt werden sollen. Bei der Behandlung der Abwässer aus der metallverarbeitenden Industrie stehen Fra-

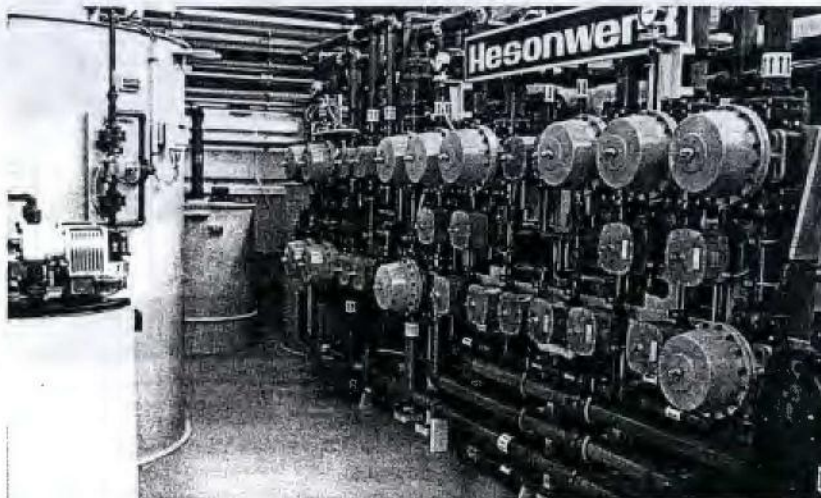
gen, wie Verbesserung der Spültechnik, der Rückgewinnung und der Kreislaufführung, ebenfalls im Vordergrund. Eine sinnvolle Ergänzung zu diesem Programm stellt die Heson-Lagertechnik zur Lagerung von wassergefährdenden und brennbaren Stoffen dar. Von Kleinstmengen bis zum Großchemielager werden alle Lagerprobleme in eigener Fertigung gelöst.

Traitement de l'air d'évacuation et des eaux résiduaires, système de stockage

Les installations d'absorption Heson, qui fonctionnent selon le principe des laveurs-épurateurs à eau, sont utilisées partout où il s'agit d'éliminer d'un gaz des matières qui seront réintroduites dans le cycle où elles seront utilisées comme matières premières.

Concernant le traitement des eaux résiduaires de l'industrie de transformation des métaux, les problèmes essentiels sont ceux de l'amélioration de la technique de rinçage, de la récupération et du recyclage.

En complément à ce programme, Heson propose un système de stockage pour les matières risquant de polluer l'eau et les produits inflammables. La société est à même de résoudre tous les problèmes de stockage, pour les quantités minimales aussi bien que pour les gros entrepôts chimiques.



Waste water purification plant in an electronics firm ▲

**HESONWERK Luft- und Wassertechnik
Lagereinrichtungen Gesellschaft m. b. H.**
A-4655 Vorchdorf

Pettenbacher Strasse 66
Telefon: +43/7614/8301-0
Telefax: +43/7614/8301-20
☒ Deutsch, English

Waste gas scrubber, 60,000 m³ cap., for technical university ▼



Storage of water-polluting materials



Técnica de aire de salida, de aguas residuales y de depósitos

Las instalaciones de absorción Heson trabajan según el principio de lavador húmedo y se emplean en todos los lugares donde deben eliminarse sustancias de gases para, mediante conducción de ciclo reconducirse de nuevo al proceso cual materia prima.

En el tratamiento de las aguas residuales de la industria transformadora de metales ocupan un lugar preponderante las cuestiones como mejora de la técnica de lavado, recuperación de material y reconducción de ciclo. Un complemento práctico a este programa lo constituye la técnica Heson de depósito para almacenar materias inflamables y materias peligrosas para el agua. La Heson resuelve, con ejecuciones propias, todos los problemas de depósito o almacenaje, desde los de cantidades mínimas hasta los de grandes depósitos químicos.

Sewage Clarification, Sludge Processing



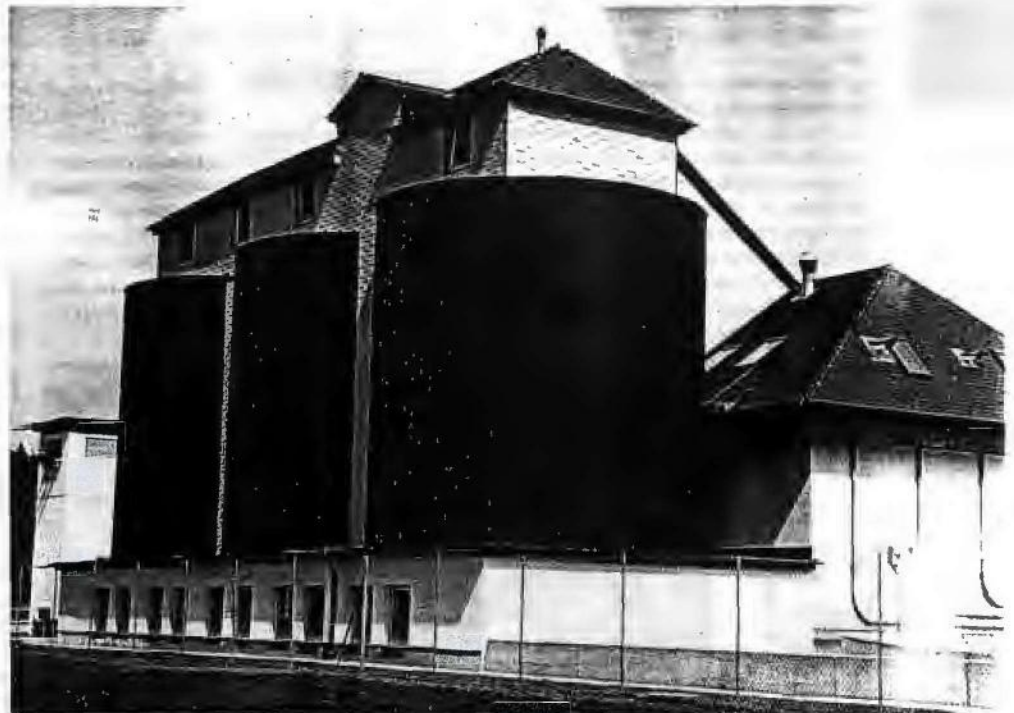
V OEST-ALPINE Montage G.m.b.H. (VAM) plan and deliver single components and turnkey plants for:

- Industrial sewage clarification.
- Municipal sewage clarification/sewage works construction.
- Sludge dewatering by means of chamber filter presses, membrane filter presses and belt presses.
- Composting plants for dewatered sewage sludge using the "VAM-KSV Process".
- Landfill seepage water treatment.

Abwasserreinigung / Schlammbehandlung

D ie VOEST-ALPINE Montage G.m.b.H. (VAM) plant und liefert Einzelkomponenten und Gesamtanlagen für:

- industrielle Abwasserreinigung
- kommunale Abwasserreinigung / Kläranlagenbau
- Schlammentwässerung mittels Kammerfilterpressen, Membranfilterpressen und Siebbandpressen
- Kompostieranlagen für entwässerten Klärschlamm durch das „VAM-KSV-Verfahren“
- Deponiesickerwasseraufbereitung



▲ Sludge dewatering and converting at the sewage treatment plant Vöckla-Redl/Upper Austria

VOEST-ALPINE Montage Gesellschaft m. b. H. / VAM

A-4600 Wels
 Dieselstrasse 2
 P. O. B. 212
 Telefon: +43/7242/406-0
 Telefax: +43/7242/406-350
 ☑ Deutsch, English

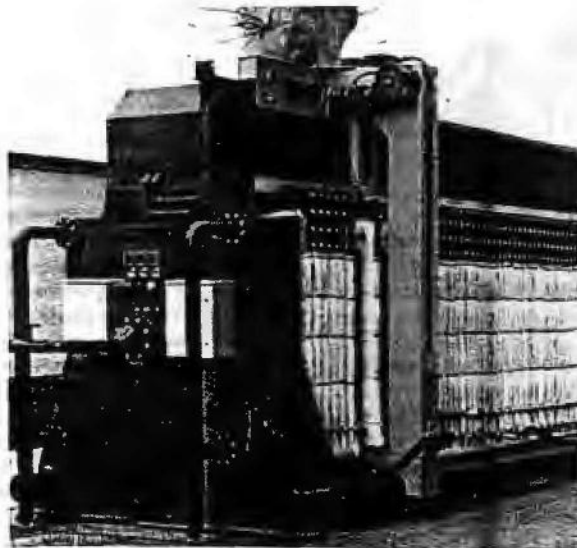
Epuración des eaux usées - traitement des boues

V OEST-ALPINE Montage G.m.b.H. (VAM) élabore et fournit des éléments et des installations complètes pour les applications suivantes:

- épuration industrielle des eaux usées,
- épuration des eaux d'égout / construc-

tion de stations de traitement des eaux d'égout,

- deshydratation des boues au moyen de filtres-presses à chambres, filtres-presses à diaphragme et presses-tamis à bandes,
- installations de compostage pour boues de curage deshydratées à l'aide du procédé "VAM-KSV",
- traitement des eaux d'infiltration provenant des décharges.



▶ Sludge dewatering by means of chamber filter presses

Purificación del agua/tratamiento del lodo

L a Voest-Alpine Montage G.m.b.H. (VAM) proyecta y suministra componentes individuales e instalaciones completas para:

- purificación de aguas residuales industriales
- purificación de aguas residuales comunales/construcción de instalaciones clarificadoras
- drenaje de los fangos mediante filtro-pressa de varios compartimentos, filtro-pressas de membrana y pressas de cinta tamizadora
- instalaciones de compostaje para fango deshidratado de clarificación conforme „proceso VAM-KSV“.
- preparación de agua de infiltración de depósito.

Component Cleaning System



Cleaning System "FLEXICLEAN" ▲

AICHELIN
Industriefenbau Ges.m.b.H.

A-2340 Mödling
Fabriksgasse 3
Telefon: +43/2236/23646-0
Telefax: +43/2236/22229
☒ Deutsch, English

Sistema depurador de elementos de construcción

La depuración mediante hidrocarburos clorados sigue siendo un proceso ampliamente difundido a pesar de la fuerte carga para el ambiente por emisiones de aire y ensuciamiento de residuales. Para la limpieza y desengrase de construcción de superficies de elementos antes y después de procesos de tratamiento puede utilizarse un nuevo sistema de de-

puración que elimina esas desventajas: Aichelin ha desarrollado con „flexiclean“ una máquina lavadora que trabaja con un baño de lavado ligeramente alcalino. El digestado a baja presión y el secado en vacío posibilitan resultados de limpieza absolutamente cumbres con bajo consumo de energía. Después del desengrase precedente el caudal del baño puede vaciarse en las tuberías comunales de aguas residuales. Con esto se puede prescindir totalmente de los hidrocarburos clorados utilizados hasta ahora.

Despite the high environmental impact due to noxious emissions and effluents the cleaning of components using CHC's is still widespread. For cleaning and degreasing dirtied components or following machining operations a new technique is now on the market that eliminates such disadvantages: the "Flexiclean" system developed by the firm Aichelin makes use of a slightly alkaline washing liquor. Reduced pressure boiling and vacuum drying result in record cleaning effects despite minimum energy requirement. After degreasing the washing liquor can be discharged into sewerage drains. The use of CHC's can thus be completely dispensed with.

Bauteile – Reinigungssystem

Die Reinigung mittels chlorierter Kohlenwasserstoffe ist trotz starker Umweltbelastung durch Luftemissionen und Abwasserverschmutzung ein noch immer weit verbreiteter Vorgang. Für Reinigung und Entfettung von Bauteiloberflächen vor und nach Bearbeitungsvorgängen kann ein neues Reinigungssystem eingesetzt werden, das diese Nachteile ausschaltet: Aichelin entwickelte mit der „Flexiclean“ eine Waschmaschine, die mit schwach alkalischer Waschflotte arbeitet. Kochen bei Unterdruck und Trocknung im Vakuum ermöglichen absolute Spitzenresultate bei der Reinigung bei geringem Energieaufwand. Die Waschflotte kann nach vorhergegangener Entfettung in die kommunale Abwasserleitung entsorgt werden. Damit kann auf die bisher verwendeten CKW zur Gänze verzichtet werden.

Système de nettoyage de pièces d'usinage

En dépit de leur impact sur l'environnement, se traduisant par une forte pollution de l'air et des eaux, les hydrocarbures chlorés continuent à être largement utilisés comme produits de nettoyage. Pour remédier à cet inconvénient, Aichelin propose un nouveau système de nettoyage et de dégraissage de la surface des pièces avant et après usinage: "Flexiclean" est une machine de lavage utilisant une lessive faiblement alcaline. L'ébullition sous vide partiel et le séchage sous vide permettent d'obtenir des résultats exceptionnels pour une dépense d'énergie minimale. Après dégraissage la lessive peut être évacuée dans les égouts urbains. Cette méthode permet de supprimer complètement l'utilisation des hydrocarbures chlorés pour ce type d'application.

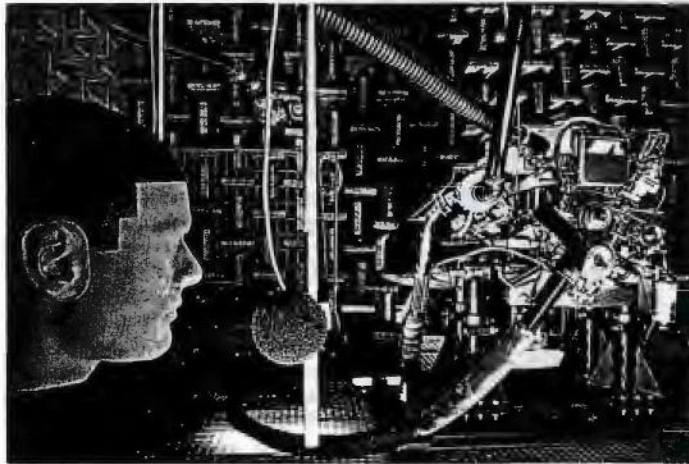
Engine Test Stands

AVL, a competent partner in the combustion engine and automobile optimisation sector, handle research and development projects for the whole of the combustion engine and auto industry relating to design, performance improvement, exhaust emission and noise control. The company has at its disposal a large number of test stands fitted with state-of-the-art sound measuring equipment and a team of experienced engineers. As a result, experimental improvements can be quickly implemented and problems solved ready for assembly-line production. In addition, mainframes help in design and development by simulation and optimisation of possible modifications, special software, some of it created by AVL, being used to solve relevant engine problems.

Motorenprüfstände

AVL, der kompetente Partner im Bereich der Motor- und Fahrzeugoptimierung, bearbeitet Forschungs- und Entwicklungsprojekte für die gesamte Motor- und Fahrzeugindustrie weltweit in den Bereichen Konstruktion, Leistungssteigerung, Abgas- und Geräuschemissionen. Zur Verfügung stehen mehrere mit modernster akustischer Meßtechnik ausgestattete Schallprüfstände und ein Team erfahrener Ingenieure. So können einerseits experimentelle Verbesserungen rasch erzielt und andererseits serienreife Problemlösungen erarbeitet werden. Darüberhinaus unterstützen Großrechenanlagen die Konstruktion und Entwicklung durch Simulation und Optimierung von möglichen Modifikationen, wobei

AVL Noise test stand in operation measuring engine noise ▼



Bancs d'essai pour moteurs

Spécialisé dans l'optimisation des moteurs et des véhicules, AVL est un partenaire hautement compétent des fabricants de moteurs et de l'industrie automobile du monde entier. Ses projets de recherche et développement portent sur la construction, l'augmentation de puissance, les émissions de gaz polluants et le bruit. Il dispose de plusieurs bancs d'essai équipés de systèmes de mesure acoustiques sophistiqués pour le contrôle du bruit, permettant à ses ingénieurs d'une part d'apporter rapidement des améliorations expérimentales, d'autre part d'étudier des solutions pour la production en série. Ses équipes d'études et de développement sont assistées par des calculateurs puissants, leur permettant de simuler et d'optimiser les modifications possibles, tâches pour lesquelles l'institut utilise en partie des logiciels spécialement développés par lui en vue de la solution d'un problème donné.

Banco de pruebas para motores

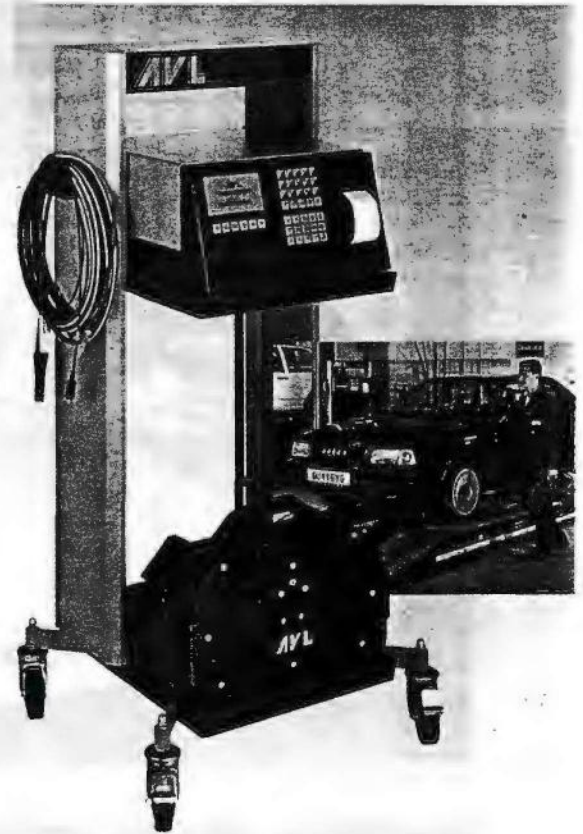
AVL, el socio competente en el sector de la optimización de motores y vehículos motorizados, elabora proyectos de investigación y de desarrollo para toda la industria mundial de motores y de vehículos motorizados en los sectores de construcción, aumento de rendimiento, emisiones de gas de escape y de ruidos. Tiene a disposición varios bancos de pruebas, equipados con la técnica de medición acústicamente la más moderna, y un „team“ de experimentados ingenieros. Así pueden, por un lado, conseguirse rápidamente mejoras experimentales y, por otro lado, elaborarse soluciones de problemas de maduración de serie. A más de esto, grandes ordenadores facilitan la construcción y desarrollo simulando y optimando modificaciones posibles. Para esto se emplea el autodesarrollado software ajustándolo a la medida de la problemática especial del motor.

AVL LIST Ges.m.b.H.
Bereich Akustik

A-8020 Graz
Kleiststrasse 48
Telefon: +43/316/987-0
Telefax: +43/316/987-288
Deutsch, English

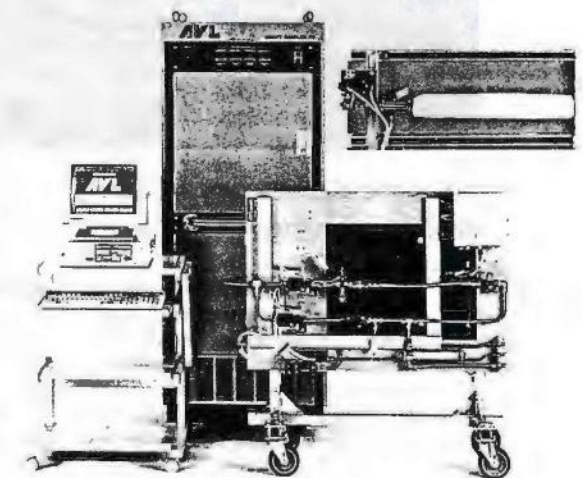


selbstentwickelte, auf die spezielle Motorproblematik zugeschnittene Software eingesetzt wird.



The AVL DiGas 465 – the new diesel exhaust tester, designed also as a full four-gas analyzer for petrol engines ▲

AVL Micro Dilution Tunnel - Fully automatic PC-controlled SPC 472 Smart Sampler ▼





Analysis Systems

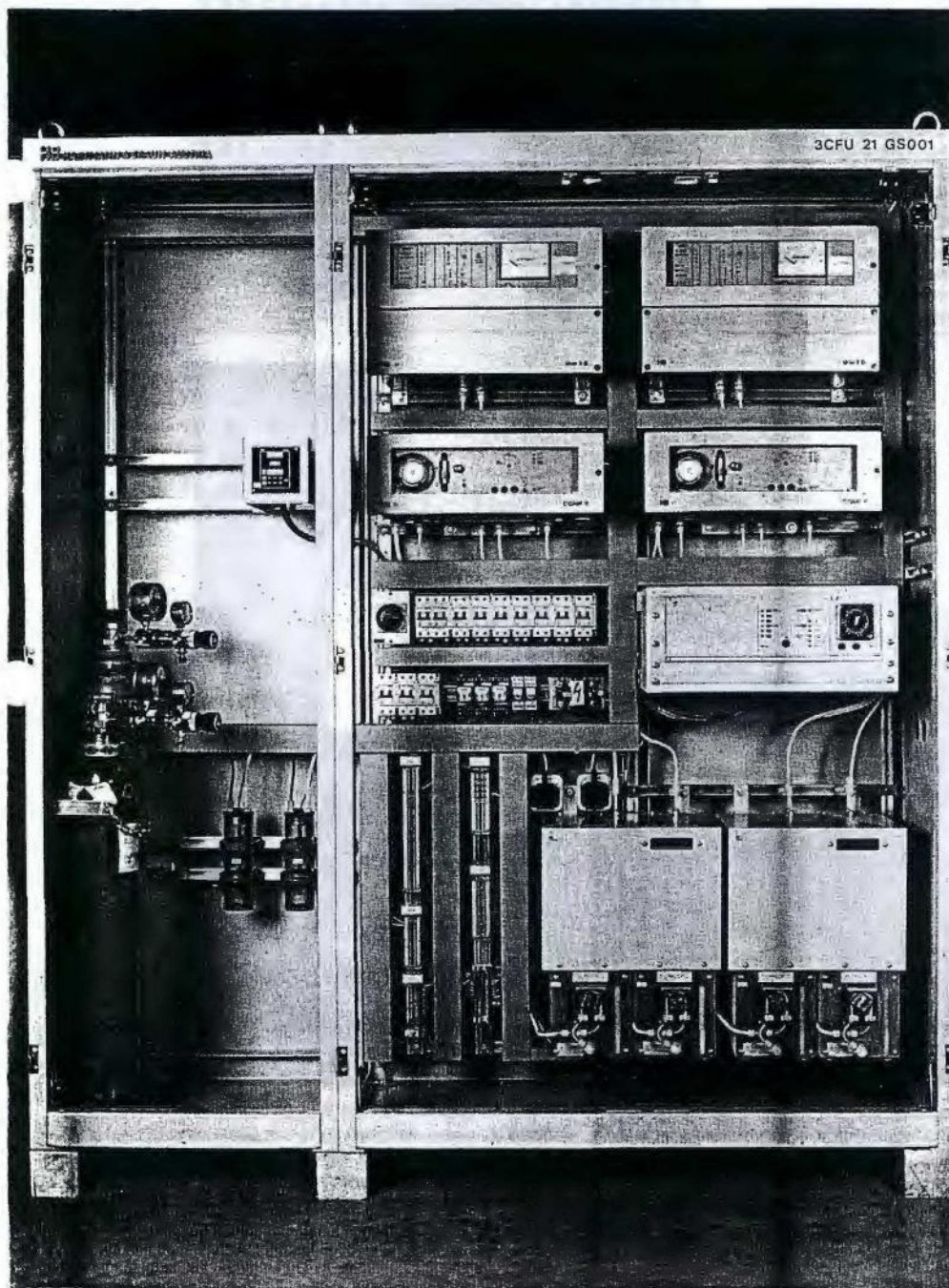
The analysis systems from Hartmann & Braun Austria are intended for the continuous quantitative assessment of the gas concentration during emission monitoring assignments and in process analysis.

The systems, which comprise sampling, gas preparation and analysis equipment, are of modular design and can thus be easily adapted to various measuring jobs and installation sites.

HARTMANN & BRAUN AUSTRIA
Gesellschaft m. b. H.

A-2380 Perchtoldsdorf
Brunnerfeldstraße 67

Telefon: +43/1/865 96-31
Telefax: +43/1/865 96-31/71
Deutsch, English



Analysensysteme

Die Analysensysteme von Hartmann & Braun Austria dienen zur kontinuierlichen, quantitativen Erfassung der Gaskonzentration in Anwendungsbereichen der Emissionsüberwachung und der Prozeßanalytik. Die Systeme, bestehend aus Entnahmeeinrichtung, Meßgasaufbereitung und Analysengeräten sind modular aufgebaut und ermöglichen so die Anpassung an die unterschiedlichen Meßaufgaben und Aufstellungsorte.

Systèmes d'analyse

Les systèmes d'analyse de Hartmann & Braun Austria servent à mesurer de façon continue les concentrations de gaz, leurs domaines d'application étant la surveillance des émissions et l'analyse de processus. Grâce à leur conception modulaire, ces systèmes qui consistent en dispositif de prélèvement, dispositif de préparation du gaz à mesurer et instruments d'analyse, peuvent être facilement adaptés pour les différentes applications et lieux d'utilisation.

Sistemas de análisis

Los sistemas de análisis de Hartmann & Braun Austria sirven para registrar en forma continua y cuantitativa la concentración de gas en los campos de empleo del control de emisiones y de la analítica de procesos. Los sistemas, que constan de una instalación de toma, de preparación del gas de medición y de aparatos de análisis, son de construcción modular y posibilitan así la adaptación a las distintas tareas de medición y lugares de su colocación.

Bag Filter Plants



Kröll develop systems and products for pollution control, for surface treatment in the auto industry, for flue gas and spent air cleaning, for heat recovery and for ventilation and air conditioning applications. In the flue gas cleaning sector Kröll are particularly active as a plant producer. In dealing with flue gas dust separation is one of the most important steps. By converting a conventional electrostatic filter to an up-to-date bag filter facility Kröll have succeeded in reducing pollution emission from 30 g/m³ to less than 30 mg/m³.

KRÖLL Ges. m. b. H. & Co. KG
Luftechnik
 A-6135 Stans
 Industriezone Dornau 20

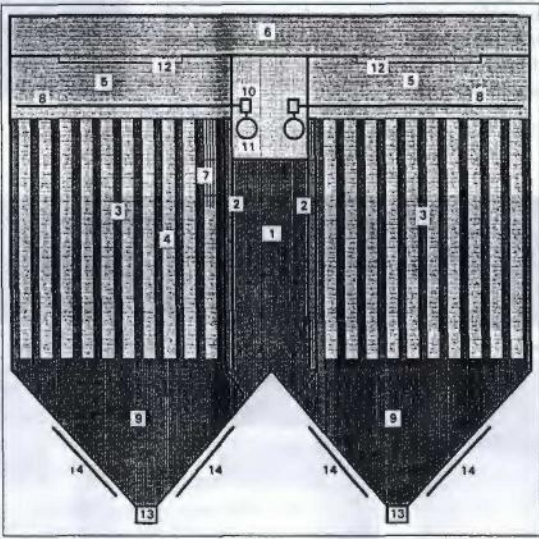
Telefon: +43/5242/635 18
 Telefax: +43/5242/724 67
 ☎: Deutsch, English

Schlauchfilteranlage

Kröll entwickelt Systeme und Produkte für den Umweltschutz, zur Oberflächenbehandlung im Automobilbereich, zur Abgas- und Abluftreinigung, zur Wärmerückgewinnung sowie zur Lüftung und Klimatisierung. Speziell im Bereich der Abgasreinigung ist die Firma Kröll als Anlagenbauer verstärkt tätig. Bei der Problemlösung der Rauchgasreinigung ist der verfahrenstechnische Schritt der Staubabscheidung einer der wichtigsten. Durch den Umbau eines herkömmlichen Elektrofilters auf eine moderne Schlauchfilteranlage ist es Kröll gelungen, den Schadstoffausstoß von 30 g/m³ auf < 30 mg/m³ zu reduzieren.

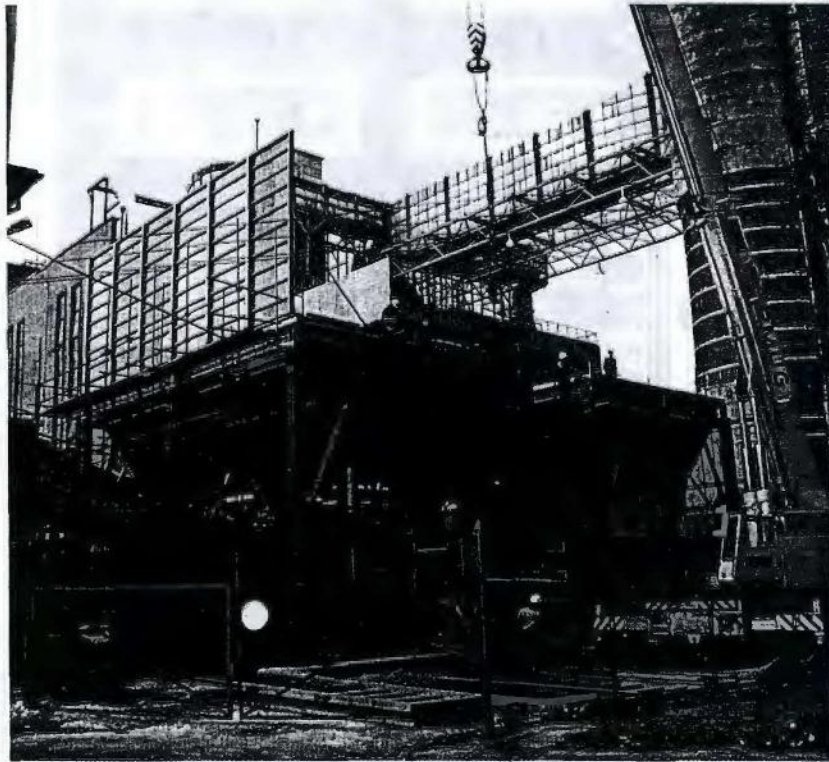
KRÖLL WROCLAW
 Dust Separation Unit ▶

- 1 Waste gas duct
- 2 Preseparator
- 3 Bag chamber
- 4 Filter bag
- 5 Clean gas chamber
- 6 Clean gas duct
- 7 Supporting basket
- 8 Blowpipe
- 9 Dust hopper
- 10 Diaphragm valve
- 11 Compressed air accumulator
- 12 Shutoff valves
- 13 Locks
- 14 Heating



Installation de filtre à manche

Kröll intervient dans les domaines de la protection de l'environnement, du traitement des surfaces dans l'industrie automobile, de l'épuration des gaz usés et de l'air d'évacuation, de la récupération de chaleur ainsi que de l'aération et de la climatisation. Cette société développe en particulier des installations destinées à l'épuration des gaz de fumée, domaine dans lequel le procédé utilisé pour la séparation des poussières est d'une importance décisive. En remplaçant un filtre électrique classique par une installation moderne de filtre à manche, Kröll a pu réduire la sortie de matières polluantes à une valeur inférieure à 30 mg/m³.



Instalaciones de filtro de mangas

Kröll desarrolla sistemas y productos para la protección del medioambiente, para el tratamiento de

superficies en el sector automovilístico, para la depuración de gas de escape y de aire de salida, para la recuperación de calor, así como para la ventilación y climatización. Especialmente en el campo de la depuración de gas de escape la firma Kröll trabaja como acreditada constructora de instalaciones. En la solución de proble-

mas de la depuración de humos el paso técnico de procedimiento de la separación de polvos es uno de los más importantes. Gracias a la transformación de un filtro eléctrico usual en una instalación moderna de filtro de mangas ha logrado Kröll reducir la expulsión de sustancias dañinas de 30 g/m³ a < 30 mg/m³.



Air Pollution Control

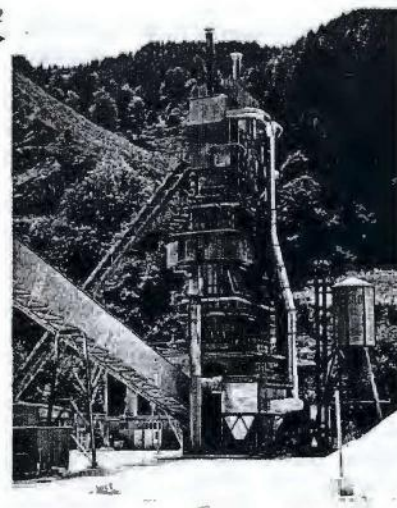
Specialists in air pollution control, the firm Scheuch plans, develops, produces and installs made to measure solutions for such applications as waste air extraction, dust collection, flue gas purification, pollutant absorption and pneumatic conveying. Equipment from Scheuch contributes towards pollution control in the steel industry, in foundries and in the building materials, furniture-making and chip-board industries. A comprehensive range of bag and electrostatic filters, fans, conveying systems, pipelines and controls ensures the optimum solution to almost any problem.

ALOIS SCHEUCH
Gesellschaft m. b. H.

A-4910 Ried im Innkreis
Am Burgfried 14
Telefon: +43/7752/905-0
Telex: 27606
Telefax: +43/7752/905-37
☐ Deutsch, English



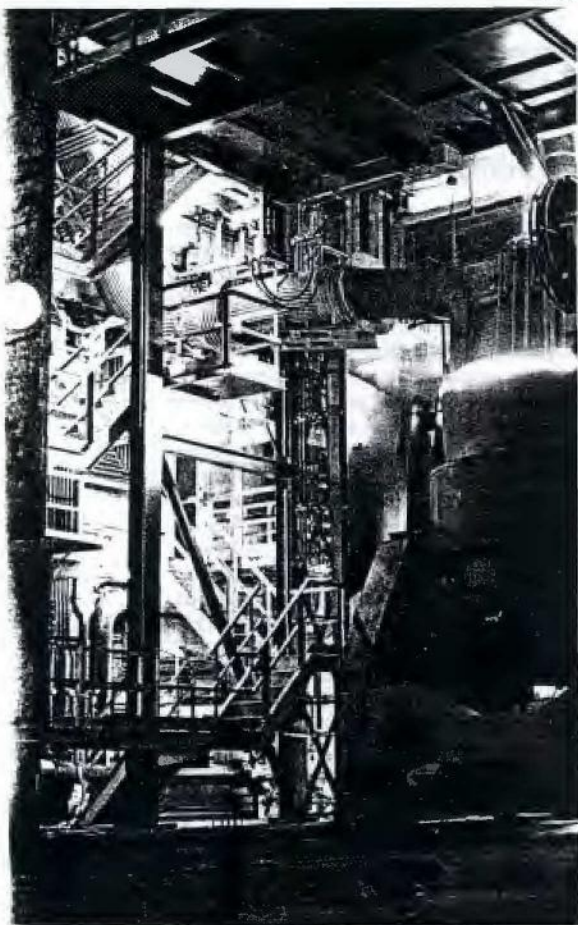
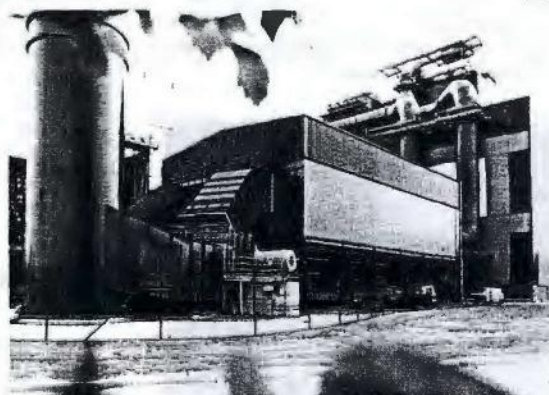
1. Pressure-impact resistant impulse filter for dust removal from grinding machines



2. Dust removal from a limestone shaft furnace

3. Ladle furnace dust removal with water-cooled crude gas pipe line

4. Filter installation for E-furnaces and converters



Luftreinigung

Die Firma Scheuch, eine Spezialfirma für Luftreinigung, plant, entwickelt, produziert und errichtet maßgeschneiderte Lösungen für die Bereiche Absaugung, Entstaubung, Rauchgasreinigung, Schadstoffabscheidung und pneumatische Förderung. Die Anlagen tragen in der Stahlindustrie, Gießerei, Baustoff-, Möbel- und Spanplattenindustrie aktiv zur Reinhaltung der Umwelt bei. Ein umfangreiches Programm an Schlauch- und Elektrofiltern, Ventilatoren, Förderorganen, Rohrleitungen und Steuerungen ermöglicht Problemlösungen für nahezu jeden Bereich.

Décontamination de l'air

Scheuch, société spécialisée dans la décontamination de l'air, conçoit, développe, produit et installe des systèmes sur mesure pour l'aspiration, le dépoussiérage, l'épuration des fumées et l'élimination des matières polluantes, ainsi que des systèmes de manutention pneumatique. Ses installations contribuent à la lutte contre la pollution dans l'industrie

sidérurgique, les fonderies, l'industrie des matériaux de construction, du meuble et des panneaux d'agglomérés. Sa gamme étendue de filtres à manches et filtres électriques, ventilateurs, organes de manutention, tuyauteries et commandes permet à Scheuch de proposer des solutions complètes à peu près dans tous les domaines.

Purificación del aire

La empresa Scheuch, una firma que se ha especializado en el campo de la purificación del aire, proyecta, desarrolla, produce y monta soluciones hechas a medida para los campos de aspiración, despolverización, purificación de gases de humo, separación de materias nocivas y transporte neumático. Las instalaciones contribuyen activamente a la purificación del medioambiente en la industria de acero, en la de fundería, en la industria de material de construcción, de muebles y de planchas de virutas. Un vasto programa de filtros de mangas y filtros eléctricos de ventiladores, de implementos de transporte, de tuberías y de mandos posibilita las soluciones de problemas para casi todos los sectores.

Biofilters

ÖMV AG operate Austria's only large refinery – in Schwechat near Vienna. Thanks to many years of experience and research in the waste gas sector a team of specialists has been able to develop a new biofiltering system with convincing facts in its favour: activity retention over longer periods of disuse; high filtering efficiency even with vaporous pollutants; constant pressure loss; outstanding filtering effect for odorous substances, polar substances, carbohydrates and cancerogenous and toxic substances; almost 100% efficiency for diluted substances. Even at high pollutant concentrations the ÖMV filter material, of novel composition, guarantees the fourfold performance of conventional systems. Apart from the planning and design of the bioreactor and biofilter and the delivery of the filter compound ÖMV offer all waste gas plant builders special services (pre-design, on-spot analysis, basic engineering, project management, after-sales services and servicing).

ÖMV
Aktiengesellschaft
F & E Marketing

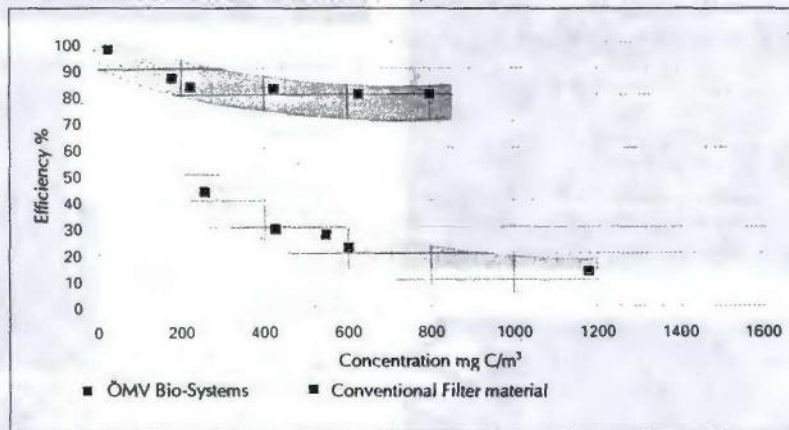
A-2320 Schwechat
Mannswörther Strasse 28
P. O. B. 75
Telefon: +43/1/701 99-2611
Telefax: +43/1/701 99-2120
Deutsch, English

Biofilter

Die ÖMV AG betreibt in Wien/Schwechat die einzige Großraffinerie Österreichs. Ein Spezialistenteam hat aus vielen Jahren Praxis und Forschung der Abluftproblematik ein neues Biofiltersystem mit überzeugenden Leistungsmerkmalen entwickelt: Aktivitätsbewahrung auch bei längerem Stillstand; hohe Filterleistung auch bei dampfförmigen Schadstoffen; konstanter Druckverlust; exzellente Filterleistung bei Geruchsstoffen, polaren Stoffen, Kohlenwasserstoffen, kanzerogenen und toxischen Stoffen; Wirkungsgrad bei verdünnten Stoffen nahe 100%. Auch bei hohen Konzentrationen bietet das ÖMV Filtermaterial durch seine neuartige Zusammensetzung die vierfache Leistung bisher angebotener Systeme. Neben der Planung und Auslegung des Bioreaktors oder Biofilters und der Lieferung der Filtermasse bietet die ÖMV auf dem Gebiet der Abluftreinigung allen Anlagenbauern Spezialdienstleistungen (Pre-Design, Analyse beim Kunden, Basic Engineering, Projektbetreuung, Nachbetreuung und Service) an.



An ÖMV biofilter and a conventional filter. A comparison ▼



Biofiltre

La société ÖMV possède à Schwechat la seule grosse raffinerie d'Autriche. Après de longues années d'essais et de recherches sur les problèmes de l'air d'évacuation, une cellule de spécialistes vient de mettre au point un système de biofiltres aux performances convaincantes: maintien en activité même après un arrêt prolongé; importante capacité de filtrage même pour les polluants se présentant sous forme de vapeur; perte manométrique constante; excellente capacité de filtrage pour les matières odorantes, les matières polaires, les hydrocarbures, les produits toxiques et cancérigènes; efficacité de près de 100% pour les produits dilués. Grâce à sa composition originale, le nouveau filtre d'ÖMV est quatre fois plus puissant que les systèmes existant actuellement, et ceci même pour les fortes concentrations. ÖMV qui assure l'étude et la conception du bioreacteur ou du biofiltre ainsi que la fourniture de la masse filtrante, met également des prestations spéciales (avant-projets, analyses sur le site, ingénierie de base, gestion des projets, suivi des installations et service après-vente) à la disposition de tous les constructeurs d'installations d'épuration de l'air d'évacuation.

Biofiltros

La ÖMV AG. tiene en Viena/Schwechat la única refinería grande de Austria. Un grupo de especialistas ha desarrollado, después de muchos años de práctica e investigación de la problemática del aire de salida, un nuevo sistema de biofiltro con características convincentes de rendimiento: conservación de su funcionamiento incluso en caso de un paro más largo; alto rendimiento de filtraje en caso de materias dañinas en forma de vapor; pérdida constante de presión; excelente rendimiento de filtraje en caso de materias fetidas, materias polares, hidrocarburos, materias cancerógenas y tóxicas; casi 100% de rendimiento en materias diluidas. También en concentraciones altas ofrece el material del filtraje de ÖMV, gracias a su nueva composición, el rendimiento cuádruple de los sistemas hasta ahora ofrecidos. A más del planeamiento y concepción del bio-reactor o biofiltros y del suministro de la masa filtrante, ofrece ÖMV a todos los constructores de instalaciones en el sector de la purificación del aire de salida, prestaciones especiales (prediseño, análisis en el lugar del cliente, basic engineering, asesoramiento y asistencia en el proyecto, asesoramiento posterior y service).





Mobile Multichannel Gas Analysis System

With a new high-level waste gas and process monitoring technique V & F are making an important contribution to air pollution control. The CI-MS 500 Multicomponent Gas Analyzer System is a fully automated mobile real-time analyser characterised by instant readiness for operation, universal use and maximum sensitivity through high-vacuum technology.

Exports go mainly to Common Market countries, Sweden, Switzerland, the USA and Canada, especially for the auto, cement and steel industries. Waste incinerators and environmental offices account for 80% of sales.

V & F
Analyse- und Meßtechnik
Gesellschaft m. b. H.

A-6067 Absam
Andreas-Hofer-Strasse 15
Telefon: +43/5223/314 05
Telefax: +43/5223/451 70
Deutsch, English

Mobiles Vielkanal-Gas-analyse-System

V& F leistet mit hochwertiger Meßtechnik einen wesentlichen Beitrag zur Luftreinhaltung durch Abgas- und Prozeßkontrolle. Das CI-MS 500 Mehrkomponenten-Gas-Analysesystem ist ein voll automatisierter, mobiler Echtzeit-Analysator, charakterisiert durch schnelle

Betriebsbereitschaft, einfache Bedienung, universelle Einsetzbarkeit sowie höchste Empfindlichkeit und Dynamik durch Hochvakuumtechnologie.

Exportiert wird vor allem in die EG-Länder, nach Schweden, in die Schweiz, USA und Canada, speziell an die Auto-, Zement- und Stahlindustrie. Müllverbrennungsanlagen und Umweltbehörden bilden mit 80% den Hauptanteil am Geschäftsumsatz.



◀ CI-MS 500 Mobile multi-channel gas analysis system

▲ CI-MS 500 in operation

Système mobile d'analyse des gaz à plusieurs canaux

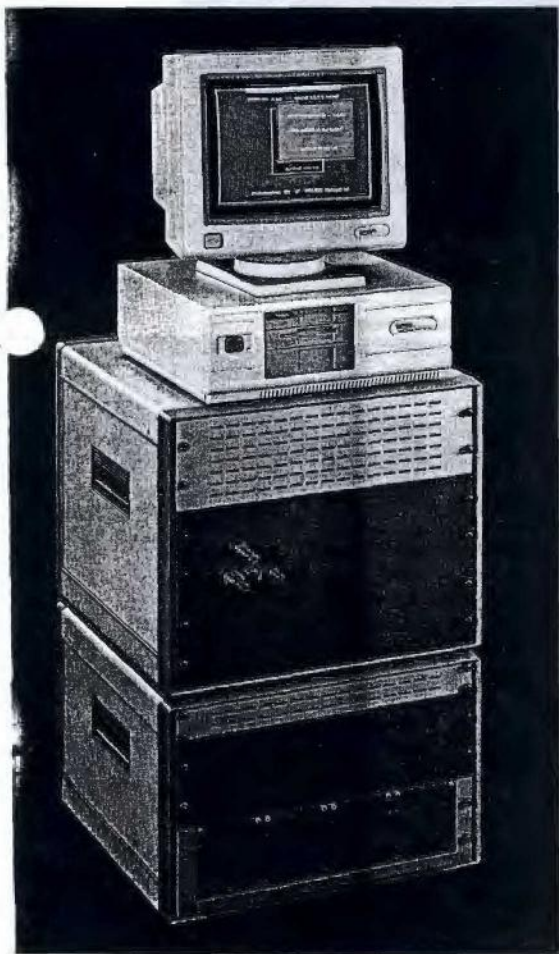
Avec ses systèmes de mesure élaborés, V&F apporte une importante contribution à la lutte contre la pollution de l'air par les gaz d'échappement et l'industrie. Son système mobile d'analyse des gaz à plusieurs éléments CI-MS 500 est un analyseur mobile en temps réel entièrement automatisé caractérisé par sa simplicité d'utilisation ainsi que par un fonctionnement instantané, ses applications universelles, une extrême sensibilité et son dynamisme dû à la technique du vide poussé.

V&F exporte principalement à destination des pays de la C.E., en Suède, en Suisse, aux Etats-Unis et au Canada, ses clients se recrutant en particulier dans l'industrie automobile, l'industrie sidérurgique et l'industrie du ciment. Les appareils vendus aux usines d'incinération des ordures et aux services de protection de l'environnement représentent 80% de son chiffre d'affaires.

Sistema móvil multicanal de análisis de gases

V& F ofrece con su técnica de medición, de alta calidad, un aporte esencial a la purificación de aire mediante control de gases de escape y de procedimientos. El sistema CI-MS 500 de análisis de gas de varios componentes es un analizador de tiempo real completamente automático, móvil, caracterizado por su rápida disponibilidad de servicio, manejo sencillo, empleo universal, así como por su máxima sensibilidad y dinámica por tecnología de alto vacío.

Se exporta sobre todo a los países de la UE, a Suecia, a Suiza, EE. UU. y Canadá, especialmente a la industria del automóvil, de cemento y de acero. Las instalaciones de incineración de basuras y autoridades del medioambiente cubren en un 80% la parte principal de la cifra de ventas de la empresa.



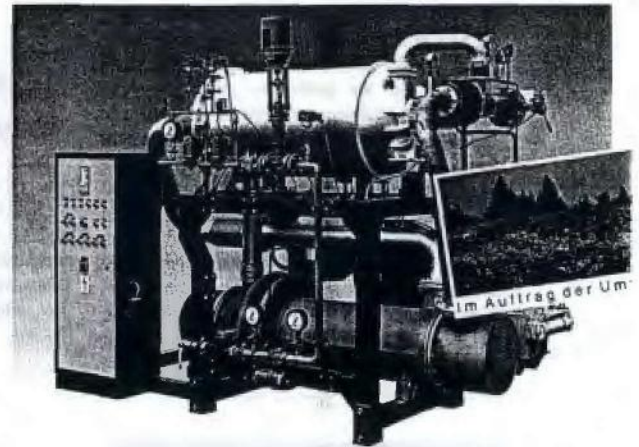
Thermal Postcombustion Units



Thermal postcombustion units from the Leobersdorfer Maschinenfabrik AG ensure the effective removal of noxious pollutants, whether gaseous, liquid or solid, from industrial waste gas. Emission values are kept well within TA Lift Limits. The pollutant-laden waste gas is mixed with the fuel immediately at the multiturbo burner itself, in concentrically arranged, ring-shaped canals in which the direction of rotation is constantly altered, thus ensuring thorough blending. As the pollutant is transported directly through the flame front, the reaction can take place at lower temperatures than in conventional combustion chambers. The smaller quantity of fuel required reduces operating costs.

LEOBERSDORFER MASCHINENFABRIK AG

A-2544 Leobersdorf
Südbahnstraße 28
Telefon: +43/2256/2111-0
Telex: 14444 lmf
Telefax: +43/2256/2150
☐ Deutsch, English, Français



Thermische Nachverbrennungsanlagen

Thermische Nachverbrennungsanlagen der Firma Leobersdorfer Maschinenfabrik AG können zuverlässig umweltbelastende gasförmige, flüssige und feste Schadstoffe entsorgen. Emissionsgrenzwerte nach TA-Luft werden sicher eingehalten. Die Vermischung des Schadgases mit dem Brennstoff erfolgt unmittelbar im Multiturbo-Brenner. Der Mischvorgang wird in konzentrisch angeordneten ringförmigen Kanälen mit wechselseitig entgegengesetztem Drall eingeleitet und bewirkt eine intensive Durchmischung der Reaktionspartner. Da der Schadstoff direkt und vollständig gemischt durch die Flammenfront geführt wird, läuft die Reaktion bei geringeren Temperaturen als bei herkömmlichen Brennkammern üblich, ab. Die sinkende Brennstoffmenge spart Betriebskosten.

Multiturbo gas-and-pressure burner ▼



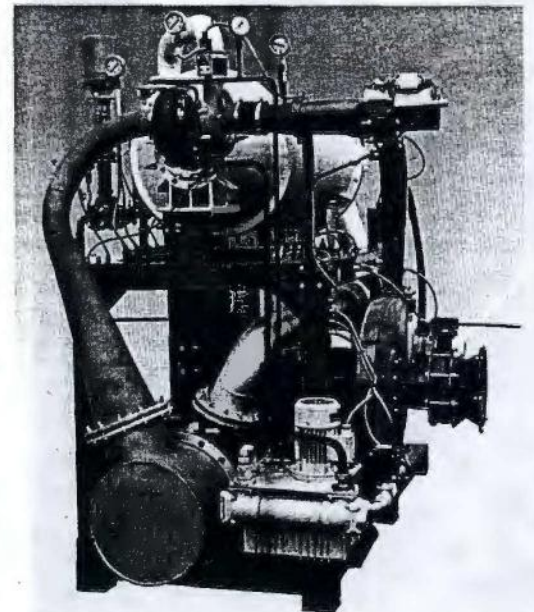
Unités de post-combustion thermique

Les unités de post-combustion thermique de la Leobersdorfer Maschinenfabrik AG permettent d'éliminer efficacement les polluants nocifs liquides, gazeux ou solides des gaz d'échappement industriels. Les limites d'émission indiquées par la directive pour la prévention de la pollution sont rigoureusement observées. Le gaz contaminé de polluants est mélangé au combustible directement dans le multiturbo-brûleur, dans des canaux circulaires à disposition concentrique dans lesquels la direction de rotation est constamment alternée pour obtenir un mélange intime. Ce mélange passe ensuite directement à travers le front des flammes, ceci permettant une réaction à une température plus basse que celle qui est possible dans les chambres de combustion conventionnelles. L'économie de combustible ainsi obtenue rend possible une réduction correspondante au niveau des coûts d'opération.

Instalaciones térmicas de recombustión

Las instalaciones térmicas de recombustión de la firma Leobersdorfer, pueden eliminar de manera segura, materias dañinas gaseiformes, líquidas y sólidas que cargan el medioambiente. Los valores límites de emisión según TA-Luft se observan absolutamente. La mezcla del gas dañino con el combustible se hace inmediatamente en el quemador multiturbo. El proceso de mezcla se inicia en canales circulares, dispuestos concéntricamente, con torsión mutuamente opuesta produciendo una mezcla intensa de los reaccionantes entre sí. Como la materia dañina se conduce por las llamas directa y completamente mezclada, se desenvuelve la reacción a temperaturas más bajas de las que se tienen en las cámaras convencionales de combustión. La siempre reducida cantidad de combustible ahorra costes de servicio.

▼ Thermal postcombustion unit.



Metrology for Environmental Meteorology

The lineup of the firm Kroneis includes measuring instruments for environmental meteorology. e. g. wind sensors, precipitation gauges, dewpoint sensors and humidity and temperature sensors. A newcomer is the WADOS, a sampling device for dry and wet precipitation, for collecting acid rain and snow and dust deposits for subsequent chemical analysis. WADOS conforms to the sampling requirements of the OECD and the WMO for "Wet only precipitation sampling" and of ISO for "Atmospheric dustfall sampling" and can be fitted with a tipping bucket precipitation gauge and an automatic sampler with 20 x 1 litre bottles.

Dipl. Ing. A. u. W. KRONEIS
Werkst. f. Meßgeräte der Fein- u.
Elektromechanik Ges. m. b. H.

A-1190 Wien
Iglaseegasse 30-32
Telefon: +43/1/32 34 92
Telefax: +43/1/32 66 04
☐ Deutsch, English

Meßtechnik für Umweltmeteorologie

Meißgeräte für die Umweltmeteorologie, wie z. B. Windmesser, Niederschlagsmeßgeräte, Taupunktspiegel, Feuchte- und Temperatursensoren,

gehören zum Erzeugungsprogramm von Kroneis. Eine Neuentwicklung ist WADOS, ein Probenahmegerät für trockene und nasse Deposition, zur Sammlung von saurem Regen und Schnee sowie dem Staubfall für die nachfolgende chemische Analyse. WADOS entspricht den Probenahmempfehlungen der OECD und der WMO für

WADOS Wet And Dry Only Precipitation Sampler ▼



„Wet only precipitation sampling“ sowie der ISO für „Atmospheric dustfall sampling“ und ist mit einem Wippensystem zur zeitlichen Erfassung ausrüstbar, sowie mit einem Probenwechsler mit 20 x 1 l Flaschen kombinierbar.

Instruments météorologiques pour le contrôle de l'environnement

Kroneis est spécialisé dans les instruments de mesure météorologique pour le contrôle de l'environnement tels que: anémomètres, appareils de mesure des précipitations, systèmes à miroir pour la mesure du point de condensation, capteurs de température et d'humidité. Il a sorti récemment un nouvel appareil de prélèvement d'échantillons secs ou humides, WADOS, destiné à la collecte d'échantillons de neige ou pluie acide ainsi que de poussières en vue de l'analyse chimique. WADOS est conforme aux recommandations de l'OCDE et de la WMO concernant le "prélèvement d'échantillons de précipitations humides" ainsi que celles de l'ISO relatives au "prélèvement d'échantillons de poussières atmosphériques"; il peut être équipé d'un système à bascule pour la mesure du temps et combiné avec un changeur d'échantillons pour 20 bouteilles d'un litre.

Técnica de medición para la meteorología del medioambiente

Los aparatos de medición para la meteorología del medioambiente, como por ej. los anemómetros, aparatos de medición de precipitación, espejo de punto de descongelación, sensores de humedad y de temperatura, forman parte del programa de producción de Kroneis. Un desarrollo nuevo es el WADOS, aparato de toma de muestras de asentamientos secos y húmedos, para recoger lluvia ácida, nieve y caída de polvo para el posterior análisis químico. El WADOS corresponde a las recomendaciones de toma de muestras de la OECD y de la WMO para „Wetonly precipitation sampling“, así como a las recomendaciones del ISO para „Atmospheric dustfall sampling“ y se puede equipar con un sistema basculante para el registro temporal y se puede combinar con un cambiador de pruebas de 20 botellas de 1 litro (20 x 1 l).

Air Cleaning Systems



For more than 80 years Heimpel & Besler have been active in pollution control, producing dust collectors, pulse jet bag filters, sintered lamellar filters, wet dust separators, cyclone separators, industrial fans and spray-painting and drying boxes. Intended for cleaning air and gases and for disposing of pollutants and waste, these products are used in every branch of industry. They are being continually improved and can guarantee a dust removal efficiency of 99.9% – thanks to the use of the sintered lamellar filter, a new filter medium in the form of Teflon-coated polyethylene.

Lufttechnische Anlagen

Heimpel & Besler ist seit mehr als 80 Jahren auf dem Gebiet des Umweltschutzes tätig und erzeugt Entstaubungsanlagen – Luftfilteranlagen – Sinterlamellenfilter – Nassstauber – Industrieventilatoren – Farbspritz- und Trockenanlagen. Sie dienen zur Reinigung von Luft und Gasen sowie zur Entsorgung von Schad- und Abfallstoffen und werden in allen Industriezweigen eingesetzt. Diese Anlagen werden ständig weiterentwickelt und erreichen Entstaubungsgrade von 99,99%, verwirklicht durch ein Sinterlamellenfilter, ein neues Filtermedium, das aus gesintertem Polyäthylen mit Teflonbeschichtung besteht.

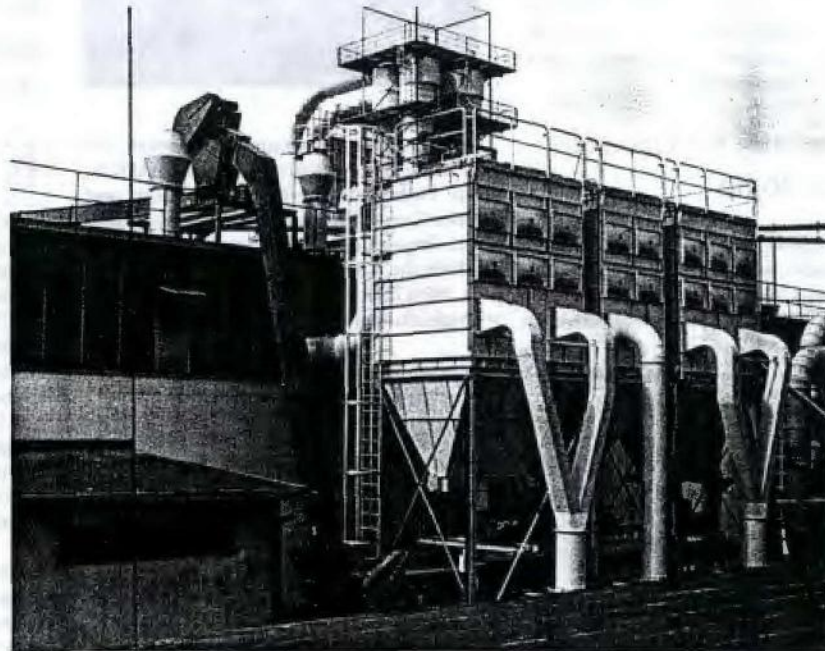
Instalaciones aerotécnicas

La Heimpel U. Besler trabaja, desde hace más de 80 años, en el sector de la protección del medioambiente y produce plantas despolvoradoras, ciclones, instalaciones filtradoras del aire, filtros de laminitas sinterizadas, despolvoradores húmedos, ventiladores industriales, instalaciones de pintura al duco y plantas secadoras. Estas plantas e instalaciones sirven para la limpieza del aire y gases, así como para la eliminación de materiales dañinos y de desecho. Alcanzan grados de despolvorización de 99,9%, gracias a su filtro de laminitas sinterizadas, un nuevo elemento de filtro de polietileno sinterizado con capa de teflón.

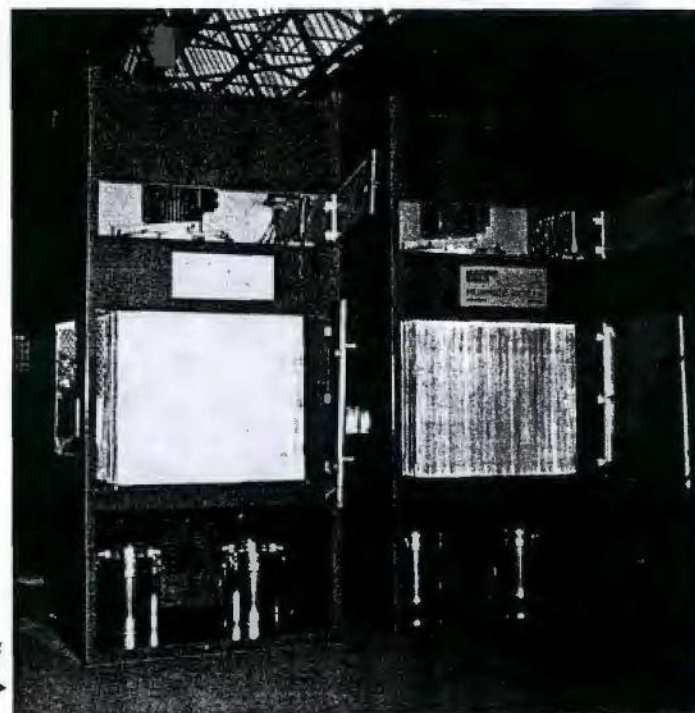
Installations d'épuration de l'air

La société Heimpel & Besler qui travaille depuis plus de 80 ans dans le secteur de la protection de l'environnement, fabrique des installations de dépoussiérage, des cyclones, des installations de filtrage de l'air, des filtres à lamelles frittées, des dépoussiéreurs à voie humide,

des ventilateurs industriels ainsi que des cabines de peinture et de séchage. Ces équipements qui servent à l'épuration de l'air et des gaz ainsi qu'à l'évacuation des matières polluantes et des déchets sont utilisés dans toutes les branches de l'industrie. Ils permettent d'obtenir un taux de dépoussiérage de 99,99% et ceci, grâce à un nouveau filtre à lamelles en polyéthylène fritté revêtu de Teflon.



BHF heavy-duty fibrous filter with pulse jet cleaning for chipboard industry ▲

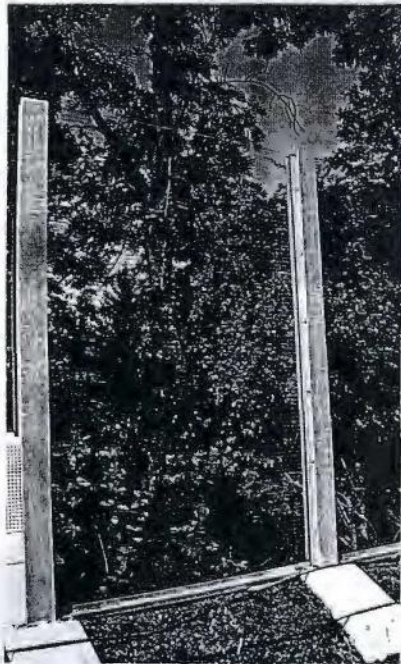


"Sinter-Star" sinter lamellar filters showing filter lamellae ▶

HEIMPEL & BESLER
Ventilatoren- u. Maschinenfabrik Ges. m. b. H.

A-1233 Wien
Scherbaggasse 20
Telefon: +43/1/816 92-0
Telefax: +43/1/816 92-11
☐ Deutsch, English

Noise Protection Walls



Para-Chemie are the only Austrian producer of cast acrylic glass. Two types in the lineup are Paraglas LS and LS-CC2, splinterproof through built-in polyamide fibres and thus suitable for noise protection walls, in particular along motorways, highways and other noisy transport facilities. The product conforms to the requirements of ZTV-LSW 88. Many such walls have been installed in Austria, Germany, the Netherlands, Italy, Switzerland, Hong Kong, Taiwan and Japan. Paraglas LS and LS-CC2 can be returned after use for full recycling.

1 Example of application - Paraglas LS-CC2

2 Example of application - Paraglas LS

3 Example of application - Paraglas LS-CC2

PARA-CHEMIE
Zweigniederlassung der Degussa
Austria Ges. m. b. H.

A-2440 Gramatneusiedl
Hauptstraße 53
Telefon: +43/2234/722 41-43
Telex: 131959 parag a
Telefax: +43/2234/722 415
☐ Deutsch, English



Lärmschutzwände

Die Para-Chemie ist der einzige österreichische Erzeuger von gegossenem Acrylglas. Teil der Produktpalette sind Paraglas LS und LS-CC2 mit integrierter Splitterbindung, welche für transparente Lärmschutzwände, vornehmlich an Autobahnen, Schnellstraßen und sonstigen lärmbelastenden Verkehrsanlagen in Außenbereichen Verwendung finden. Entsprechende Forderungen gemäß ZTV-LSW 88 werden erfüllt. Viele Referenzobjekte befinden sich in Österreich, Deutschland, Niederlande, Italien, Schweiz, Hongkong, Taiwan und Japan. Paraglas LS und LS-CC2 werden nach Nutzungsende zurückgenommen und vollständig wiederverwertet.

Ecrans antibruit

Para-chemie, le seul fabricant autrichien de verre acrylique coulé, produit entre autres le Paraglas LS et LS-CC2, à système anti-fragmentation intégré consistant en fils de polyamide coulés dans la masse. Ces produits qui répondent aux exigences de la norme allemande ZTV-LSW 88, sont utilisés pour la construction d'écrans antibruits transparents, implantés principalement le long des autoroutes, des voies à grande circulation et autres aires de circulation où le bruit est cause de nuisances. On trouve de nombreuses installations de référence en Autriche, en Allemagne, aux Pays-Bas, en Italie, en Suisse, à Hongkong, à Taïwan et au Japon. Après utilisation, ces produits sont repris par l'usine et entièrement recyclés.

Paredes protectoras contra ruidos

La Para-Chemie es el único productor austríaco de acrilglás fundido. Una parte de la paleta de producción son el paraglás LS y el LS-CC2 con ligazón integrada de fragmentos a emplearse en paredes transparentes protectoras contra ruidos, sobre todo en autopistas, carreteras de circulación rápida y demás instalaciones de tráfico de zonas exteriores. Se cumple con las correspondientes exigencias según ZTV-LSW 88. Muchas obras de referencia se encuentran en Austria, Alemania, Países Bajos, Italia, Suiza, Hongkong, Taiwan y Japón. El paraglás LS y el LS-CC2 son recuperables después de acabar su utilización reciclándose los completamente.

Resilient Polyurethane Materials



Sylomer®, from Getzner, is a resilient polyurethane material intended for vibration control. The versatile new material can be precisely calculated re. static and dynamic behaviour and thus adapted to individual requirements. The wide range of volume-compressible and easy-to-machine Sylomer® materials are used:

- In railway track construction as resilient pads, adaptable to any axle load, as bases for track slabs or sub-ballast mats.
- In building construction and civil engineering for the active and passive insulation of machine vibrations or for large-area noise protection.
- In industry as parts for machines and equipment accurately made to customers' specifications.

Elastische Polyurethan-Werkstoffe

Sylomer® von Getzner ist ein elastischer Polyurethan-Werkstoff zur Schwingungsisolierung. Der vielseitige Werkstoff Sylomer® ist exakt berechenbar und kann individuell angepaßt werden. Die große Produktfamilie des volumenkompressiblen und leicht zu bearbeitenden Werkstoffes wird eingesetzt:

- im Eisenbahnoberbau als Unterschottermatte, die an jede Achslast angepaßt werden kann, als elastische Zwischenlage oder als Lager für Fahrbahnplatten;
- im Hoch- und Tiefbau als aktive oder passive Isolierung von Maschinenschwingungen bzw. als vollflächige Abschirmung von Gebäuden gegen Erschütterungen;
- in der Industrie in Form von Bauteilen für Maschinen und Geräte - genau angepaßt an die Kundenspezifikation.

Elastomères polyuréthane

Sylomer® de Getzner est un élastomère polyuréthane utilisé pour l'amortissement des vibrations. Ce nouveau matériau aux possibilités infinies permet des calculs précis et s'adapte à tous les besoins. La grande famille de produits obtenus avec ce matériau compressible et facile à mettre en œuvre trouve ses applications notamment dans les domaines suivants:

- superstructures de voies ferrées: matelas sous ballast pouvant être adaptés à la charge par essieu; suspension élastique de grande surface pour dalles de chaussée;
- génie civil: isolement actif ou passif à l'égard des vibrations des machines;

matelas sous fondations pour protéger les bâtiments des vibrations extérieures;

- industrie: pièces finies ou semi-finies pour machines et appareils - répondant avec précision aux spécifications du client.

Materias primas elásticas de poliuretano

Sylomer® de Getzner es un material elástico a base de poliuretano que se emplea para amortiguar vibraciones. El material de uso universal Sylomer® es exactamente calculable y puede ajustarse individualmente. La gran familia de productos de este material comprimible y de fácil manipulación y trabajo se emplea en:

- la construcción de vías férreas como capa de asiento de balasto, susceptible de adaptarse a todo tipo de carga de eje, como capa de asiento intermedia, o como base de losas de vía
- obras de ingeniería civil como material aislante, pasivo o activo, de vibraciones de máquinas y también como capa de aislamiento contra vibraciones para edificaciones
- la industria, en forma de piezas estructurales para máquinas y equipos exactamente adaptadas a las necesidades y especificaciones del cliente.

GETZNER CHEMIE Ges. m. b. H.
A-6700 Bludenz-Bürs
Herrenau 5
Telefon: +43/5552/63310
Telefax: +43/5552/668 64
Deutsch, English, Français,
Español, Italiano

Sylomer® materials from Getzner for vibration insulation and protection ▼



▼ Laying Sylomer® sub-ballast mats on a high-speed railway bridge

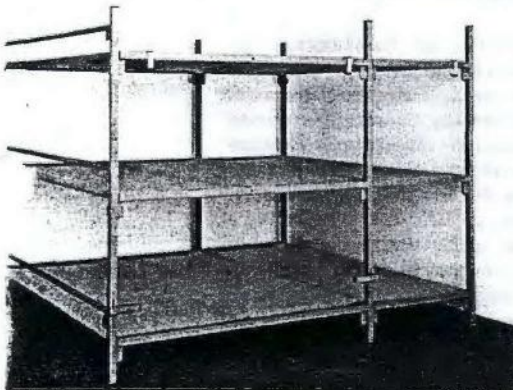




Shelters

Schutzraumtechnik Krenn are a long-established company specialised in the consultation, planning and installation of shelters. The company is a competent supplier of shelters of every type and protective class, from the smallest basic shelter for single-family homes to large-capacity shelters for public buildings. Krenn are also experienced shelter outfitters and provide various components (doors, sliding partitions, pipes, etc.), technical equipment (ventilation devices, gas filters, etc.) and furniture (bunks, seating, standby generating sets, etc.)

▼ 9-person shelter



SCHUTZRAUMTECHNIK KRENN

A-8330 Feldbach
Edersgraben 45
Telefon: +43/3152/4516
Telefax: +43/3152/5390
☒ Deutsch, English

Schutzräume

Schutzraumtechnik Krenn ist ein langjährig erfahrener Fachbetrieb für die Beratung, Planung und Errichtung von Schutzräumen. Vom kleinsten Grundschutzraum für Einfamilienhäuser bis zu großen Anlagen öffentlicher Bauträger jeder Art und Schutzklasse ist die Firma Krenn der kompetente Partner. Als Schutzraumkomplettausstatter bietet Krenn sämtliche Einbauteile (Türen, Schiebewände, Rohre usw.), technische Ausrüstung (Lüftungsgeräte, Gasfilter usw.) sowie Einrichtungen (Liegen, Sitze, Notstrom usw.) an.

Abris

Sa longue expérience de l'étude et de la construction d'abris fait de Schutzraumtechnik Krenn le partenaire compétent pour la réalisation d'abris de tous types et toutes catégories de protection, du petit abri de base pour maison individuelle jusqu'aux équipements importants pour immeubles administratifs. Krenn fournit l'équipement complet comprenant: éléments de construction (portes, cloisons amovibles, tuyauterie, etc.), appareils techniques (aération, filtres à gaz, etc.) et mobilier (couchettes, sièges, groupe électrogène, etc.).

Refugios

Schutzraumtechnik Krenn es una empresa especializada en el asesoramiento, planeamiento y erección de refugios. Tiene muchos años de experiencia en el ramo. Desde el más pequeño refugio de subsuelo de casas familiares hasta las más grandes instalaciones de refugio de los constructores estatales, de todo tipo y clase de protección, la firma Krenn presenta la oferta más competente. Como equipador completo de refugios Krenn ofrece todas las piezas de empotrado (puertas, paredes, corredizas, tubos, etc.), equipos técnicos (aparatos de ventilación, filtros de gas, etc.), así como equipamientos (camas plegables, sillas, instalaciones eléctricas de emergencia, etc.).



Radiation Measurement

RVR have developed a portable precision instrument – the MSI-Hpw-01 measures ionising radiation over a range of 500 nR to 10 kR with an accuracy of 0.5%. An integral notebook computer with specially designed software offers easy menu selection. Contained in a handy briefcase, the device can be battery powered on outdoor assignments or from the mains when in the lab. Applications include hospitals (e. g. radiation therapy), calibrating labs and dosimetry.

Strahlenmeßgerät

Ein tragbares Präzisionsgerät zur Messung ionisierender Strahlung – MSI-Hpw 01 – wurde von RVR entwickelt. MSI-Hpw 01 liest über die dazugehörigen Ionisierungskammern ionisierende Strahlung im Bereich 500 nR bis zu

10 kR mit einer Genauigkeit von 0,5%. Ein integrierter Note-Book-Computer bietet über eine speziell entwickelte Software eine komfortable Menüführung. Das System ist kompakt und fest in einem Aktenkoffer untergebracht. Das Gerät kann über Akkus an jedem beliebigen Meßort oder über Netz im Labor betrieben werden. Einsatzgebiete sind Krankenhäuser (z. B. Strahlentherapie), Eichlabors und die Dosimetrie.

Appareil de mesure du rayonnement

Le MSI-Hpw 01 est un appareil de précision portatif développé par RVR, permettant de mesurer les radiations ionisantes avec une précision de 0,5 % sur une plage de 500 nR à 10 kR, au moyen des chambres d'ionisation correspondantes. Un ordinateur (Note-Book), incorporé et un logiciel développé spécialement pour cet appareil permettent de le programmer facilement à l'aide d'un menu. Ce système compact est installé dans une malette. Il peut fonctionner sur accus, pour utilisation sur le site, ou sur le secteur pour utilisation en laboratoire. Ses princi-

RVR ROHSTOFF-VERWERTUNG und -RECYCLING Ges. m. b. H.

A-1230 Wien
Gastgebasse 27
Telefon: +43/1/865 23 70
Telefax: +43/1/865 237 022
☒ Deutsch, English

paux domaines d'utilisation sont les hôpitaux (radiothérapie), les laboratoires d'étalonnage et la dosimétrie.

Aparatos de mediciones radiológicas

RVR ha desarrollado un aparato portátil de precisión para la medición de la radiación ionizante: el MSI-Hpw 01. El MSI-Hpw 01 lee, por las cámaras correspondientes de ionización, la radiación ionizante en un ámbito de 500 nR hasta 10 kR con una exactitud de 0,5%. Un ordenador integrado note-book ofrece un fácil y confortable menú gracias al especialmente desarrollado software. El aparato es compacto. Está fijamente colocado en un maletín. El aparato puede trabajar a batería en cualquier lugar de medición o conectado a la red en el laboratorio. Sus campos de empleo son hospitales (por terapia de rayos), laboratorios de graduación o calibración y dosimetría.

VR MSI/Hpw 01 ►
Portable Precision Instrument for measuring ionising radiation



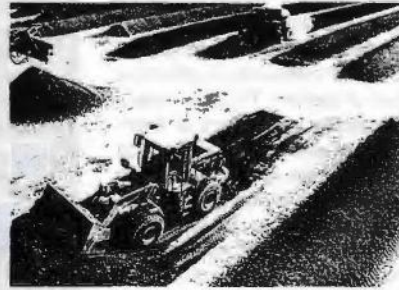
Sewage Sludge Humification



The humification process developed by ÖKO Datenservice Ges.m.b.H turns sewage sludge into humus. Intensive lab analysis work and special computer software produce micro-biological, biochemical and physico-chemical conversion processes that result in a poly-disperse system comparable with natural soil. It is fully hygienised and performs all the functions of natural soil. There is thus no more need for dumping.

**ÖKO-Datenservice
Ges. m. b. H.**

A-1190 Wien
Budinskygasse 18
Telefon: +43/1/368 15 13
Telefax: +43/1/368 914 87
☐ Deutsch, English, Español



Klärschlammvererdung

Das Vererdungsverfahren der ÖKO-Datenservice Ges. m. b. H. wandelt Klärschlamm in Huminstoffe um. Durch intensive laboranalytische Prüfung und spezielle Computersoftware werden reaktionsfähige Stoffe so zusammengeführt, daß nach mikrobiologischen, biochemischen und physikochemischen Umsetzungsprozessen ein dem natürlichen Boden vergleichbare polydisperses System entsteht. Es ist voll hygienisiert und kann alle Funktionen natürlicher Böden übernehmen. Es sind dadurch keine Deponien mehr nötig.

Humification des boues de curage

ÖKO-Datenservice dispose d'un procédé de transformation des boues de curage en produits humifères. Sur la base d'analyses de laboratoire poussées, pour lesquelles a été développé un logiciel spécial, les matières réactives sont combinées de façon à obtenir un système polydispersé dont les propriétés microbiologiques, biochimiques et physicochimiques sont comparables à celles d'un terrain naturel. Entièrement hygiénisé, il peut assumer toutes les fonctions du sol naturel. On n'a donc plus besoin de déposer ces boues sur des décharges.

Humificación del fango de clarificación

El proceso de humificación del ÖKO-Datenservice GesmbH. transforma el fango de clarificación en materias húmicas. Gracias a un intenso control analítico de laboratorio y software especial de computadora se reúnen materias reactivas de tal manera que se produce un sistema polidisperso comparable al suelo natural, según procesos microbiológicos, bioquímicos y fisicoquímicos de conversión. Es completamente higienizado y puede hacerse cargo de todas las funciones de los suelos naturales. Gracias a esto no se necesitan más los depósitos.

Lacquer Recycling Systems Sistema recuperador de barnices



The firm Planet has come up with a system with which the overspray unavoidable during paint spraying can be reclaimed and, in most cases, returned directly to the spraying process. Solutions can be provided for practically every industrial or workshop application, whether manual or automatic. Production is focussed mainly on the already proven sectors: retrofitting of every type of automatic large-area spraying unit, hand-spraying stands with flexible workpiece support, window and door production, furniture and chair production, special applications.

Lackrückgewinnungssystem

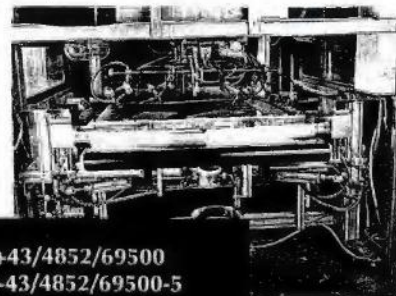
Der Firma Planet ist es gelungen, ein System zu entwickeln, den bei Lack-Spritzvorgängen unvermeidbaren Overspray wieder rückzugewinnen und in den meisten Fällen direkt einer Wiederverwertung zuzuführen. So werden u. a. Lösungen für nahezu alle Anwendungsfälle in Industrie und Gewerbe, im manuellen und automatisierten Bereich, angeboten. Schwerpunkte bilden die bereits erprobten Bereiche: Nachrüstung von Flächenspritzautomaten aller Fabrikate, Handspritzstand

mit flexibler Werkstückauflage, Fenster- und Türenerzeugung, Möbel- und Sesselproduktion und spezielle Sonderlösungen.

Système de récupération des peintures et vernis

Planet a réussi à mettre au point un système destiné aux installations de laquage, permettant de récupérer la peinture ou le vernis en excédent et de le ramener, le plus souvent directement, à un cycle d'utilisation. La société est en mesure de proposer des solutions pour la majeure partie des applications industrielles, pour les systèmes tant automatiques que manuels. Son activité est actuellement centrée sur les applications suivantes: équipement ultérieur de systèmes automatiques de peinture en grandes surfaces de tous types, postes manuels de peinture au pistolet avec fixation flexible des pièces, fabrication de portes et fenêtres, production de meubles et sièges, solutions spéciales.

La firma Planet ha logrado desarrollar un sistema para recuperar el "overspray" inevitable en procesos de pintura a pistola, reconduciéndolo directamente al reciclaje en la mayoría de los casos. Así ofrece, entre otras, soluciones para casi todos los casos de empleo en la industria y el comercio, en el sector manual y automatizado. Los puntos fuertes son los campos ya comprobados: equipamiento posterior de todo tipo de equipos de inyección de superficie, puestos de inyección a mano con apoyo flexible de las piezas de trabajo, producción de puertas y ventanas, producción de muebles y sillas y soluciones especiales.



**PLANET Planungs- u
Produktions-Ges. m. b. H.**
A-9900 Lienz
Bürgeraustrasse 20-22

Telefon: +43/4852/69500
Telefax: +43/4852/69500-5
☐ Deutsch, English, Italiano

Starch-based Packings

The firm Biopac turns out bio-degradable packings made from home-produced industrial starch and food additives. Apart from being suitable for microwave cooking and freezer use these packings can be coloured, labelled and written on and will replace various con-

ventional packings such as trays, plates, cups, hamburger boxes, potato-chip containers, etc. After use they can be composted and rot within a few weeks. The advantages of this packing are that they are made from quick-growing raw materials and are fully bio-degradable.

BIOPAC Biologische
Verpackungssysteme
Gesellschaft m. b. H.

A-2100 Leobendorf
Haasstrasse

Telefon: +43/2262-66 451

Telefax: +43/2262-66 450

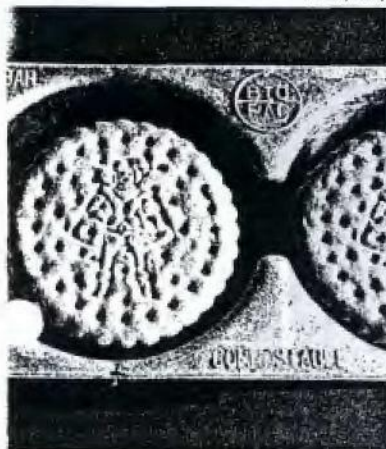
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Español, Italiano

Lineup ▶



▼ Pastry tray

▼ Trays



▼ Ampoule tray



▼ Potato chip box



Stärkeverpackungen

Die Firma Biopac stellt biologisch abbaubare Verpackungen aus nativer Industriestärke und Lebensmittelzusatzstoffen her. Diese Verpackungen sind färbbar, beschriftbar, etikettierbar, tiefkühl- und mikrowelleneeignet und können herkömmliche Verpackungen wie Tassen, Trays, Becher, Teller, Hamburger-Boxen, Pommes-Frites-Behälter etc. ersetzen. Nach Gebrauch sind sie kompostierbar und verrotten innerhalb weniger Wochen. Die Vorteile dieser Verpackung bestehen also darin, daß rasch nachwachsende Rohstoffe zur Herstellung verwendet werden und daß das Material biologisch vollständig abbaubar ist.

Emballages en amidon

Biopac fabrique des emballages biodégradables en amidon industriel natif, avec additifs autorisés pour produits alimentaires. Ces emballages peuvent être colorés, imprimés et munis d'étiquettes; ils vont au freezer et au four à micro-ondes et remplacent avantageusement les conditionnements classiques avec barquettes, plaques, pots et autres boîtes à hamburger ou à pommes frites. Ces emballages compostables se décomposent en l'espace de quelques semaines. L'avantage essentiel de ces emballages est l'utilisation de matières premières rapidement renouvelables et entièrement biodégradables.

Envases de almidón

La firma Biopac produce envases biológicamente desintegrables de almidón industrial natural y de sustancias accesorias alimenticias. Estos envases pueden colorearse, rotularse o etiquetarse. Son aptos para el congelador y microondas y pueden sustituir a envases usuales como bandejas, trays, vasos, platos, "boxes" para hamburguesas, recipientes de patatas fritas, etc. Después de su uso son compostables y se pudren dentro de pocas semanas. Las ventajas de este envase consisten en que para la producción se utilizan materias primas de rápida regeneración y que el material es biológicamente desintegrable en su totalidad.

Raw Material Recovery



The process developed by GAW for the recovery of the raw materials contained in the waste of paper mills more than meets the paper industry's current needs for ecofriendliness, economy and quality. From the waste waters all the reusable residues are recovered, treated and returned to the production process. The recycled material is almost equivalent in quality to the original raw materials and can thus be directly reused. Coating plant waste water can be treated in an ultrafiltration unit. Possibilities of use and design parameters are determined on the spot by means of pilot plants.

Rohstoffrückgewinnung

Das Verfahren von GAW zur Rückgewinnung der in Papierfabrikabwässern enthaltenen Rohstoffe entspricht den aktuellen ökologischen, ökonomischen und qualitativen Erfordernissen in der Papierindustrie. Aus den anfallenden Abwässern werden alle wiederverwertbaren Reststoffe zurückgewonnen, aufbereitet und dem Prozeß wieder zugeführt. Das wiedergewonnene Material entspricht fast den ursprünglich eingesetzten Rohstoffen und ist somit direkt wiederzuverwenden. Streichereiabwässer werden mit dem gleichen Ziel in einer Ultrafiltrationsanlage

behandelt. Die Einsatzmöglichkeiten und Auslegungsparameter werden mit Pilotanlagen vorort ermittelt.

Récupération des matières premières

Le procédé GAW de récupération des matières premières contenues dans les eaux résiduaires des usines à papier répond aux exigences actuelles de l'industrie du papier en matière d'écologie, d'économie et de qualité. Tous les produits résiduaires récupérables contenus dans les effluents sont récupérés, traités et réintroduits dans le cycle. Les matériaux récupérés correspondant à peu près aux matières premières utilisées à l'origine, ils peuvent être réutilisés directement. Les eaux résiduaires du couchage sont traitées dans le même but dans une installation d'ultrafiltration. Les possibilités d'utilisation et les paramètres de construction sont déterminés sur place à partir d'installations pilotes.

Recuperación de materias primas

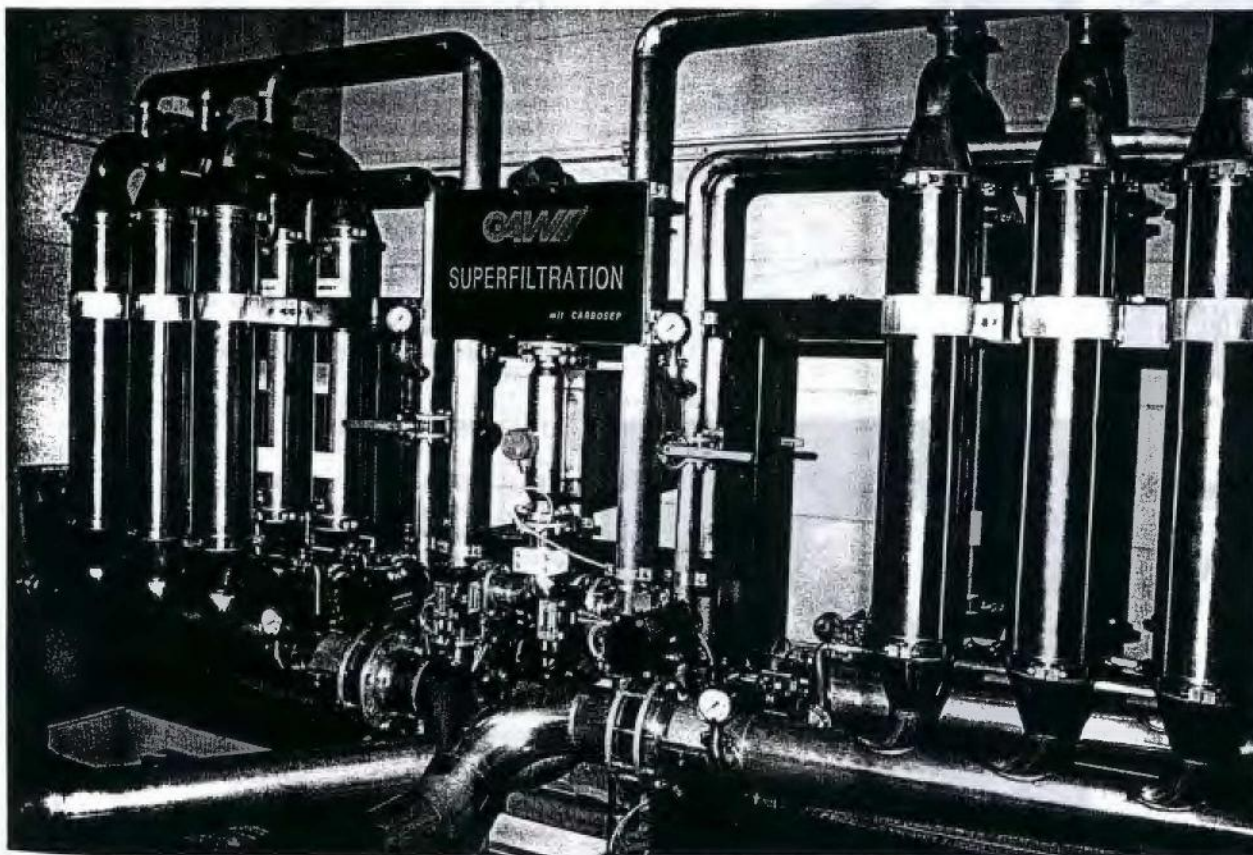
El procedimiento de GAW para la recuperación de las materias primas contenidas en aguas residua-

GAW PILDNER STEINBURG
Ges. m. b. H.

A-8020 Graz
Puchstraße 76
A-8011 Graz, P. O. B. 540
Telefon: +43/316/270 40
Telefax: +43/316/27 32 66
Deutsch, English, Français,
Italiano

les de fábricas de papel corresponde a los actuales requerimientos ecológicos, económicos y cualitativos de la industria papelera. De las aguas residuales que se producen se recuperan todas las materias recuperables, se tratan o preparan y se devuelven al proceso. El material recuperado corresponde casi a las materias primas primitivamente empleadas y es, por eso, directamente reutilizable. Las lavazas de pinturas se tratan en una instalación de ultrafiltración con la misma finalidad. Las posibilidades de empleo y los parámetros de dimensionado se establecen en el lugar mismo en instalaciones piloto.

▼ GAW ultrafiltration plant for recovery of residue in coating-mill waste waters



Plastics and Foamed Plastics Recycling Plants

Thanks to a wealth of experience in modern plant design and to an innovative workforce AMMAG are one of the most important producers of foamed plastics recycling plants. The foamed plastic waste, of varying unit weight, is shredded and pressed, fully automatically, into bales or blocks. These are then used as a starting material for noise, heat and vibration insulation. In the plastics recycling field the company has cooperated closely with customers in the design of plants for the economical and safe processing of plastic waste. This close attention to customers' wishes has resulted in the worldwide sale of the facilities thus developed.

Kunststoff- und Schaumstoff-Recyclinganlagen

Durch große Erfahrung in Verbindung mit moderner Betriebsstruktur und innovativen Mitarbeitern zählt die AMMAG zu den bedeutendsten Herstellern von Schaumstoffrecyclinganlagen. Dabei werden Schaumstoffabfälle unterschiedlicher Raumgewichte vermahlen und die Schaumstofflocken in einem vollautomatischen Prozeß zu Ballen oder Quadern gepreßt. Diese dienen der Auto-

mobil- und Bauindustrie als Ausgangsmaterial für Lärm-, Wärme- und Vibrationsdämmung. Im Bereich Kunststoffrecycling wurden in enger Zusammenarbeit mit den Kunden Anlagenkonzepte entwickelt, die ein wirtschaftliches und sicheres Aufbereiten von Kunststoffabfällen ermöglichen. Weltweite Vermarktung derartiger Anlagen sind das Ergebnis dieser engen, auf Kundenwünsche eingehenden Zusammenarbeit.

Recyclage des plastiques et produits alvéolaires

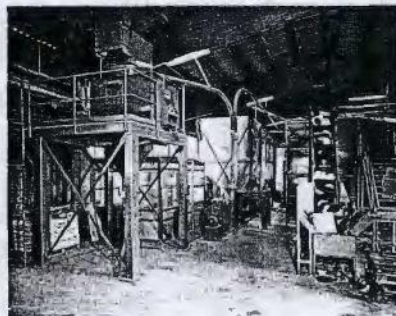
Sa vaste expérience aussi bien que la structure moderne de l'entreprise et l'esprit innovant de ses collaborateurs ont fait d'AMMAG un des principaux fabricants d'installations pour le recyclage des produits alvéolaires. Les déchets de matières alvéolaires de différentes densité sont broyés et les flocons obtenus sont comprimés en balles ou en blocs utilisés par l'industrie automobile et l'industrie du bâtiment pour l'insonorisation, l'isolation thermique ou l'amortissement des vibrations. Toujours à l'écoute des besoins de l'utilisateur, la société a élaboré des installations de recyclage des plastiques proposant des méthodes sûres et économiques. Cette étroite coopération avec ses clients a permis à AMMAG de développer des équipements vendus dans le monde entier.

Instalaciones de reciclaje de material plástico y esponjoso

Gracias a la gran experiencia con la moderna estructura de la empresa y con su innovadores colaboradores se cuenta la AMMAG entre los productores más importantes de plantas de reciclaje de materiales esponjosos. Con ellas, en un proceso completamente automático, se muelen los desechos de material esponjoso de peso distinto por unidad cúbica y se prensan en fardos y "sillares" los copos de material esponjoso. Estos fardos y sillares sirven a la industria de automóviles y de construcción como material de base para silenciar el ruido y aislar el calor y la vibración. En el ámbito del reciclaje de material sintético se han desarrollado - en estrecha colaboración con los clientes - conceptos de plantas que posibilitan un económico y seguro tratamiento de desechos plásticos. Una comercialización mundial de tales plantas es el resultado de esta estrecha colaboración de la empresa siempre abierta a los deseos de sus clientes.

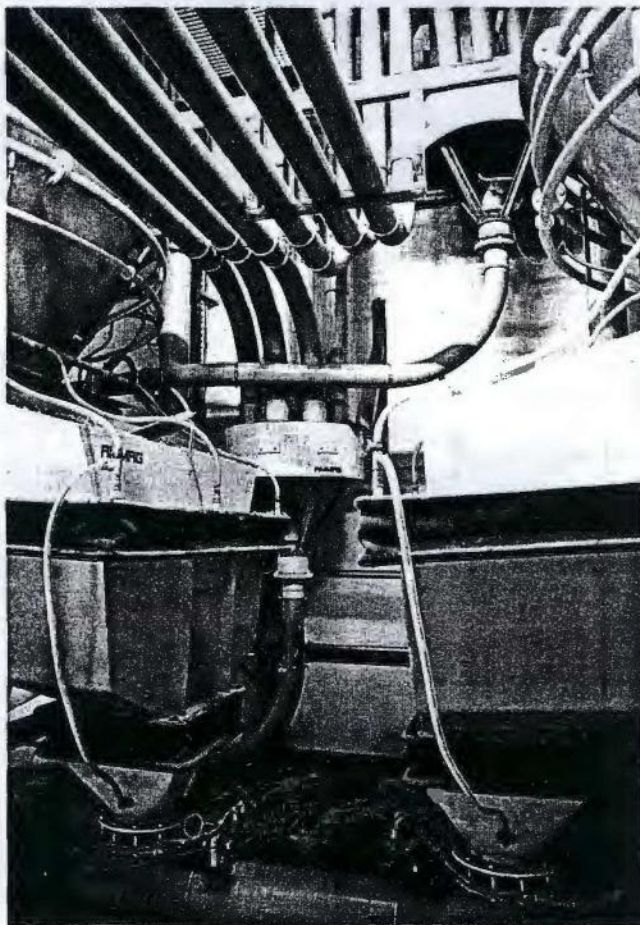
AMMAG Ges.m.b.H.
Spezialfabrik für Schüttguttechnik

A-4623 Gunskirchen
Dahlienstrasse 11
Telefon: +43/7246/408-0
Telefax: +43/7246/7726-39
☐ Deutsch, English



▲ *Plastics recycling plant*

*On right: feeding station with sorting and grinding units
Centre: Hopper for ground plastic
On left: mixing and weighing station*



◀ *Part of a foam plastic recycling plant showing silos with vibratory discharge system and pneumatic distribution station.*

Building Material Recycling Plants



MFL building Material Recycling Plants with toggle-jaw or impact crusher, mobile, semi-mobile, or stationary, are highly suitable for salvaging so-called secondary raw materials, e. g. road demolition material, asphalt, reinforced etc. In more than 100 cases these machines, with thruputs of up to 250 t/h, will turn hitherto hardly reusable waste into high-grade building materials. The high mobility of these machines in particular guarantees their economical operation.

Baustoffrecyclinganlagen

MFL-Baustoffrecyclinganlagen mit Backen- oder Pralldreher, mobil, semimobil oder stationäre, eignen sich bestens zur Wiederaufbereitung von sogenannten Sekundärrohstoffen wie Straßenaufbruchsasphalt, Gebäudeabbruch oder armiertem Betonaufbruch. In mehr als 100 Einsatzfällen bereiten diese Maschinen mit Durchsatzleistungen bis 250 t/h bisher unzureichend verwertbare Abfallstoffe zu hochwertigen Baustoffen auf. Insbesondere die hohe Mobilität dieser Anlagen garantieren den ökonomischen Einsatz.

Recyclage des matériaux de construction

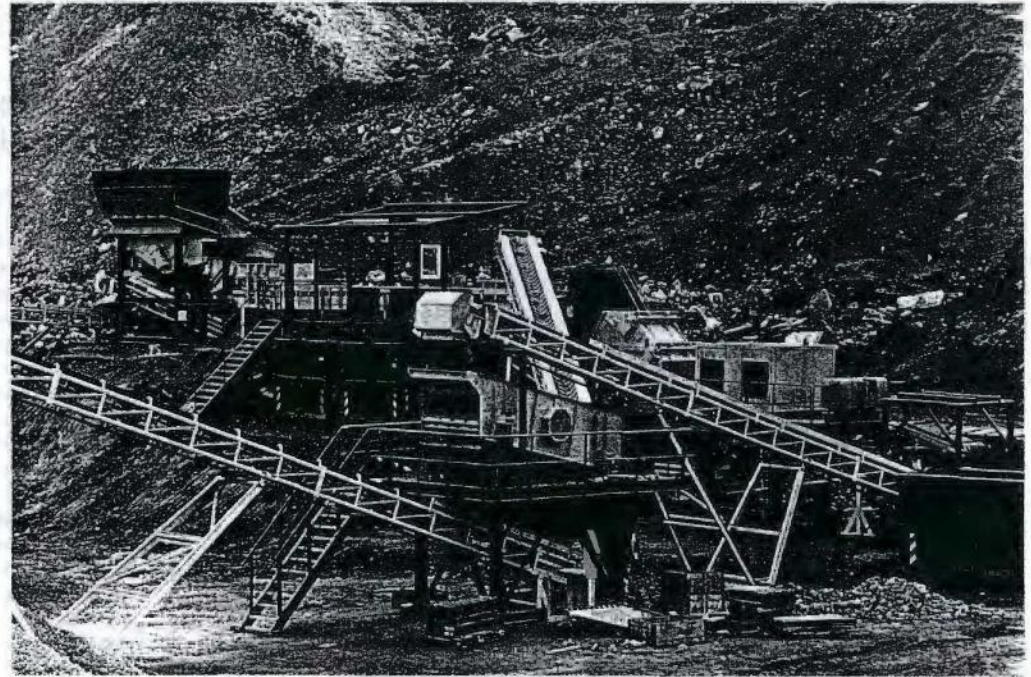
Les installations de recyclage des matériaux de construction MFL équipées de concasseurs à mâchoires ou à percussion mobiles, semi-mobiles ou stationnaires conviennent parfaitement pour le recyclage des matières premières dites secondaires telles que: anciens revêtements de chaussée bitumineux, matériaux de démolition ou béton armé. Ces machines dont le rendement peut aller jusqu'à 250 t/h ont une bonne centaine d'applications pour lesquelles elles permettent d'obtenir des matériaux de construction de qualité à partir de déchets et décombres jusqu'ici difficilement récupérables. Leur très grande mobilité garantit une bonne rationalité économique.

Equipos de reciclaje de material de construcción

Los equipos de reciclaje de material de construcción MFL, con trituradoras de mandíbulas, de impacto, móviles, semimóviles o estacionarias, se prestan óptimamente para el reciclaje de las así llamadas materias primas secundarias,

como asfalto de rotura de carretera, escombros de edificios o roturas de hormigón armado. En más de 100 casos se emplean estas máquinas, de una potencia promedio de hasta 250 t/h, en la preparación y reciclaje de materias residuales, hasta ahora insuficientemente aprovechadas, convirtiéndolas en material de construcción de alta calidad. Es especialmente la alta movilidad de estas instalaciones la que garantiza su empleo económico.

Semi-mobile recycling plant with R-CI 130-130/5 Impact Crusher ▼



R-CI 108-80/T crawler-mounted recycling with toggle-jaw crusher ▼



MASCHINENFABRIK LIEZEN
Ges.m.b.H.

A-8940 Liezen
Werksstrasse 5
Telefon: +43/3612/270-0
Telefax: +43/3612/270-207
☎ Deutsch, English, Français,
Español

Waste Wood Recycling Plants

The waste wood recycling plant developed by Ingenieurbüro Mintscheff will shred such wood waste as timber, doors, window frames, floors, demolition wood, furniture, garden wood, wood packings, etc. and separate the shredded material into various fractions, e. g. iron, non-ferrous metals, glass and putty, paper and dust, and into wood chips. The secondary raw materials can be recycled; the wood chips processed into briquettes. Thanks to its mobile design the plant will process (shred and sort) the wood waste on the spot, e. g. in workshops or factories, on building and demolition sites, in food stores or at municipal refuse collection sites, thus reducing transportation costs.

Holzaufbereitungsverfahren

Durch das vom Ingenieurbüro Mintscheff angebotene Holzaufbereitungsverfahren werden Holzab-

fälle wie Bauholz, Türen, Fensterstöcke, Fußböden, Bauabbruchholz, Möbel, Gartenholz, Holzverpackungen, u. a. m. vorort zerkleinert und das geschredderte Gut in die einzelnen Fraktionen (Materialien) wie Eisen, Nichteisenmetalle, Glas und Kitt, Papier und Staub usw. und in Holzspäne getrennt. Die Sekundärrohstoffe können einer Verwertung zugeführt, die Holzspäne zu Briketts weiterverarbeitet werden.

Durch die mobile Anlage werden die verunreinigten Holzabfälle somit direkt dort, wo sie anfallen, wie z. B. in Gewerbe- oder Industriebetrieben, auf Baustellen, bei Abbrüchen, im Lebensmittelhandel oder auch in Gemeindefeststellstellen verarbeitet (geschreddert und getrennt), wodurch auch Transportkosten gespart werden.

Recyclage du bois

Avec le procédé proposé par le bureau d'études Mintscheff, les déchets de bois tels que: bois de charpente, portes, huisseries, planchers, bois de démolition, meubles, déchets des jardins, emballages, etc. sont déchiquetés sur place; les copeaux sont séparés des matériaux autres que le bois; ceux-ci (fer, métaux non-ferreux, verre et mastic, papier et poussière) sont triés et peuvent être utilisés séparément comme matières premières de recyclage tandis que les copeaux de bois servent à la fabrication de briquettes. Les installations mobiles permettent de traiter (déchiqueter et trier) les déchets de bois à l'endroit même où ils sont produits: usi-

nes, ateliers, chantiers de construction ou de démolition, commerce de l'alimentation ou points de collecte des communes) et donc d'économiser les frais de transport.

Procesos de preparación de madera

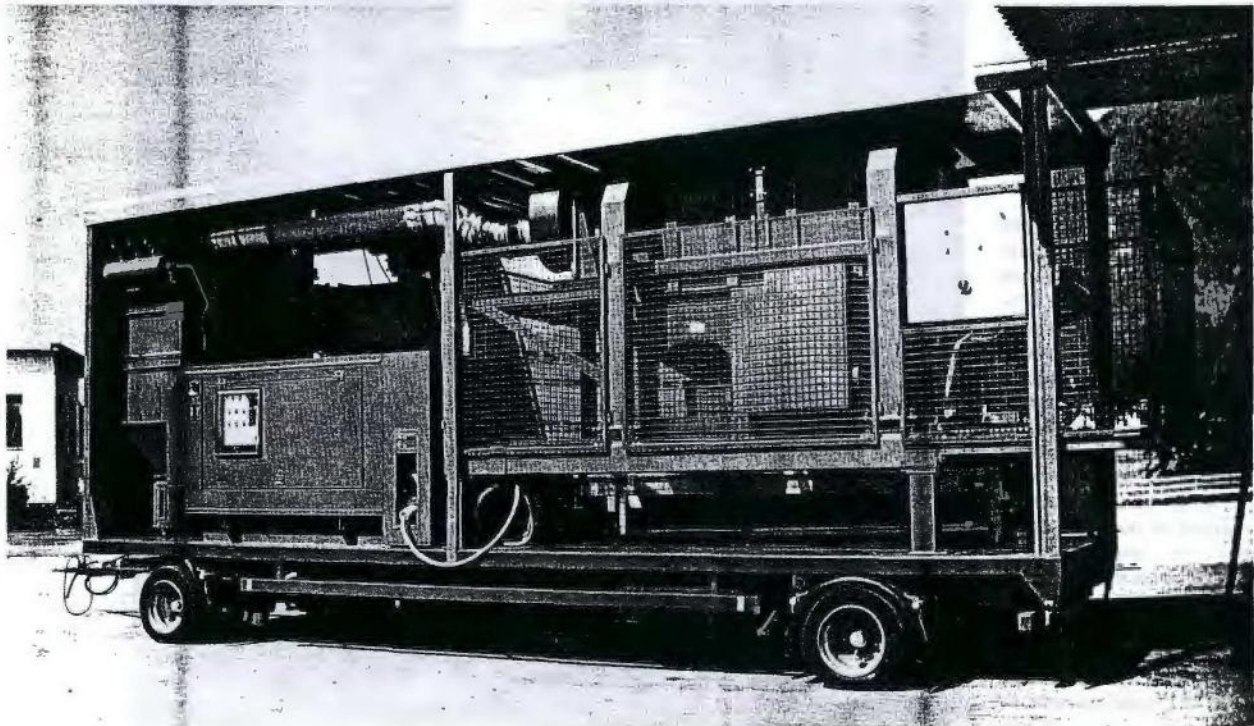
Gracias al procedimiento de preparación de madera, ofrecido por el Ingenieurbüro Mintscheff, se trituran o desmenuzan en el lugar los desperdicios de madera como madera de construcción, puertas, marcos de ventana, suelos, madera de derribo de construcción, muebles, madera del jardín, envases de madera, y otros más, separando el material desguzado en fracciones específicamente individuales (materiales clasificados), como hierro, metales no-férricos, vidrio y masilla, papel y polvo, etc. y virutas de madera. Y así las materias primas secundarias pueden llevarse a su aprovechamiento o reciclaje. De las virutas, por ej., pueden hacerse briquetas.

Gracias a la instalación móvil se tratan (desguzan y separan) los desechos o basura directamente en el mismo lugar donde se producen, como por ej. en empresas comerciales o industriales, en terrenos de obras, en derribos, en el comercio de productos alimenticios o también en depósitos centrales (puntos de recogida) del municipio, con lo que se ahorran los gastos de transporte.

**INGENIEURBÜRO
MINTSCHEFF**

A-6020 Innsbruck
Hallerstrasse 180
Telefon: +43/512/265 970
Telefax: +43/512/261 050
Deutsch, English

Mobile waste wood recycling. System Appler-Mintscheff ▼



Aluminium Recycling

The firm Focon has developed a special hot dross centrifuging process for the recovery of aluminium. Ecofriendly and economical, the ECOCENT facility guarantees a metal recovery rate of 85% and will pay for itself in a much shorter time than conventional dross handling systems. By this method the hot dross is fed immediately after skimming into the homogenizing drum of the plant, homogenized, heated and then conveyed to the mould centrifuge. Within minutes the molten aluminium is separated from the oxides and accompanying substances and forms a compact metal ring. Once the metal has solidified the mould is emptied ready for the next charge of dross.

Aluminium-Recycling

Ein spezielles Verfahren zur Rückgewinnung von Aluminium aus heißer Krätze durch Zentrifugieren wurde von der Firma Focon entwickelt. Die ECOCENT-Anlage, die umweltfreundlich und energiesparend arbeitet, garantiert ein Metallausbringen von 85% und hat eine wesentlich kürzere Amortisationszeit als konventionelle Krätzeaufbereitungssysteme. Bei diesem Verfahren wird die heiße Krätze nach dem Abziehen vom Ofen so schnell wie möglich in die Homogenisierungstrommel der Anlage gefüllt, homogenisiert, aufgeheizt und anschließend in die Zentrifuge eingefüllt. Innerhalb weniger Minuten wird das Aluminium von den Oxiden und Begleitstoffen abgetrennt und formt einen kompakten Metallring. Nach der Erstarrung des Aluminiumringes wird die Zentrifuge entleert, dabei Metallring und Begleitstoffe automatisch getrennt, und die Anlage ist für die nächste Charge heißer Krätze vorbereitet.

Recyclage de l'aluminium

Focon a mis au point un procédé spécial de récupération de l'aluminium par centrifugeage, à partir de laitier chaud. L'installation ECOCENT, écologique et consommant peu d'énergie, garantit un taux de récupération de métal de 85% et s'amortit plus rapidement que les systèmes de traitements du laitier classiques. Avec ce procédé, le laitier chaud est amené au tambour d'homogénéisation dès la sortie du four; après homogénéisation et chauffage, il arrive à la centrifugeuse. L'aluminium est séparé en quelques minutes des oxydes et impuretés qui l'accompagnent et forme un anneau métallique compact. Après solidification de cet anneau, la centrifugeuse est vidée; l'anneau d'aluminium est séparé automatiquement des autres matières et l'installation est préparée à recevoir la charge suivante de laitier chaud.

Reciclaje del aluminio

La firma Focon ha desarrollado un procedimiento especial para la recuperación de aluminio centrifugando escoria caliente. La instalación ECOCENT de trabajo favorable al medioambiente y ahorrrativo de energía, garantiza un rendimiento de 85% del metal y alcanza un plazo de amortización esencialmente más corto que los sistemas convencionales de tratamientos de escorias. En este procedimiento se vacía la escoria caliente, después de tirarla del horno, lo más rápido posible en el tambor de homogeneización de la instalación, se homogeniza, se calienta y luego se introduce en la cen-

FOCON Foundry Consultants
Giessereiberatung Ges. m. b. H.
Environmental Technology

A-8700 Leoben
Endregasse 11
Telefon: +43/3842/25 071
Telefax: +43/3842/24 994
Deutsch, English, Español

trífuga. Dentro de pocos minutos se separa el aluminio de los óxidos e impurezas formando un anillo compacto de metal. Después de la solidificación del anillo de aluminio se vacía la centrífuga, separándose automáticamente el anillo de metal de las impurezas, con lo que queda la instalación lista para la próxima carga de escoria caliente.

▼ Rings of reclaimed aluminium



Waste Glass and Plastics Recycling

For many years now Binder + Co AG have been one of the leading producers of waste glass recycling plants. The firm's services embrace not only the planning of new and enlargement of existing facilities, but also the installation of complete turnkey plants and, in particular, the delivery of special components. The KSP Separator has been designed for the all-automatic separation of foreign matter such as ceramics, stones, porcelain and metal (aluminium, iron, lead, etc.). With the BWG (Brown-White-Green) Glass Separator waste glass is sorted according to colour. Throughout Europe numerous Binder-built plants are doing outstanding service. Experience and knowhow gained from waste glass recycling has been applied to plastic container disposal. In this sector, too, the company can supply all-automatic systems for the separation of plastic containers according to material (PET, PE, PP, etc.) and colour.

Altglas- und Kunststoffaufbereitung

Die Binder + Co AG zählt seit Jahren zu den führenden Anlagenbauern für die Altglasaufbereitung. Das Programm umfaßt neben der Erstellung von Planungen, der Erweiterung von bestehenden Anlagen und der Errichtung von schlüsselfertigen Gesamtanlagen insbesondere die Lieferung von Spezialkomponenten. Der KSP-Abscheider dient zur vollautomatischen Aussortierung von Fremdstoffen wie Keramik, Steine, Porzellan und Metalle (Aluminium, Eisen, Blei, etc.). Mit dem BWG (Braun-Weiß-Grünglas)-Glas-trenner wird das Altglas vollautomatisch nach Farben aufbereitet. In ganz Europa befinden sich zahlreiche Referenzanlagen mit hervorragenden Sortierergebnissen. Erfahrungen und Erkenntnisse aus der Altglasaufbereitung wurden auf Kunststoff-Hohlkörper übertragen. Auch in diesem Bereich werden vollautomatische Systeme zur Trennung von Kunststoff-Hohlkörpern nach Material (PET, PE, PP, etc.) und Farbe angeboten.

BINDER + Co AG

A-8200 Gleisdorf

P.O.B. 71

Telefon: +43/3112/2136-0

Telefax: +43/3112/2136-9

☎ Deutsch, English, Français

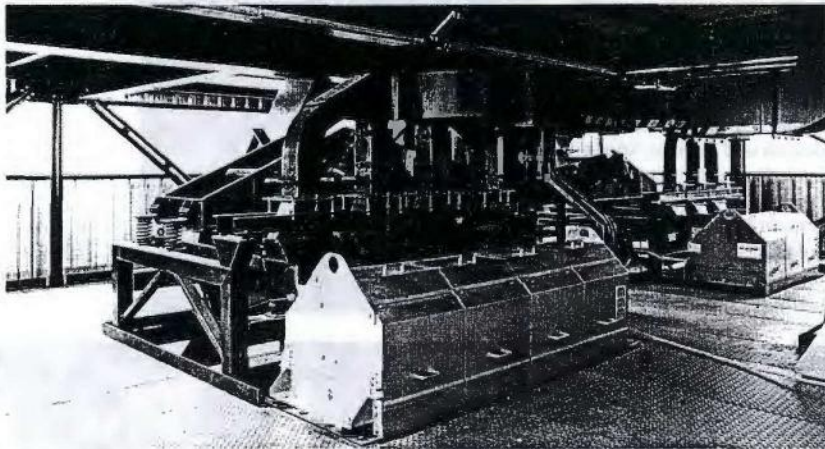
Recyclage du verre et des plastiques

Binder+Co AG est depuis des années un leader dans la construction d'installations de recyclage du verre. Ses prestations incluent les études préliminaires, l'extension d'installations existantes et la construction d'installations clés en main, avec en particulier la fourniture de composants spéciaux. Le séparateur KSP fonctionnant en automatisme intégral sépare le verre des autres matériaux tels que débris de céramique, pierre, porcelaine ou métaux (aluminium, fer, plomb, etc.). Le séparateur BWG trie automatiquement le verre selon la couleur, séparant verre incolore, verre vert et vert brun. De nombreuses installations de référence sont opérationnelles dans toute l'Europe; le tri fonctionne toujours de façon irréprochable. La société propose également des systèmes de tri automatiques pour les corps creux en matière plastique qui sont séparés par matériaux (PET, PE, PP, etc.) et par couleurs.

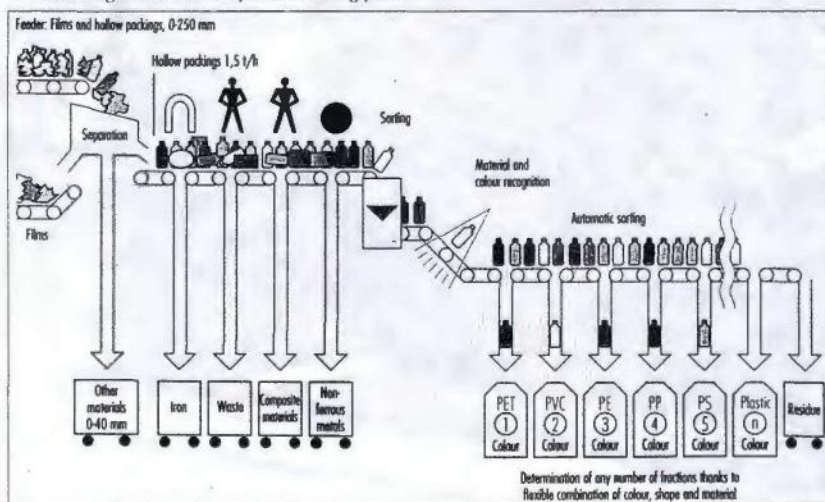
Tratamiento de vidrio viejo y de material plástico

Binder + Co AG. se cuenta, desde hace años, entre los constructores líderes de instalaciones para el tratamiento de vidrio viejo. El programa comprende a más de la ejecución de planeamiento, ampliación de instalaciones existentes y erección de instalaciones completas llave en mano, sobre todo el suministro de componentes especiales. El separador K. S. P. sirve para la separación completamente automática de impurezas o materias extrañas como cerámica, piedras, porcelana y metales (aluminio, hierro, plomo, etc.). Con el separador de vidrio BWG (marrón - blanco - verde) se trata en forma completamente automática, según el color, el vidrio viejo. En toda Europa se tienen, como referencias, numerosas instalaciones con excelentes resultados de separación. Sus experiencias y conocimientos del tratamiento de vidrio viejo las ha extendido a los cuerpos huecos de material plástico. En este sector también se ofrecen sistemas completamente automáticos para la separación de cuerpos huecos de material plástico según material (PET, PE, PP, etc.) y color.

▼ KSP Separator as complete plant



▼ Flow diagram of flexible plastics sorting plant.

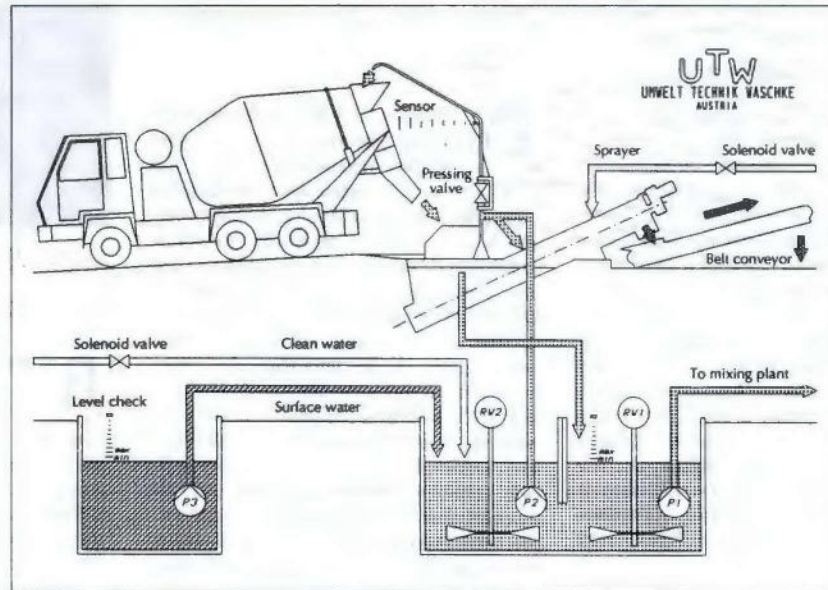


Waste Concrete Recycling Plants



UTW Concrete Recycling Plants have for decades now been an advanced and internationally proven product. Designed for use by ready-mix concrete and prefabricated building producers, the plants display capacities of 4 – 36 m³/hr. Thanks to the separation of sand and gravel, water with fine sand and cement, all the materials can be recycled for reuse. As a result there is no impact on the environment. UTW Concrete Recycling Plants are in operation in Belgium, Germany, Finland, the Netherlands, Austria, Hungary and Cyprus.

Flow diagram ►



Recyclage du béton résiduel

Les installations UTW de recyclage du béton résiduel représentent un produit élaboré, internationalement éprouvé. Ces installations qui s'adressent aussi bien aux ateliers de béton transporté qu'aux usines d'éléments préfabriqués ont une capacité horaire de 4 à 36 m³. Grâce à la séparation du sable et du gravier ainsi que de l'eau avec le sable fin et le ciment, tous les matériaux peuvent être réutilisés dans un nouveau cycle de production au lieu d'être à l'origine de pollution. Des installations UTW de recyclage du béton sont opérationnelles en Belgique, en Allemagne, en Finlande, aux Pays-Bas, en Autriche, en Hongrie et à Chypre.

Restbetonrecyclinganlagen

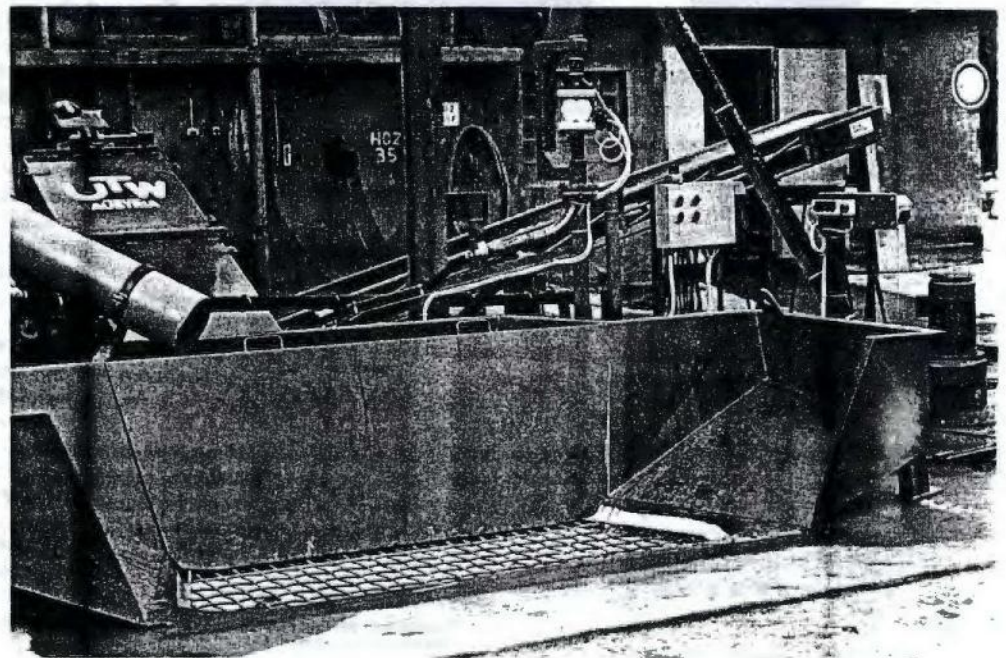
UTW-Restbetonrecyclinganlagen sind ein seit Jahrzehnten international bewährtes und ausgereiftes Produkt. Die Anlagen eignen sich für Transportbeton- und Fertigteilwerke von 4–36 m³. Durch das Trennen von Sand und Kies, Wasser mit Feinstsand und Zement, können alle Materialien wieder der neuen Produktion zugeführt werden. Auf diese Weise wird die Umwelt nicht belastet. UTW-Restbetonrecyclinganlagen gibt es in Belgien, Deutschland, Finnland, den Niederlanden, Österreich, Ungarn und Zypern.

UTW
Umwelt-Technik Waschke
Handelsgesellschaft m. b. H.

A-5020 Salzburg
Elisabethstrasse 53/1
Telefon: +43/662/451 662
Telefax: +43/662/451 662-14
☎ Deutsch, English, Français

Instalaciones de reciclaje de hormigón restante

Las instalaciones de reciclaje de hormigón restante UTW son un producto madurado y comprobado internacionalmente desde hace decenios. Las instalaciones se prestan para fábricas de hormigón de transporte y de piezas prefabricadas. Su rendimiento es de 4–36 m³ por hora. Gracias a la separación de arena y grava, agua con arena fina y cemento, pueden reconducirse de nuevo todos los materiales a una producción nueva. De esta manera no se carga el medioambiente. Se tiene instalaciones de reciclaje de hormigón restante UTW en Bélgica, Alemania, Finlandia, Países Bajos, Austria, Hungría y Chipre.



Polyethylene Recyclates

Ecoplast produce quality recyclates from used PE films (LDPE) and mouldings/post-consumer waste (HDPE). Production is by means of up-to-date machines, with continuous quality supervision. Ecoplast recycles for films, pipes, injection moulding and hollow ware are being used with success Europe-wide.

Polyäthylen-Recyclate

Ecoplast erzeugt Qualitätsrecyclate aus verschmutzten PE-Folien (LDPE) und Formkörpern/Post-Consumer-Waste (HDPE). Die Herstellung erfolgt auf modernen Anlagen bei konstant laufender Qualitätsüberwachung. Dementsprechend werden die spezifizierten Recyclate von Ecoplast für Folien, Rohre, Spritzguß und Hohlkörper europaweit erfolgreich eingesetzt.

Produits recyclés en polyéthylène

Ecoplast fabrique des produits recyclés de qualité à partir de feuilles de polyéthylène b.d. souillées et d'emballages creux usés (polyéthylène h.d.). Les produits obtenus par Ecoplast sur des machines modernes sont soumis à un contrôle de qualité permanent et sont utilisés avec succès dans toute l'Europe pour la fabrication de feuilles, tuyaux, pièces moulées par injections et corps creux.



**ECOPLAST
KUNSTSTOFFRECYCLING
Ges. m. b. H.**

A-8410 Wildon
Untere Aue 21
Telefon: +43/3182/3355
Telefax: +43/3182/3355-18
☒ Deutsch, English

Reciclados de polietileno

Ecoplast produce reciclados de calidad de folios sucios de PE (LDPE) y de cuerpos de molde (HDPE) de desechos (post-consumerwaste). La producción se hace en instalaciones modernas, con control constante de calidad. Correspondientemente se emplean con éxito en toda Europa los reciclados específicos de Ecoplast para la producción de folios, tubos, fundición inyectada de plásticos y cuerpos huecos.

Plastic Recycling

**EREMA
ENGINEERING-RECYCLING**

A-4052 Ansfelden
Unterfeldstraße 3
Telefon: +43/732/311 761-0
Telex: 222300 erema a
Telefax: +43/732/311 764
☒ Deutsch, English, Français

Recyclage des plastiques

Erema s'occupe de la conception, du perfectionnement, de la fabrication et de la vente d'installations de régénération des déchets de matière plastique. Depuis sa fondation, cette société a installé 600 équipements de ce genre dans le monde entier.

On trouve à son programme des installations de recyclage des plastiques, des filtres pour masse fondue ainsi que des installations de broyage pour matières thermoplastiques et plastiques techniques à savoir PE-BD, PE-BDL, PE-HD, BOPP, PVC, feuilles de PET, bandelettes de PP et PE-HD, orientées ou non, PP, PETP, fibres et filaments PA, ABS, PS et PSE.

The firm Erema is engaged in the planning, further development, production and sale of recycling plants for plastic waste. Since the company's creation some 600 plants have been installed worldwide. The lineup embraces plastic recycling plants, melt filters, shredding plants for thermoplastics and technical plastics, that is, for LLDPE, LDPE, HDPE, BOPP, PVC, PETP films, PP and HDPE tapes, oriented and non-oriented, PP, PE, PA fibres and filaments, ABS, PS and EPS.

Kunststoffrecycling

Die Firma Erema beschäftigt sich mit der Konzeption, Weiterentwicklung, Herstellung und dem Vertrieb von Regenerieranlagen für Kunststoffabfälle. Seit der Gründung des Unternehmens wurden weltweit 600 Anlagen installiert. Das Leistungsprogramm umfaßt im einzelnen Kunststoffrecyclinganlagen, Schmelzefilter, Zerkleinerungsanlagen für thermoplastische und technische Kunststoffe, das sind LLDPE, LDPE, HDPE, BOPP, PVC, PETP-Folien, PP- und HDPE-Bändchen, verstreckt und unverstreckt, PP, PETP, PA-Fasern und Filamente, ABS, PS und EPS.



Reciclaje de materias plásticas

La firma Erema se ocupa de la concepción, desarrollo, producción y venta de instalaciones de regenerado de desechos de material plástico. Desde la fundación de la empresa hasta ahora se han instalado 600 plantas en todo el mundo.

El programa de prestaciones comprende, en detalle, instalaciones de reciclaje de materias plásticas, filtros de fusiones, instalaciones trituradoras y desmenuzadoras para materiales termoplásticos y plásticos técnicos, como son: LLDPE, LDPE, HDPE, BOPP, PVC, hojas de PET, cintas de PP y HDPE, orientadas y no orientadas, PP, PET, filamentos y fibras de PA, ABS, PS y EPS.

Refuse and Can Presses



The firm Jeitler produces combined refuse/can presses. The left container is for holding 110-litre bin liners, compression rate 1:4. The right container is for pressing all types of cans. Thus compacted, they can be easily recycled. Pressing of cans reduces their volume to about 10% of their original size.

Müll & Dosenpresse

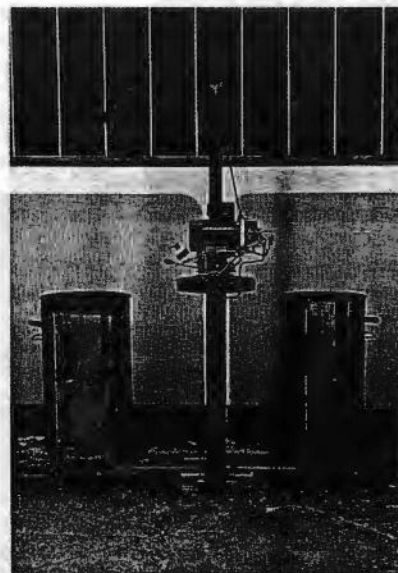
Die Firma Jeitler erzeugt kombinierte Müll / Dosenpressen. Der linke Behälter ist für die Aufnahme von 110 Liter Müllsäcke geeignet, Verdichtung 1:4. Der rechte Behälter ist zum Verpressen

von Dosen aller Art geeignet. Die so gepressten Gebinde können wieder dem Recycling zugeführt werden. Durch das Verpressen der Gebinde wird das Volumen auf ca. 10% der ursprünglichen Größe verringert.

JOHANN JEITLER
Kommunaltechnik

A-8271 Bad Waltersdorf 236

Telefon: +43/3333/2262
Telefax: +43/3333/2970
Deutsch, English



Presses à ordures et à boîtes

Jeitler produit des presses combinées pour ordures et pour boîtes. Le récipient de gauche destiné aux sacs à ordures a une capacité de 110 litres; les ordures sont comprimées dans le rapport de 1 à 4. Le récipient de droite est prévu pour les boîtes de tous types, qui peuvent être recyclées après compression. Le volume des boîtes ne représente alors plus que 10% du volume primitif.

Prensa de basura y de latas

La firma Jeitler produce prensas combinadas de basura/latas. El recipiente izquierdo se indica para la recepción de sacos de basura de 110 litros, compresión 1:4. el recipiente de la derecha se presta para prensar todo tipo de latas. Los envases así prensados pueden llevarse de nuevo al reciclaje. Prensando los envases se reduce el volumen a aprox. un 10% de su tamaño original.

Recycling of Building Waste



For salvaging slightly dirtied building waste SBM-Wageneder produce mobile plants of up to 250 t/hr capacity. For very dirty waste a stationary system has been developed (patent pending) with automatic separation of light materials like wood, plastic, paper, etc. Machines and plants from SBM-Wageneder have been in operation for years in more than 40 countries.

Baurestmassenrecycling

Zur Wiederaufbereitung von geringfügig verunreinigten Baurestmassen produziert SBM-Wageneder mobile Anlagen für Stundenleistungen bis zu 250 Tonnen. Für stark verunreinigte Baurestmassen wurde ein zum Patent angemeldetes, stationäres System mit automatischer Trennung der Leichtstoffe wie Holz, Kunststoff, Papier usw. entwickelt. Maschinen und Anlagen von SBM-Wageneder sind seit Jahren in mehr als 40 Ländern der Welt im Einsatz.

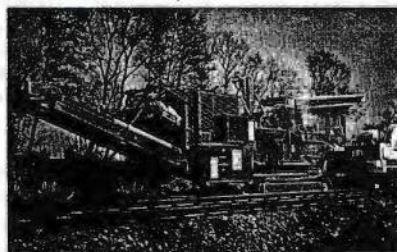
Reciclaje en masa de derribos de construcción

Para la preparación de masas de derribos de construcción, poco sucias, produce SBM-Wageneder instalaciones móviles con rendimientos de hasta 250 toneladas-hora. Para masas de derribos de construcción, fuertemente sucias, se ha desarrollado un sistema estacionario, - cuya patente se ha solicitado -, con separación automática de los materiales livianos como madera, plástico, papel, etc. Las máquinas e instalaciones de SBM-Wageneder se emplean desde hace años en más de 40 países del mundo.

Recyclage des déchets de chantier

Les installations mobiles SBM-Wageneder pour le traitement des déchets de chantier légèrement souillés peuvent atteindre un rendement horaire de 250 tonnes. Pour les déchets fortement souillés, la société a développé un système stationnaire avec séparation automatique des matériaux légers tels que bois, plastique et papier, pour lequel elle a déposé une demande de brevet. Les machines et installations SBM-Wageneder sont utilisées depuis des années dans plus de 40 pays du monde entier.

Crawler-mounted impact crusher ▼



Stationary building-waste recycling ▼



SBM WAGENEDER Gesellschaft m. b. H.

A-4663 Laakirchen
Arbeiterheimstraße 46

Telefon: +43/7613/2771
Telefax: +43/7613/2771-4
Deutsch, English

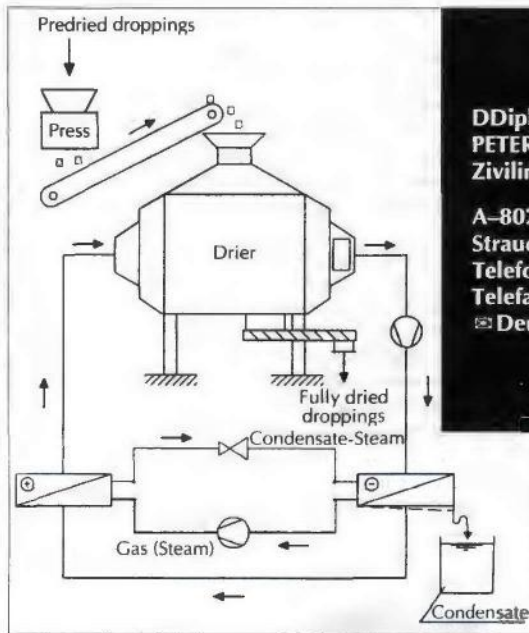
Drying of Chicken Droppings

On poultry farms the droppings, when not made use of, give rise to an unpleasant odour and dust and have to be disposed of – at considerable cost. They can, however, be turned into a valuable commodity, namely natural fertilizer. Partly dried in the runs, the droppings are pressed and in a special drier with heat

pump dried to a residual moisture content of 15%. In quality the condensate is on a par with liquid manure. The process air circulation system is fully enclosed, meaning that there are no obnoxious smells. The final product is an odourless, pourable biological fertiliser with a long storage life.

Trocknung von Hühnerkot

Der Hühnerkot einer Eierfarm bringt – unverwertet – Geruchs- und Staubprobleme mit sich und muß aufwendig entsorgt werden. Es kann jedoch daraus auch ein wertvolles Handelsprodukt, nämlich Naturdünger, gewonnen werden. Dazu wird der in den Ställen vortrocknete Kot gepreßt und im Spezialtrockner mittels Wärmepumpe auf die Restfeuchte von 15% gebracht. Das Kondensat hat die Qualität einer Gülle. Die Prozessluft wird im geschlossenen Kreislauf geführt, d. h. es treten keine Geruchsbelastungen auf. Als Endprodukt entsteht ein geruchsfreies, rieselfähiges, gut zu lagernes biologisches Düngemittel.

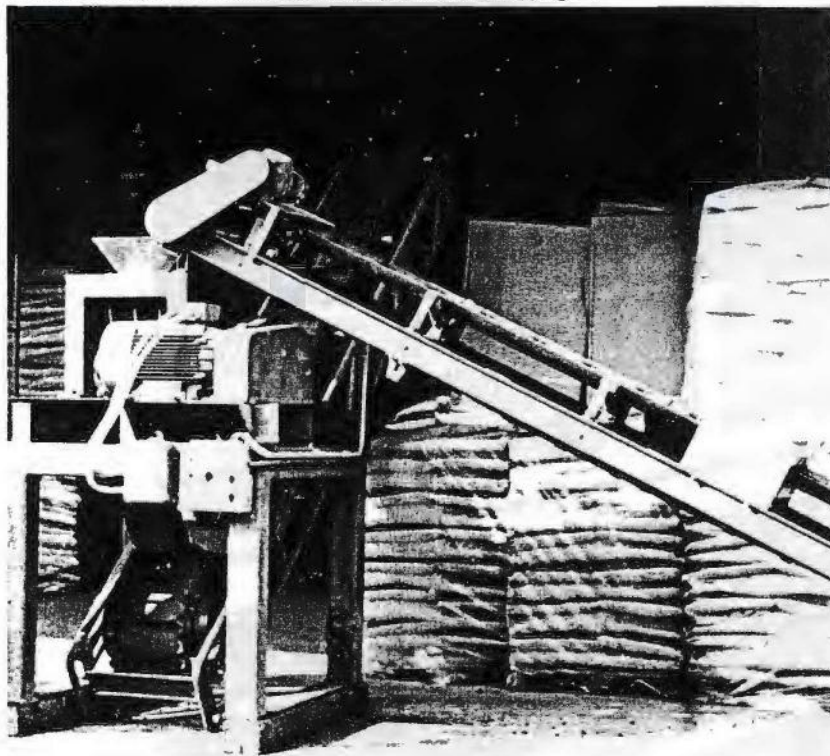


DDipl.-Ing. Dr. techn.
PETER J. WEISS
Zivilingenieur für Maschinenbau

A-8020 Graz
Strauchergasse 12a
Telefon: +43/316/91 35 98-0
Telefax: +43/316/91 35 98-9
Deutsch, English

◀ Flow diagram of chicken droppings dehydration plant with press, heat pump and condensate separation

Final unit of dehydration plant for delivery of packed dried droppings ▼



Séchage des fientes de volaille

Les fientes d'un élevage de poulets dégagent des odeurs désagréables et de la poussière et leur élimination est onéreuse lorsqu'elles ne servent à rien alors qu'il est possible de les transformer pour obtenir un engrais naturel intéressant. Le procédé permet de comprimer les fientes préalablement séchées sur place, puis d'en extraire l'humidité sur un séchoir spécial équipé de pompes thermique pour obtenir un produit ne présentant plus qu'une humidité résiduelle de 15%. Le condensat a la qualité du purin. L'air nécessaire au déroulement du processus circulant en circuit fermé, on évite le dégagement d'odeurs. Le produit final est un engrais biologique en fins granulés, sans odeurs et facile à entreposer.

Secado de excrementos de pollos

Los excrementos de los pollos de una granja de huevos si no se aprovechan traen consigo problemas de pestilencia y polvos debiendo eliminárselos costosamente. Sin embargo, de ellos puede obtenerse un valioso producto comercial; estiércol natural. Para esto se prensan los excrementos presecados en la granja y con una bomba calorífica se acondicionan a una humedad final del 15%. El agua condensada tiene la calidad de un licuame. El aire del proceso circula en un circuito cerrado, es decir no se tienen las molestias de pestilencia. Como producto final se tiene un abono biológico, inodoro, atomizable, fácil de almacenar.

Noise Protection Wall

The Greiner Noise Protection Wall 93

- consists to 90% of mixed plastic and foam plastic waste from household and industry,
- is of highly absorptive, absorptive or reflective design,
- is placed alongside of motorways, highways, railways, industrial plants and airports,
- can be coloured as required,
- is maintenance-free and recyclable.
- can be erected in sections of up to 5 metres.

The firm C. A. Greiner Extrusionstechnik supplies both plants and the knowhow for the manufacture of their product.

Lärmschutzwand

Die Greiner Lärmschutzwand 93

- besteht zu 90% aus gemischten Kunststoff- und Schaumstoffabfällen aus den Haushalten und der Industrie
- wirkt wahlweise hochabsorbierend, absorbierend oder reflektierend
- wird entlang von Autobahnen, Landstraßen, Bahnstrecken, Industrieanlagen und Flughäfen eingesetzt

- kann farblich individuell gestaltet werden
- ist wartungsfrei und wiederverwertbar
- erlaubt den Einbau in bis zu 5 Meter lange Felder

Die Firma C. A. Greiner Extrusionstechnik liefert die Anlagen und das Know-how zur Herstellung dieses Produktes.

Ecran anti-bruit

L'écran anti-bruit Greiner 93

- consiste à 90% en plastiques et produits alvéolaires mixtes, provenant des déchets domestiques et industriels;
- peut être au choix hautement absorbant, absorbant ou réfléchissant;
- s'installe le long des autoroutes, des routes à grande circulation, des voies ferrées, des sites industriels et des aéroports;
- peut être coloré à volonté;
- ne nécessite aucun entretien et peut être recyclé;
- peut être monté en panneaux de 5 mètres de long.

La société C.A. Greiner Extrusionstechnik fournit les équipements et le savoir-faire pour la fabrication de ce produit.

C. A. GREINER & SÖHNE
Ges. m. b. H.
Extrusionstechnik

A-4552 Wartberg/Krems
Auern 100
Telefon: +43/7587/411, 412, 504
Telefax: +43/7587/418
☑ Deutsch, English



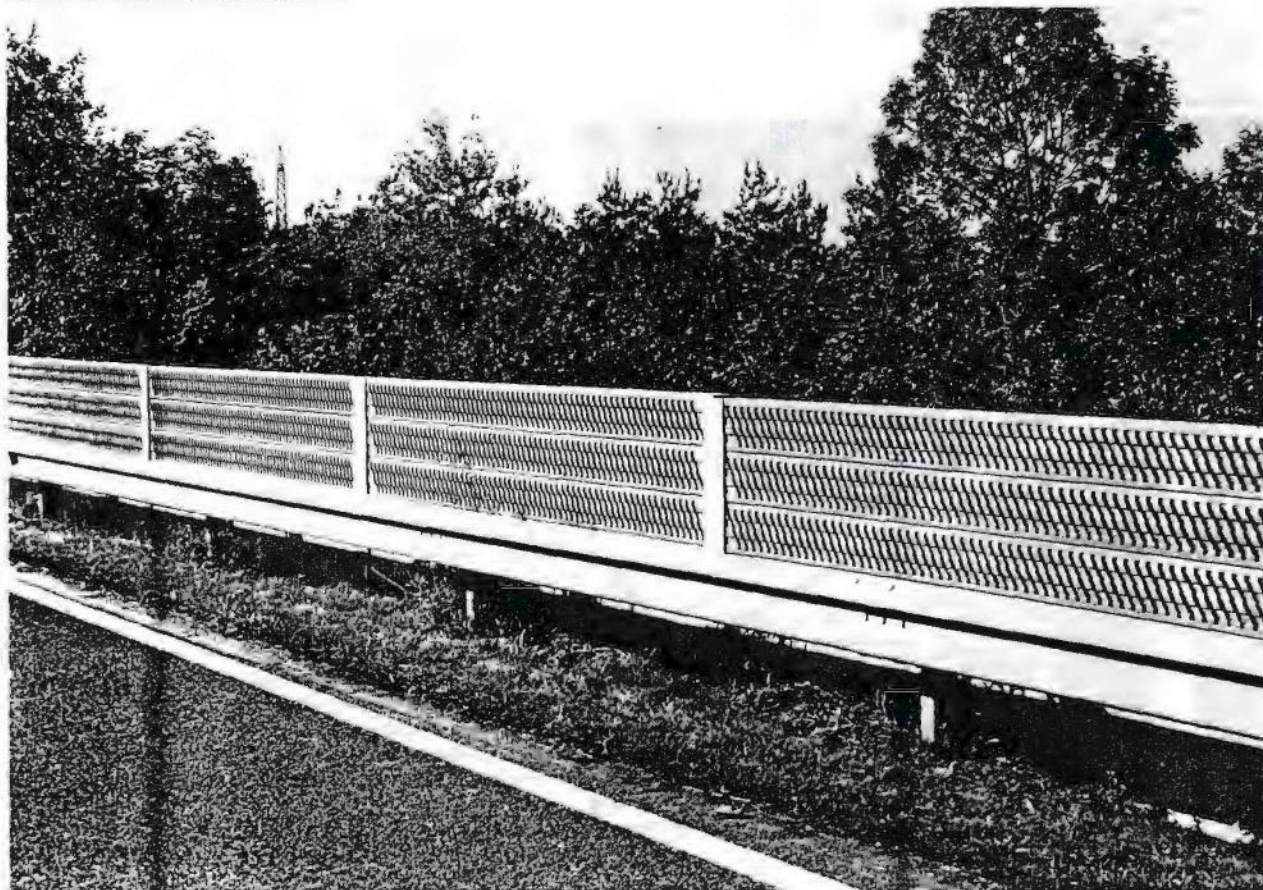
Pared protectora contra ruidos

La pared protectora GREINER contra ruidos 93

- está hecha en su 90% de desechos mixtos de material plástico y esponjoso de las basuras de casa y de la industria
- tiene un efecto, según se quiera, absorbente, altamente absorbente o reflectante
- se emplea a lo largo de las autopistas, carreteras, vías férreas, instalaciones industriales y aeropuertos
- puede pintarse y configurarse como se desee individualmente
- es libre de mantenimiento y reciclable
- permite un montaje en extensiones de hasta 5 metros de largo

La firma G. A. Greiner Extrusionstechnik suministra estas instalaciones así como el know-how para la fabricación de este producto.

The Greiner Noise Protection Wall 93 ▼



Power Alcohol Plants

In some agricultural countries, in particular the USA, power alcohol has long been in use as an engine fuel additive. Vogelbusch have been in on this since the beginning ten years ago, when their first power alcohol plants went into operation there – with processing know-how, engineering and technical service. In the meantime these economically successful plants have been enlarged and new ones added, also applying new technologies, as for instance alcohol dehydration using molecular sieves.

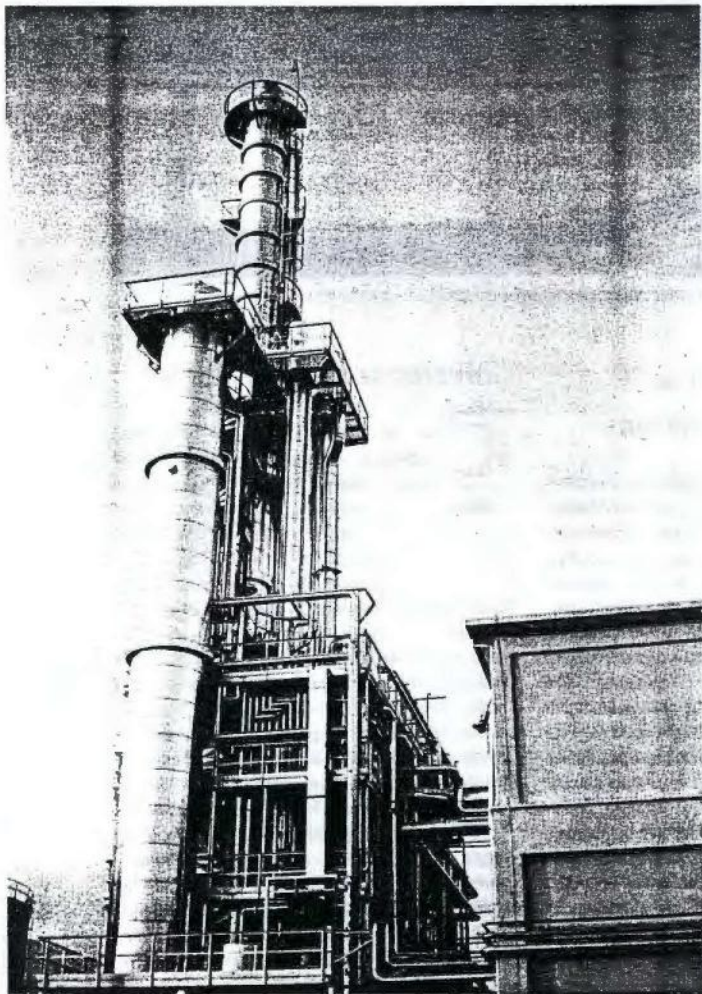
Vogelbusch are active in general in the biotechnological sector, mainly applying their own Vogelbusch knowhow and specialise among other things (citric acid, yeast, vinegar) in the installation of plants for the production of various kinds of alcohol from many different raw materials. Vogelbusch offer their own technology for alcohol production with services ranging from process knowhow to turnkey plants.

Bioethanolanlagen

Als Treibstoffzusatz ist Bioethanol in einigen Agrarländern, vor allem aber in den USA, schon lange ein Begriff. Vogelbusch war von Anfang an dabei, als dort vor über 10 Jahren die ersten „Power Alcohol“-Anlagen in Betrieb gingen: mit Prozeß-Know-how, Engineering, technischem Service. Inzwischen wurden diese wirtschaftlich erfolgreichen Anlagen weiter ausgebaut und neue sind dazugekommen, auch unter Anwendung neuer Technologien, wie der Alkoholentwässerung mit Molekularsieben.

Vogelbusch ist generell im Bereich Biotechnologie tätig, vorrangig auf Basis des eigenen Vogelbusch Know-hows und unter anderem (Zitronensäure, Hefe, Essig) auf den Bau von Alkoholanlagen zur Produktion von Alkohol aller Art aus den verschiedensten Rohstoffen spezialisiert. Vogelbusch bietet eigene Verfahren an, wobei der Leistungsumfang vom reinen Prozeßpaket bis zur schlüsselfertigen Anlage reicht.

Multipurpose alcohol plant in Italy ▼



VOGELBUSCH
Gesellschaft m. b. H.

A-1050 Wien
Blechturmstraße 11
Telefon: +43/1/546 61
Telex: 132 144
Telefax: +43/1/545 29 79
☐ Deutsch, English, Français,
Español, Italiano

Fabrication de bioéthanol

Le bioéthanol est déjà utilisé depuis un certain temps comme additif aux combustibles dans quelques pays agricoles, en particulier aux Etats-Unis. Vogelbusch était de la partie - avec savoir-faire process, ingénierie et assistance technique - lorsque, il y a plus de dix ans de cela, les premières installations de "Power alcohol" ont été mises en service. Entre temps, ces installations déjà intéressantes à l'époque ont été perfectionnées; de nouvelles installations ont été élaborées, faisant appel notamment à des technologies nouvelles telles que la déshydratation de l'alcool à l'aide de filtres moléculaires. Vogelbusch intervient d'une façon générale dans le domaine de la biotechnologie où il apporte son propre savoir-faire (acide citrique, levure, vinaigre) et plus particulièrement dans la construction d'installations de production d'alcools de tous types à partir de différentes matières premières. Vogelbusch concède son savoir-faire, ses prestations allant du simple procédé aux installations complètes clé en main.

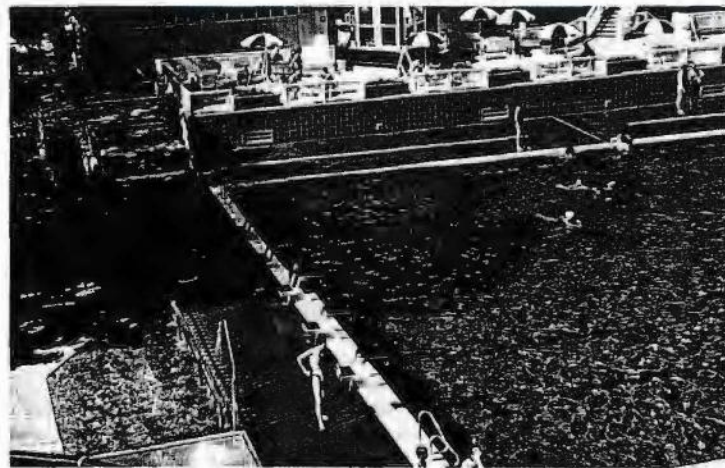
Instalaciones de bioetanol

En algunos países agrícolas, pero sobre todo en los EE. UU., el bioetanol es conocido desde hace tiempo como aditamento para el combustible. Vogelbusch participó desde el principio cuando allí se pusieron en marcha las primeras instalaciones "Power Alcohol", hace 10 años, con el know-how del procesamiento, engineering y servicio técnico. Entretanto esas instalaciones de tanto éxito económico se han seguido perfeccionando y se les han añadido nuevas, incluso empleando nuevas tecnologías, como la de la deshidratación de alcohol con cribas moleculares. Vogelbusch trabaja generalmente en el campo de biotecnología, pero basándose en su propio know-how Vogelbusch y aparte de sus otros trabajos (ácido, cítrico, levadura, vinagre) se ha especializado en la construcción de instalaciones para la producción de todo tipo de alcoholes de distintas materias primas. Vogelbusch ofrece procedimientos propios. El volumen de sus prestaciones va desde el paquete de meros procesos hasta la instalación llave en mano.

Weight-supporting Solar Collector



With the development of Sport Solar the firm Solkav-Solartechnik has now entered the market with the world's first weight-supporting solar surfacing. This new product offers the leisure industry in particular the possibility of using a surface in more than one way. Sport-Solar is suitable for use as a solar collector for heating swimming pools, as a base for skating rinks in winter, as a surfacing for various ball games, as a non-slip surround for swimming-pools or, in conjunction with a heat pump, for heating service water or powering a low-temperature heating system. Available in the colours black, red, green and blue, Sport-Solar is a surfacing 2.5 cm thick containing the entire technology for solar collector, absorber and coolant carrier for a salt water/water heat pump.



▲ Sport-Solar as swimming-pool surround

Begehrter Sonnenkollektor

Mit der Entwicklung von Sport-Solar ist es der Firma Solkav-Solartechnik gelungen, den ersten begehrten Solarbelag auf den Markt zu bringen. Dieses Produkt bietet vor allem der Freizeitindustrie die Möglichkeit, eine Fläche mehrfach zu nutzen. Sport-Solar eignet sich als Sonnenkollektor für die Beheizung eines Schwimmbeckens, als Untergrund für eine Kunsteisfläche im Winter, als Fläche für Ballspielplätze oder als rutschfeste Beckenumrandung und mit Hilfe einer Wärmepumpe zur Brauchwassererwärmung oder zum Betrieb einer Niedertemperaturheizung. Sport-Solar, in den Farben schwarz, rot, grün und blau lieferbar, ist ein Belag, dessen 2,5 cm starke Schicht die gesamte Technik eines Sonnenkollektors, Absorbers und Kältemittelträgers für eine Sole-Wasser-Wärmepumpe enthält.



▲ Sport-Solar as solar plant, sports ground and base for skating rink

Collecteur solaire se prêtant à la circulation

En développant Sport-Solar, l'entreprise autrichienne Solkav-Solartechnik a réussi à lancer le premier revêtement solaire se prêtant à la circulation. Ce nouveau produit permet, surtout dans l'industrie des loisirs, d'utiliser une même surface de plusieurs façons. Sport-Solar peut servir de collecteur solaire pour le chauffage d'une piscine, d'infrastructure d'une patinoire en hiver, de revêtement pour terrains de jeu ou de bordure de piscine antidérapante; en combinaison avec une thermopompe, il peut servir au chauffage de l'eau non potable ou au fonctionnement d'une installation de chauffage à basse température. Sport-Solar, livrable en noir, rouge, vert ou bleu, est un revêtement dont la couche de 2,5 cm d'épaisseur réunit les fonctions d'un collecteur solaire, d'un absorbeur et d'un caloporteur pour thermopompe d'eau salée.

Colector solar transitable

Con el „Sport-Solar“ la empresa austríaca Solkav-Solartechnik ha desarrollado el primer revestimiento solar previsto para paso de personas. Este producto novísimo permite el uso múltiple de la misma superficie, en particular para la industria del tiempo libre. El „Sport-Solar“ puede emplearse como colector de energía solar para la calefacción de piscinas, como subsuelo de pistas de hielo artificial en el invierno, como revestimiento del suelo para canchas deportivas, o como borde antideslizante para piscinas, y, mediante una bomba calorífica, para el calentamiento de agua o el accionamiento de una calefacción de baja temperatura. El „Sport-Solar“, disponible en los colores negro, rojo, verde y azul, es un revestimiento de 2,5 cm de espesor que reúne la técnica completa de un colector de energía solar, de un dispositivo de absorción y de un fluido secundario para una bomba calorífica de agua salobre.

**SOLKAV SOLARTECHNIK
Ges.m.b.H.**

A-3150 Wilhelmsburg
Industriegebiet Nord
Telefon: +43/2746/243 00
Telefax: +43/2746/24 30 43
☐ Deutsch, English, Français

Pollution Control for the Wood Industry

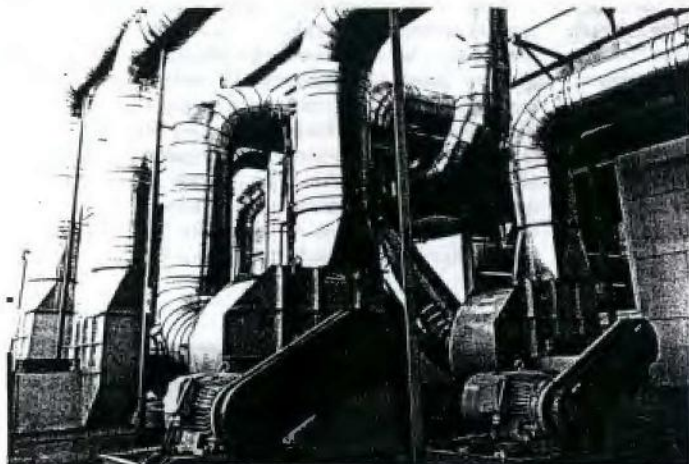
The firm Polytechnik is one of the most important suppliers of complete solutions to wood industry problems in the form of stoker systems (underfeed and reciprocating grate), shredding plants, spraying booth equipment, suction and filtering plants and newly developed spark extinction facilities. For more than 30 years now Polytechnik have been concerned with the problems of the wood industry and can offer individual solutions for all sectors whether small, medium-sized or large enterprises: sawmills, carpenters' shops, joineries, furniture producers, solid wood board producers, etc. The firm's comprehensive service network ensures quick and optimum attention to customers' requirements.

Umweltschutz für die Holzindustrie

Die Firma Polytechnik ist in der Holzindustrie einer der bedeutendsten Anbieter von Komplettlösungen wie Feuerungsanlagen (System „Unterschub“ und „Vorschubrost“), Zerkleinerungsanlagen, Spritzraumeinrichtungen, Absaug- und Filteranlagen sowie neu entwickelte Funkenlöschanlagen. Polytechnik beschäftigt sich seit nunmehr 30 Jahren mit den Problemen der Holzindustrie und bietet individuelle Lösungen, egal ob für Klein- oder Mittelbetriebe, Sägewerke, Zimmereien, Tischlereien, Großbetriebe, die Möbeldindustrie oder Massivholzplattenwerke. Das weit verzweigte Servicenetz der Firma gewährleistet eine optimale und rasche Kundenbetreuung.



Jet filter system ▶



Chip fan array ▲

POLYTECHNIK
Ges. m. b. H. & Co. KG
Klima-Luft-Wärmeanlagen

A-2564 Weissenbach
Fahrafeld 69
Telefon: +43/2674/8125-0
Telefax: +43/2674/8125-13
☑ Deutsch, English

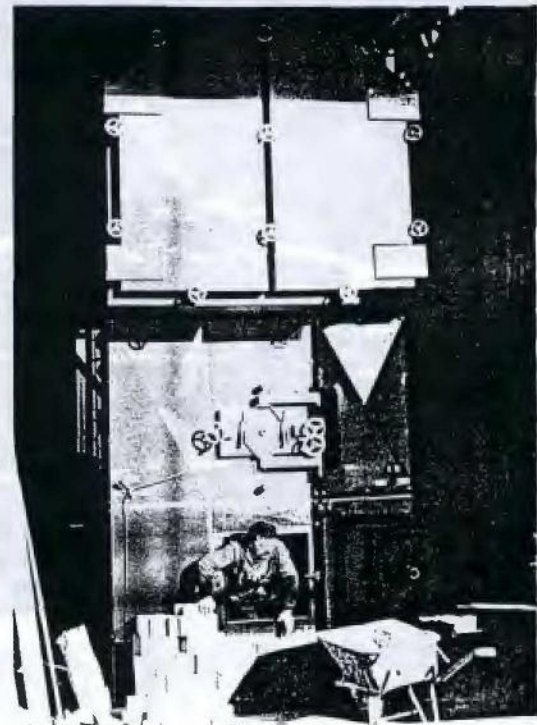
Bricklining of a furnace ▶

Protection de l'environnement dans l'industrie du bois

Polytechnik, qui s'occupe depuis plus de 30 ans des problèmes de l'industrie du bois est un des principaux fournisseurs d'installations complètes telles que: installations de combustion (foyers à propulsion inférieure et grilles à avance), installations de déchetage, chambres de pistelage avec système d'aspiration, installations d'aspiration et de filtrage, ainsi que ses nouveaux extincteurs d'étincelles. Cette société étudie volontiers des solutions sur mesure pour petites ou moyennes entreprises telles que scieries, charpenteries ou menuiseries de même que pour l'industrie du meuble ou les usines de panneaux de bois massifs. Son réseau de service après-vente très étendu assure un suivi optimal et des interventions rapides.

Protección del medioambiente en la industria de madera

La firma Polytechnik es en la industria de madera uno de los oferidores más importantes de soluciones completas como instalaciones de hogares (sistema "carga por debajo" y "parrilla de avance"), instalaciones trituradoras, instalaciones de pulverizado, instalaciones de aspiración y de filtraje, así como instalaciones apagachispas, recientemente desarrolladas. Polytechnik se ocupa desde hace más de 30 años de los problemas de la industria de madera y ofrece soluciones individuales, tanto para empresas pequeñas como medianas, para aserraderos, carpinterías, talleres de carpintería, empresas grandes, para la industria de muebles o talleres de planchas de madera maciza. La red de servicio ampliamente ramificada que ofrece la empresa garantiza al cliente un asesoramiento óptimo y rápido.



Cogeneration System

For almost 20 years Jenbacher Energiesysteme AG have specialised in the development and production of alternative energy supply systems. Today gas-powered cogeneration systems are the company's top-selling product. Thanks to advances in combustion engineering low-emission gas engines can be linked to generators for electricity production and to heat exchangers for heat utilisation, thus creating a compact unit for local needs that will produce both current and heat with an efficiency of up to 90%. In 1992 the firm's exports accounted for 84% of total production. To consolidate their presence worldwide Jenbacher Energiesysteme AG have founded subsidiaries in Germany, the Netherlands, Italy, Denmark and the USA.

Kraft-Wärme-Kopplung

Die Jenbacher Energiesysteme AG konzentriert sich seit fast 20 Jahren auf die Entwicklung und Herstellung von alternativen Energieversorgungssystemen. Heute sind gasbetriebene Kraft-Wärme-Kopplungen Hauptumsatzträger des Unternehmens. Die Fortschritte in der Verbrennungstechnik ermöglichen es, durch Kombination von emissionsarmen Gasmotoren mit Generatoren zur Stromerzeugung und Wärmetauschern zur Wärmenutzung eine kompakte Einheit für dezentralen Bedarf zu schaffen, die gleich-

zeitig Strom und Wärme erzeugt und Wirkungsgrade bis zu 90% erreicht. Im Jahr 1992 betrug der Exportanteil der Jenbacher Energiesysteme AG 84%. Zur Verstärkung der internationalen Präsenz haben die Jenbacher Tochterunternehmen in Deutschland, den Niederlanden, Italien, Dänemark und den USA.

Cogénération chaleur-électricité

Jenbacher Energiesysteme AG se concentre depuis près de 20 ans sur le développement et la production de systèmes de génération d'énergie alternatifs. Les systèmes de cogénération chaleur-électricité fonctionnant au gaz figurent aujourd'hui en première place dans le chiffre d'affaires de la société. Les progrès accomplis dans la technique de combustion permettent de combiner des moteurs à gaz à faible taux d'émissions avec des générateurs pour la production de courant et des échangeurs de chaleur pour l'utilisation de l'énergie thermique et d'obtenir ainsi des unités décentralisées produisant à la fois chaleur et électricité, avec un rendement allant jusqu'à 90%. En 1992, Jenbacher Energiesysteme AG exportait 84 % de sa production. Pour affirmer sa présence à l'étranger, la société a créé des filiales en Allemagne, aux Pays-Bas, en Italie, au Danemark et aux U.S.A.

JENBACHER Energiesysteme AG

A-6200 Jenbach

Telefon: +43/5244/2291-0

Telex: 533 757 jwjb

Telefax: +43/5244/3255

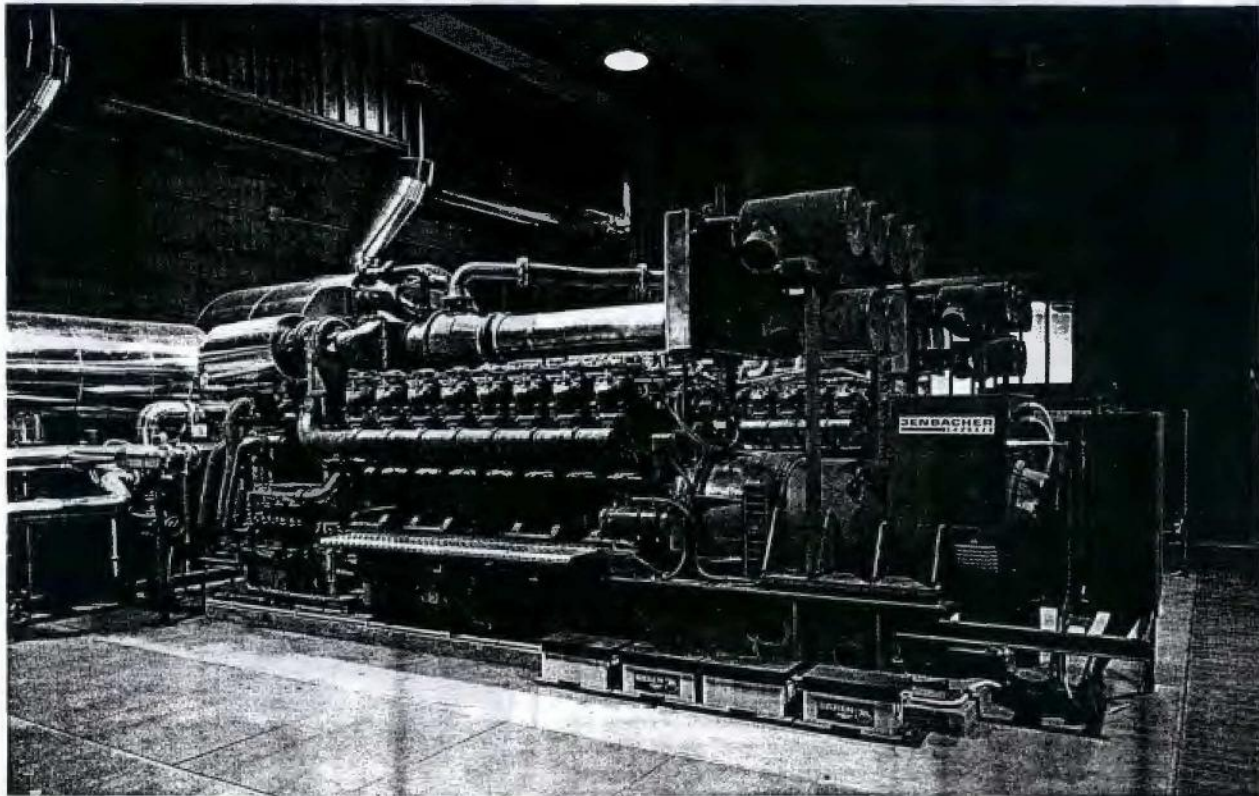
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Acoplamiento fuerza – calor

La Jenbacher Energiesysteme A. G. se concentra desde hace casi 20 años en el desarrollo y la producción de sistemas alternativos de abastecimiento de energía. Hoy en día los acoplamientos de fuerza – calor, accionados por gas, son los pilares principales de venta de la empresa. Los progresos en la técnica de combustión han posibilitado – combinando motores de gas, pobres en emisiones, con generadores para la producción de corriente y recuperadores térmicos para el aprovechamiento de calor – crear una unidad para las necesidades descentralizadas, que genera simultáneamente corriente y calor y alcanza rendimientos de hasta 90%. En el año 1992 las exportaciones de la Jenbacher Energiesysteme A. G. llegaron al 84% de la producción. Para reforzar su presencia internacional se tienen empresas filiales de Jenbacher en Alemania, en los Países Bajos, Italia, Dinamarca y en los EE. UU.

Cogeneration plant in Sestriere/Italy: 4xJMS 616 GS-N/LC ▼



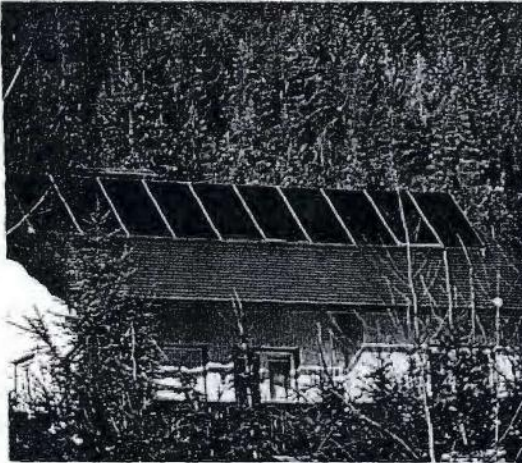


Solar Collectors

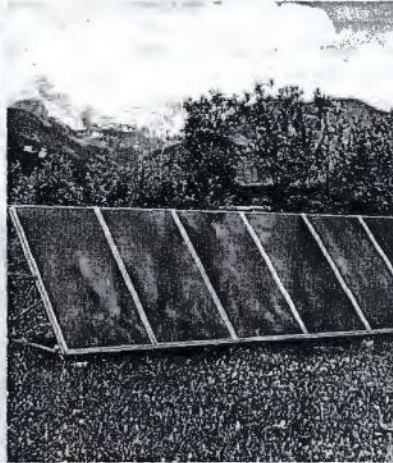
The firm Korb-Solar has been engaged for years in the development and production of solar collectors for water heating purposes. Designed specially for space heating, this high-capacity collector has a unique absorber system of special steel plate. The use of large-area

heat transfer and high-transparency prism safety glass results in the highest degree of efficiency (over 92%) yet achieved in collector construction. Screw-together components are provided for fixing and installing the collectors. The company is looking for further marketing partners.

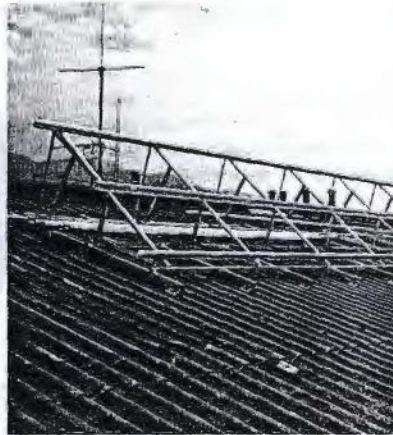
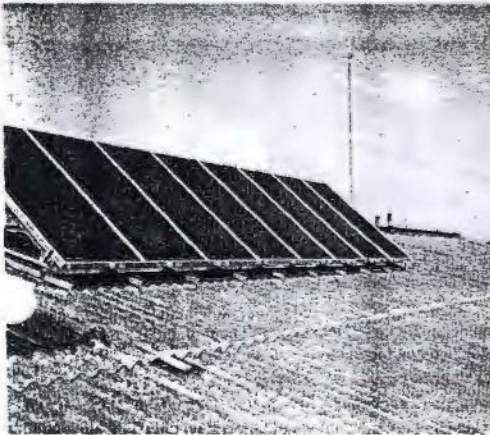
▼ Solar collector system for space and water heating



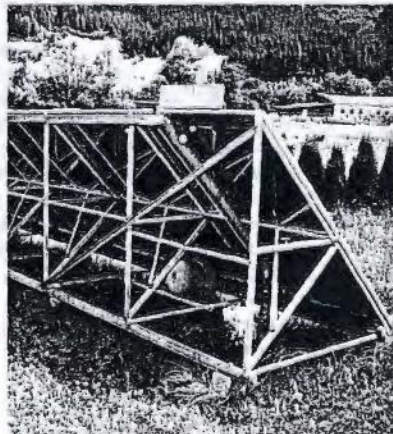
Solar collector system for water heating ▼



▼ Solar collector system for water heating



▼ Structure of aluminium components for collector installation ▲



KORBEL-SOLAR
Systemtechnik

A-8940 Liezen
Waldweg 30
Telefon: +43/3612/221 67, 222 45
Telefax: +43/3612/221 67
☐ Deutsch, English

Solarkollektor

Die Firma Korb Solar beschäftigt sich seit Jahren mit der Entwicklung und Produktion von Solarkollektoren für die Warmwasseraufbereitung. Dieser Hochleistungskollektor wird speziell für die Raumheizung eingesetzt und hat ein einzigartiges Absorbersystem aus Edelstahlblech. Durch direkte flächenartige Wärmeübertragung und ein hochtransparentes Prismensicherheitsglas wird der höchste Wirkungsgrad im Kollektorbau erzielt (über 92%). Für die Befestigung und Aufstellung der Kollektoren sind verschraubbare Alu-Komponenten vorgesehen. Das Unternehmen ist auf der Suche nach weiteren Vertriebspartnern.

Collecteur solaire

La société Korb Solar s'occupe depuis des années du développement et de la fabrication de collecteurs solaires pour la production d'eau chaude. Son collecteur hautes performances qui est principalement utilisé pour le chauffage des locaux est doté d'un absorbeur spécial en tôles d'acier inoxydable. Grâce à la transmission de chaleur directe, qui se fait en nappe, et à l'utilisation d'un verre de sécurité prismatique d'une extrême transparence, on obtient le plus haut rendement réalisable avec un collecteur solaire (plus de 92 %). Les collecteurs se montent au moyen d'éléments en aluminium.

La société recherche encore des partenaires pour la diffusion de ce produit.

Colectores solares

La firma Korb Solar se ocupa desde hace años del desarrollo y producción de colectores solares para la preparación de agua caliente. Este colector de alta potencia se emplea especialmente en la calefacción de locales y tiene un sistema de absorción único, de chapa de acero fino. Gracias a la transmisión directa y de superficie del calor y gracias a un vidrio prismático de seguridad, altamente transparente, se alcanza el rendimiento más alto en la construcción de colectores (más del 92%). Para la fijación y colocación de los colectores se han previsto componentes de atornillado de aluminio. La empresa busca más socios de distribución y de venta.

Energy-saving Heating Systems



The firm ID Energiesysteme specialises in heat pumps, buffer systems and solar collectors. These alternative energy-saving heating systems account for 80% of sales. One speciality is the heating of one and two-family houses with monovalent heat pump systems. The lineup also includes an aluminium radiator highly suitable for low-temperature operation.

Energiesparende Heizanlagen

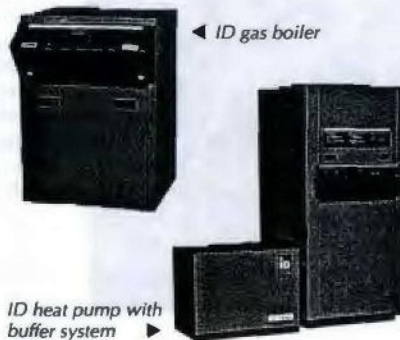
Die Firma ID-Energiesysteme ist auf Wärmepumpen, Puffersysteme und Solarkollektoren spezialisiert. Die alternativen, energiesparenden Heizanlagen machen 80% des Umsatzes aus. Eine Spezialität ist die Beheizung von Ein- bis Zweifamilienhäusern mit monovalenten Wärmepumpenanlagen. Im Erzeugungsprogramm steht auch ein Alu-Radiator, der sich sehr gut für den Nieder-temperaturbetrieb eignet.

Systèmes de chauffage à faible dépense d'énergie

La société ID-Energiesysteme est spécialisée dans les pompes thermiques, les systèmes tampons et les collecteurs solaires. Les installations alternatives, à faible dépense d'énergie représentent 80% de son chiffre d'affaires. Une de ses spécialités est le chauffage de maisons individuelles à l'aide d'installations à pompes thermiques monovalentes. On trouve également à son programme un radiateur en aluminium très avantageux pour l'utilisation à basse température.

Instalaciones de calefacción ahorrativas de energía

La empresa ID-Energiesysteme se ha especializado en bombas caloríficas, sistemas amortiguadores y colectores solares. Las instalaciones de calefacción alternativas y ahorrativas de calor constituyen el 80% de la venta total. Una especialidad es el calentamiento de casas de una hasta dos familias con instalaciones monovalentes de bombas caloríficas. En el programa de producción figura también un radiador de aluminio que se presta muy bien para el régimen de temperaturas bajas.



ID heat pump with buffer system ▶

◀ ID gas boiler

ID – Energiesysteme
Gesellschaft m. b. H.

A-9971 Matrei i. O.
Seblas 16-18
Telefon: +43/4875/6172
Telefax: +43/4875/6172-85
☎ Deutsch, English, Italiano

Mini Power Plants

Elektro Sinnhuber build mini power plants for remote buildings, far from the beaten track, in particular for hunting lodges and mountain huts, ranger and research stations. The plants are geared to water supply and geographic conditions. The smallest power plant can be connected to a drinking water main of only 3/4" diameter. Electricity production ranges from 0.2 to 160 kW. The firm's lineup also includes solar electric plants e. g. for lighting, refrigerators and freezers, water pumps and various small electrical appliances.

ELEKTRO SINNHUBER
GesmbH & Co. KG

A-5730 Mittersill
Hintergasse 3
Telefon: +43/6562/324
Telefax: +43/6562/4607
☎ Deutsch, English

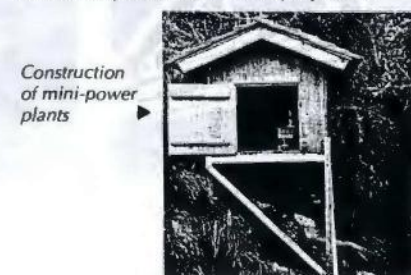
Elektro Sinnhuber baut Klein- und Kleinstwasserkraftwerke für entlegene Objekte, fern jeder Zivilisation, so vor allem für Jagd- und alpine Schutzhütten, Ranger und Forschungsstationen. Die Anlagen werden dem jeweiligen Wasserangebot und den geografischen Verhältnissen angepaßt. Das kleinste Kraftwerk kann bereits an eine Trinkwasserleitung von 3/4 Zoll angeschlossen werden. Die Leistungsausbeute reicht von 0,2 bis 160 Kilowatt. Zum weiteren Produktionsprogramm gehören solarelektrische Anlagen, z. B. für Beleuchtung, Kühl- und Gefriergeräte, Wasserpumpen und diverse elektrische Kleingeräte.

Elektro Sinnhuber construit des minis-usines hydroélectriques pour implantations isolées, loin du monde civilisé, notamment pour les abris de chasse et les refuges de haute montagne, les ranchs et les stations de recherche. Ces équipements sont adaptés aux ressources en eau et aux conditions géographiques du lieu. Le plus petit modèle peut être raccordé à une conduite d'eau potable de 3/4". Le rendement s'étagé entre 0,2 et 160 kilowatts. Cette société propose également des installations solaires électriques, p.ex. pour l'éclairage, des appareils de refroidissement et de congélation, des pompes à eau ainsi que divers appareillages électriques.



◀ Construction of solar-electric plants for remote buildings

Elektro Sinnhuber construye centrales hidráulicas pequeñas y „de bolsillo" para construcciones apartadas, lejos de toda civilización, así sobre todo para chozas de caza y refugios alpestres, estaciones „ranger" y de exploración. Las instalaciones se adaptan a la correspondiente existencia de agua y a las condiciones geográficas. Le central hidráulica „de bolsillo" puede conectarse ya a una tubería de agua potable de 3/4 pulgadas. La gama de potencia va de 0,2 hasta 160 kilovatios. Su programa de producción incluye también instalaciones eléctricas solares, como por ej. para alumbrado, para refrigeradores y congeladores, bombas de agua y para diversos aparatos eléctricos pequeños.



Construction of mini-power plants ▶

Außenhandelsstellen der Wirtschaftskammer Österreich

Austrian Foreign Trade Offices

Délégations Commerciales d'Autriche

Delegaciones Comerciales de Austria



Ägypten (Egypt)
P.O.B. 2470
6 A, Ismail Mohamed Street
Cairo/Arab. Republic of Egypt
Tel.: 34 11 150, 34 15 563, 34 07 607
Telex: 92261 (oetra un)
Telefax: 341 2892

Algerien (Algeria)
B.P. 734
DZ-16000 Alger-Gare/Algérie
10, Chemin Cpt. Hocine Slimane
(ex Glycines)
Alger/Algérie
Tel.: 69 01 33, 69 31 47, 69 34 60
Telex: 66100 (66100 atrad dz)
Telefax: 69 38 26

Argentinien (Argentina)
Casilla Correo Central 523
1000 Buenos Aires/Argentina
Cerrito 1294, piso 15°
1010 Buenos Aires/Argentina
Tel.: 325 15 46, 325 04 79, 325 03 98,
814 36 69
Telefax: 814 36 70

Australien (Australia)
19th floor, 1, York Street
Sydney NSW 2000/Australia
Tel.: 247 85 81
Telex: 24641 (austrad aa)
Telefax: 251 10 38 251 13 28

Belgien (Belgium)
479, Avenue Louise, Boite 52
B-1050 Bruxelles 5/Belgique
Tel.: 648 21 11
Telex: 22138 (autrad b)
Telefax: 640 12 69

Brasilien (Brazil)
Caixa Postal 1839
20.001-970 Rio de Janeiro - RJ/Brasil
Avenida Rio Branco 99 - 10. Stock
20040.004 Rio de Janeiro - RJ/Brasil
Tel.: 253 55 99
Telex: 2123207 (dcau br)
Telefax: 263 93 36

Bulgarien (Bulgaria)
Ul. Chan Krum 3
BG-1000 Sofia/Bulgarien
Tel.: 81 02 84, 81 35 56, 80 35 39
Telex: 22450 (auscom bg)
Telefax: 80 22 44

Chile
Casilla 165-D
Isidora Goveachea 2934
Of. 601, Las Condes
Santiago/Chile
Tel.: 233 05 57
Telefax: 233 69 71

China VR (Chinese P. R.)
Ta Yuan Office
Bldg. 2-6-2, Chaowai
Beijing 100600/
The People's Republic of China
Tel.: 532 16 77, 532 32 98,
532 33 05, 532 34 40
Telex: 22270 (ahst cn)
Telefax: 532 11 49

Portman Hotel
1376 Nanjing Xi Lu
200040 Shanghai/
The People's Republic of China
Tel.: 279 88 88
Telefax: 279 88 00

Côte d'Ivoire,
01 BP 1369
Abidjan 01/Côte d'Ivoire
Immeuble Aniaman
Stiege A, 9. Etage
Rue Alphonse Daudet/Côte d'Ivoire
Ecke Avenue Lamblin
Abidjan/Côte d'Ivoire
Tel.: 21 34 98, 21 53 61
Telex: 22190 (autrad ci)
Telefax: 21 78 67

Dänemark (Denmark)
Gronningen 5, III
DK-1270 Kobenhavn K./Danmark
Tel.: 33-11 14 12
Telex: 15164 (oehd dk)
Telefax: 33 91 14 13

Deutschland (Germany)
Bockenheimer Landstraße 2/18. Str.
D-60323 Frankfurt am Main/
Deutschland
Tel.: 97 10 12-0
Telefax: 97 10 12 29

Wilhelmstraße 65
D-10117 Berlin/Deutschland
Tel.: 238 62 00
Telefax: 391 36 01

Poststraße 23
D-20354 Hamburg/Deutschland
Tel.: 34 06 39
Telefax: 35 44 28

Bahnstraße 9
D-40212 Düsseldorf/Deutschland
Tel.: 32 40 36, 32 40 37
Telefax: 32 64 01

Promenadenplatz 12/N.
D-80333 München/Deutschland
Tel.: 22 52 88
Telefax: 22 58 87

Finnland (Finland)
Mannerheimintie 15 a B
FIN-00260 Helsinki/Finnland
Tel.: 40 82 88
Telefax: 40 96 20

Frankreich (France)
6, Avenue Pierre I^{er} de Serbie
F-75116 Paris/France
Tel.: 47 20 26 14
Telex: 290390 (autcom)
Telefax: 47 20 25 80

14, Quai Kléber
F-67080 Strasbourg Cédex/France
Tel.: 88 52 29 60
Telefax: 88 52 29 61

Griechenland (Greece)
Tritis Septemvriou 43 A
GR-10433 Athina
Tel.: 88 43 711
Telex: 216123 (oehd gr)
Telefax: 88 27 913

Großbritannien (Great Britain)
45 Princes Gate (Exhibition Road)
London SW 72 QA/Great Britain
Tel.: 584 44 11
Telefax: 584 25 65

Hongkong
13/F, Diamond Exchange Bld.,
8-10, Duddell Street, Central
Hongkong
Tel.: 522 23 88
Telefax: 810 64 93

Indien (India)
12 a, Amrita Shergill Marg
New Delhi 110 003/India
Tel.: 461 83 95, 461 83 97, 469 08 67
Telex: 3162259 (ahnd in)
Telefax: 461 87 42

Indonesien (Indonesia)
P.O.B. 2247
Jakarta 10001/Indonesia
Jalan Jambu 17
Jakarta-Pusat/Indonesia
Tel.: 314 52 42, 310 08 93, 32 59 58
Telex: 61108 (auscom ia)
Telefax: 32 73 42

Irak (Iraq)
P.O.B. 2079 Alwyah
Babil Area 923
House No. 23, Street No. 3 Jadrriyah
Baghdad/Iraq
Tel.: 776 11 64, 776 11 65
Telex: 212279 (oeba ik)
Telefax: 776 88 40

Iran
P.O.B. 11365-4648
Africa Expressway, Golgasht Street 21
Teheran/Iran
Tel.: 200 78 35, 200 75 59, 29 77 91
Telex: 212175 (acor ir)
Telefax: 200 78 34

Irland (Eire)
Merrion Hall, Strand Road,
Sandymount
P.O. Box 2506
Dublin 4/Eire
Tel.: 283 04 88
Telefax: 283 05 31

Israel
P.O.B. 3510
61034 Tel Aviv/Israel
Hayarkonstr. 198
Tel Aviv/Israel
Tel.: 522 66 41, 524 64 43, 524 06 39
Telefax: 522 40 71, 524 00 47

Italien (Italy)
Via Flaminia 158
I-00196 Roma/Italia
Tel.: 320 16 59, 320 16 92, 321 84 96,
Telefax: 36 13 579

Piazza del Duomo 20
I-20122 Milano/Italia
Tel.: 86 61 68
Telefax: 87 73 19

Via Dante Alighieri 5
I-34122 Trieste/Italia
Tel.: 364 182, 364 226, 364 640
Telefax: 734 369

Japan
P.O.B. Azabu 4, Tokyo 106/Japan
13-3, 3-Chome, Motoazabu
Minato-ku
Tokyo/Japan
Tel.: 3403 17 77
Telefax: 34 03 34 07

Nichijukin Honmachi Bldg. 9 F
3-2-6, Honmachi
Chuo-ku, Osaka 541/Japan
Tel.: 241 84 11/12/13/14
Telefax: 241 84 15

Jordanien (Jordan)
P.O.B. 5287
Burqah Street 3,
Jabal-Amman, Near
Prince Abdalla Square
(former 4th Circle)
(next to South-Korean Embassy,
Amman 11183/Jordan
Tel.: 67 47 50, 67 48 52
Telex: 22409 (autrad jo)
Telefax: 66 05 31

Jugoslawien (Yugoslavia)
Postanski jah 361,
YU-11001 Beograd/Yugoslavia
Terazije 45/IV
YU-11000 Beograd/Yugoslavia
Tel.: 33 05 87, 33 62 79, 33 50 88
Telex: 11611 (austgr vu)
Telefax: 33 19 62

Kanada (Canada)
2 Bloor Street East, Suite 3310
Toronto Ontario, M4W 1A8 Canada
Tel.: 967 33 48, 967 33 80
Telex: 623196 (autrad tor)
Telefax: 967 41 01

1010 Quest. rue Sherbrooke,
Suite 1410
Montréal Qué. H3A 2R7/Canada
Tel.: 849 37 08/9
Telex: 5267391 (austrocom mt)
Telefax: 849 95 77

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Tel.: 683 58 08, 683 86 95, 68 12 45
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Telefax: 662 85 28

Kenia (Kenya)
P.O.B. 30112
14 th Floor, Anniversary Towers
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Nairobi/Kenya
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Telex: 22503 (autrad)
Telefax: 33 66 65

Kolumbien (Colombia)
Apartado Aéreo 12308
Calle 100 Nr. 8 A-55, Oficina 708
World Trade Center, Torre C
Santafé de Bogotá D.C./Colombia
Tel.: 621 16 64, 621 15 85,
616 08 50, 616 08 29
Télex: 41373 (aust co)
Telefax: 616 09 64

Korea, Rep. (Republic of Korea)
C.P.O. Box 6417
Seoul 100-664/Republic of Korea
Kyobo Bldg., Room 1914
1-1, Chong-ro, 1-ka, Chongro-ku
Seoul 110-714
Tel.: 732-66 49, 732-73 30
Telefax: 732 43 37

Kroatien (Croatia)
Postanski pretinac 25
HR-41000 Zagreb
Illica 12/2.St.
HR-41000 Zagreb
Tel.: 275 044
Telex: 22323 (austgrg)
Telefax: 278 199

Kuwait
P.O.Box 44180 Hawally
32056 Hawally/Kuwait
Rawdah Area
Block 4, Straße 48
Haus Nr. 6
Kuwait/Kuwait
Tel.: 25 63 065, 25 63 067, 25 63 068
Telefax: 25 63 064

Libanon (Lebanon)
B.P. 11-420 Beyrouth/Liban
Immeuble Sammakieh
Rue Mme. Curie (près Hotel Bristol)
Beyrouth/Liban
Tel.: 135 42 38, 135 42 14
Telex: 23255, 42047 (le Autrad)
Telefax: 160 22 20

Libyen (Libya)
P.O.Box 5072
Shara el Amir
Boulevard el Jazairi
Tripoli/Libya
Tel.: 35 1 76-77
Telex: 20078 (austcom ly)
Telefax: 37322

Malaysia
P.O.B. 10.555
50716 Kuala Lumpur
Komplek Kewangan
10th floor, Jalan Raja Chulan No. 82
Kuala Lumpur/Malaysia
Tel.: 14 724, 26 14 836, 26 14 958,
26 21 148
Telefax: 26 13 130

Marokko (Morocco)
B.P. 13822
45. Ave. Hassan II/5/10
Casablanca 01/Maroc
Tel.: 2669 04, 2232 82
Telex: 22010 (autrad 22010 m)
Telefax: 22 10 83

Mexiko (México)
Ap. Postal 105-242
11581 Mexico, D.F.
Avenida Presidente Mazarik 101,
11. Stock
Col. Chapultepec Morales
Delegación Miguel Hidalgo
11570 Mexico/D.F. (Polanco)
Tel.: 254 44 38, 254 44 28, 254 44 18
Telex: 192479007
Telefax: 255 16 65

Niederlande (Netherlands)
Lange Voorhout 58 a
2514 EG-Den Haag/Nederland
Tel.: 365 49 16
Telefax: 365 73 21

Nigeria
P.O.B. 1217
Western House, 7th floor
8-10, Broad Street
Lagos/Nigeria
Tel.: 263 68 27, 263 68 28
Telex: 21285 (oelag ng)
Telefax: 263 11 24

Norwegen (Norway)
Oscars Gate 81
N-0256 Oslo/Norge
Tel.: 22 55 57 30, 22 55 56 51
Telefax: 22 55 66 22

Pakistan
43/1/N, Razi Road Block 6,
P.E.C.H.S.
Karachi - 75400 Pakistan
Tel.: 454 91 11, 454 91 12
Telex: 2795 (ahst pk)
Telefax: 454 73 82

Philippinen (Philippines)
P.O.B. 1215
Makati Central Post Office,
1252 Makati, Metro Manila/Philippines
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Corner Makati Ave.
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Tel.: 81 81 581, 81 86 116, 81 81 614
Telex: 14849 (ahstm ps)
Telefax: 810 37 13

Polen (Poland)
Skrytka Pocztowa 2
PL-00-955 Warszawa/Republik Polen
Aleje Ujazdowskie 22/4
PL 00-540 Warszawa/Republik Polen
Tel.: 29 64 74, 29 59 13, 62 54 103
Telex: 813609 (oehd pl)
Telefax: 29 32 47

Portugal
Rua Rodrigues Sampaio, 18-5°
P-110 Lisboa/Portugal
Tel.: 12459 (autrad p)
Telefax: 35 22 489

Rumänien (Romania)
Strada Clopotarii Vechi 4
R-71126 Bukarest/Rumänien
Tel.: 659 45 90, 312 03 35
Telex: 11291 (atrad r)
Telefax: 312 06 14

Rußland (Russia)
Starokonjuschennyj Pereulok 1
119034 Moskau/Rußland
Tel. 20 12 844, 20 17 334
Telex: 413399 (atorg su),
413014 (atorg su)
Telefax: 230 26 87

Saudi-Arabien (Saudi Arabia)
P.O.Box 94 362/Riyadh 11693
Chamber of Commerce Building,
Prince Abdul-Aziz Street
(formerly: Dhabab Street)
5th Floor, Suite 2
Riyadh 11693/Saudi Arabia
Tel.: 404 10 10, 404 03 34, 401 52 11
Telex: 406555 (auscom sj)
Telefax: 404 29 75

P.O.Box 1706/Jeddah 21441
New Jeddah Chamber
of Commerce & Industry Building
Al-Ruwais
Jeddah 21441/Saudi Arabia
Tel.: 651 18 16, 651 23 04
Telefax: 653 37 64

Schweden (Sweden)
Karlplan 12
S-11520 Stockholm/Schweden
Tel.: 667 01 30
Telex: 11459 (oehdsto s)
Telefax: 660 83 78

Schweiz (Switzerland)
Talstraße 65
CH-8001 Zürich/Schweiz
Tel.: 212 48 00
Telefax: 212 28 38

Simbabwe (Zimbabwe)
P.O.B. 1850
51 Jason Moyo Avenue
Globe House, 6th Floor
Harare/Simbabwe
Tel.: 75 24 14, 75 16 85, 75 02 83
Telex: 26485 (atcom zw)
Telefax: 75 14 38

Singapur (Singapore)
Tanglin P.O.B. 238
Singapore 9124/Rep. of Singapore
1, Scotts Road
24-05/06 Shaw Centre
Singapore 0922/Rep. of Singapore
Tel.: 23 54 088, 23 54 089, 73 45 004
Telex: 21133 (autrad)
Telefax: 737 1202

Slowakei (Slovakia)
P.O. Box 138
SK-81499 Bratislava/SR
Zelena ulica 1
SK-81100 Bratislava/SR
Tel.: 33 04 43, 33 05 93, 33 18 07
Telex: 92322 (oehds sk)
Telefax: 33 23 94

Slowenien (Slovenia)
Nazorjeva 6
Poštni predal 313
SI-61001 Ljubljana/Slovenija
Tel.: 125 22 54, 125 22 44
Telefax: 125 32 61

Spanien (Spain)
Orseno, 11-6°
E-28020 Madrid/España
Tel. 556 43 62, 556 43 66, 556 43 58
Telefax: 237 78 21

Balmes, 200-79/1a
E-08006 Barcelona/España
Tel.: 218 44 59, 218 77 10, 237 97 55
Telefax: 237 76 21

Südafrika Rep.
(Rep. of South Africa)
Private Bag X18,
Parklands (Johannesburg)
ZA-2121 Republic of South Africa
Cradock Heights, 2nd Floor
21 Cradock Avenue
Rosebank (Johannesburg)
Tel.: 442 71 00
Telex: 427703 (sa)
Telefax: 442 83 04

Syrien (Syria)
P.O.B. 7659
Mezze, Eastern Villas
Farabi Street 116 a
Damascus/Syria
Tel.: 224 46 16, 224 47 71
Telex: 411705 (autrad sy)
Telefax: 224 85 36

Taiwan
P.O.B. 87-630
Bank Tower, Suite 608
205, Tun Hwa North Road
Taipei/Taiwan
Tel.: 715 52 20, 715 52 21
Telex: 28864 (autradel)
Telefax: 717 32 42

Thailand
G.P.O.B. 495
Bangkok 10501/Thailand
140 Wireless Road
(Kian Gwan Bldg. 1, 9th floor)
Bangkok 10 330/Thailand
Tel.: 25 14 173, 25 14 174
Telex: 82864 (autrad th)
Telefax: 25 33 567

Tschechien (Czechia)
Václavské náměstí 12
2543 Praha 1/CR
Tel.: 24 22 75 94, 24 22 78 16, 24 22 57 15
Telefax: 24 22 10 68

Tunesien (Tunisia)
B.P. 4617
1025 Tunis rp/Tunisie
21, Avenue Charles Nicolle 1002,
Tunis-Belvedere/Tunisie
Tel.: 79 78 75, 79 99 30, 79 98 48
Telex: 15246 (autrad 15246 tn)
Telefax: 78 83 68

Türkei (Turkey)
P.K. 46 Kavaklıdere
06692 Ankara/Türkei
Kircicegi Sokak 8/2
Gaziosmanpasa
06700 Ankara/Türkei
Tel.: 436 12 72, 436 12 73
Telex: 42312 (oehr tr)
Telefax: 436 74 49

P.K. 219-Şişli
80223 Istanbul/Türkei
Halaskargazi Caddesi 401/A-4
80260 Istanbul-Şişli/Türkei
Tel.: 248 47 42, 248 47 43, 241 79 89
Telex: 39624 (oeha tr)
Telefax: 248 16 07

Ukraine
Holowposchtamt, a/c 62
252001 Kiew/Ukraine
Wulyzja Kujbyschewa 8-10,
Kimmata 1405
252023 Kiew 23/Ukraine
Tel.: 220 61 18, 220 52 18
Telex: 131199
Telefax: 220 71 49

Ungarn (Hungary)
Délibáb utca 21
H-1062 Budapest VI/Ungarn
Tel.: 268 04 00, 268 04 01, 268 04 02
Telefax: 268 04 08

USA
150 East 52nd Street, 32nd floor
New York, N.Y. 10022/USA
Tel.: 421 52 50
Telex: 422967 (atd ui)
Telefax: 751 46 75

500, North Michigan Avenue, Suite 1950
Chicago, IL 60611-3704/USA
Tel.: 644 55 56
Telefax: 644 65 26

11601 Wilshire Blvd., Suite 2420
Los Angeles/California 90025/USA
Tel.: 477 99 88
Telex: 192479030 (losangeles)
Telefax: 477 16 43

1300 Post Oak Blvd.
Suite 1700
Houston/Texas 77056/USA
Tel.: 850 88 88
Telefax: 850 78 57

1350 Connecticut Avenue N.W.,
Suite 501
Washington D.C. 20036/USA
Tel.: 835 89 62
Telex: 440261 (ahst dc)
Telefax: 835 89 60

Venezuela
Apartado 14027
Caracas 1011-A/Venezuela
Edificio Centro Profesional Eurobuilding
Piso 4, Oficina 4-A
Calle la Guairita
Urb. Chuao
Caracas/Venezuela
Tel.: 91 99 11, 91 98 44, 91 97 33
Télex: 27564 (gamma vc)
Telefax: 91 54 30

**Vereinigte Arabische Emirate
(United Arab Emirates)**
P.O.B. 3095
Adnic Building
6th Floor, Sheikh Khalifa Street
Abu Dhabi/United Arab Emirates
Tel.: 32 41 03
Telex: 22675 (oeb em)
Telefax: 34 31 33

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Herausgeber und Gesamtdredaktion:

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Traduction française: Andrée Pázmándy, tél. +43/1/43 13 97. – Traducción española: Calderón.

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Realisation: Internationale Werbegesellschaft m. b. H., Hoher Markt 12, A-1011 Vienna, Tel. +43/1/534 07-0,
Telefax +43/1/534 07-242;

English translation: P. W. Lupton, Tel. +43/1/923 08 83.

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Layout: Mag. Elisabeth Czerwenka, Tel. +43/1/36 16 02.

Print: Druckerei Ferdinand Berger & Söhne Ges.m.b.H.

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téléfax +43/1/502 06-255, adresse télégraphique: Außenhandel Wien, télex: 11-1871 (buka a)

Réalisation: Internationale Werbegesellschaft m. b. H., A-1011 Vienne, Hoher Markt 12, tél. +43/1/534 07-0,
téléfax +43/1/534 07-242;

English translation: P. W. Lupton, tél. +43/1/923 08 83.

Traduction française: Andrée Pázmándy, tél. +43/1/43 13 97. – Traducción española: Calderón.

Maquette: Mag. Elisabeth Czerwenka, tél. +43/1/36 16 02.

Impression: Druckerei Ferdinand Berger & Söhne Ges.m.b.H.

A-3580 Horn, Wiener Straße 80, Tel.: 02982/4161.

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Wiedner Hauptstraße 63, A-1045 Viena, Tel. +43/1/501 05,

Telefax +43/1/502 06-255, Cables: Außenhandel Wien, Télex: 11-1871 (buka a)

Realización: Internationale Werbegesellschaft m. b. H., Hoher Markt 12, A-1011 Viena, Tel. +43/1/534 07-0,
Telefax +43/1/534 07-242;

Traducción inglesa: P. W. Lupton, Tel. +43/1/923 08 83.

Traducción francesa: Andrée Pázmándy, tél. +43/1/43 13 97. – Traducción española: Calderón.

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A-3580 Horn, Wiener Straße 80, Tel.: 02982/4161.

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PARTNERS IN GLOBAL SOLUTIONS

cc Central file

FAX

TO: Mr Harald Sittz

FAX No.: 43-1-512 7869

FROM: Frederik van Bolhuis, GEF

TEL No.: (202) 473-3298

DATE: 12/15/93

RE: Estimated voting rights GEF

Under Double majority mechanism:

One country - one vote → Consistency with e.g. 7 countries out of 40 would have 5%

② "one \$ one vote" - basis for non-recipient constituency formation

Using adjusted IDA shares, and including Pilot contributions (incl. realized co-financing)
the %'s of the last column of the attached table ~~of~~ would apply.

Apologies for this informal note (we are moving our office today)

Best wishes for Christmas * 1993



Voting Shares Analysis



Country	Pilot Phase 1/			GEF2 SDR m 3/	Relative Shares		
	Core	Cofin. 4/			GEF2 Only	Incl. Pilot Core	Incl. Pilot Core, Co- & Parallel
	SDR m 2/	LC				Contrib.	
Australia		4.56	8.5	22.61	1.58%	1.16%	1.35%
Austria	25.39			13.94	0.97%	2.01%	1.95%
Canada	6.02	3.01	5	61.95	4.33%	3.48%	3.52%
Denmark	16.25			20.13	1.41%	1.86%	1.80%
Finland	16.66			15.49	1.08%	1.64%	1.60%
France	106.21			108.73	7.59%	10.99%	10.66%
Germany	107.32			170.37	11.90%	14.20%	13.78%
Italy	58.49			82.09	5.73%	7.19%	6.97%
Japan	24.11	8.30	1473 5/	289.63	20.23%	16.05%	15.98%
Netherlands	37.74			51.11	3.57%	4.54%	4.41%
New Zealand				1.86	0.13%	0.10%	0.09%
Norway	18.42			21.99	1.54%	2.07%	2.00%
Portugal	4.50			1.86	0.13%	0.33%	0.32%
Spain				12.39	0.87%	0.63%	0.61%
Sweden	22.66			40.58	2.83%	3.23%	3.14%
Switzerland	30.06	7.65	15.2	26.95	1.88%	2.92%	3.21%
UK	49.76			95.25	6.65%	7.42%	7.19%
USA		37.12	51.6	323.08	22.57%	16.52%	17.87%
LDC & Other Donors				71.58	5.00%	3.66%	3.55%
	<u>523.58</u>	<u>60.64</u>		<u>1431.58</u>	100.00%	100.00%	100.00%

1/ Includes all countries who have pledged and met all the obligations of their commitments to the pilot phase

2/ Based on average exchange rates for the period Jan 1, 1991 - June 30, 1993

3/ Based on Adjusted IDA Basic Shares and average exchange rates for Nov 1, 92 - Oct 31, 93

4/ Includes cofinancing and parallel financing formalized thus far.

5/ Grant equivalent at ratio of: 52.59%

GLOBAL ENVIRONMENT FACILITY

Cartagena, Colombia
December 6 - 10, 1993



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Telephone: (212) 949 1840 Fax: (212) 953 1302
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Cartagena, Colombia
December 4 -6, 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: MINISTRY OF FINANCE / AUSTRIA

Name(s): 1. HARALD SITTA ✓

Title _____

2. _____

Title _____

Please complete the following, if you have not already done so:

Address: HOTEL CARIBE

Telephone: _____ Fax: _____

FEDERAL MINISTRY OF FINANCE

Himmelpfortgasse 4 - 8
A-1015 Vienna

Mag. Harald Sitta
Tel. 51433/2284
Fax. 513 08 16

TELEFAX

(Fax.Nr. 001 202 477 0551)

2 Page (s)

Vienna, November 18, 1993

Mrs. Marie Morgan-Wels
Global Environment Facility
The World Bank

Dear Mrs. Morgan-Wels;

Please find attached the Registration Form of the Austrian Delegation to the Replenishment and Participants' Meetings in Cartagena.

Yours sincerely,



H. Sitta

3/4 ✓
1240-13

GLOBAL ENVIRONMENT FACILITY
Replenishment and Participants' Meetings

Cartagena de Indias, Colombia
December 6 - 11, 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: AUSTRIA, MINISTRY OF FINANCE

Name(s): 1. HAROLD SITTA
Title DEPUTY DIRECTOR

2. IRENE FREUDENSCHUSS, AUSTRIAN ON-MISSION, NEW YORK
Title _____

3. _____
Title _____

4. _____
Title _____

5. _____
Title _____

Address: A-1010 VIENNA
HIMMELPFORTGASSE 4-8

Telephone: 43 222 51433 2282 Fax: 43 222 513 08 16

Will you be attending the NGO Consultation on December 5. yes no

Will you be attending the Replenishment Meeting on December 7? yes no

Please fax by return to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551

P.1
44

12-10-13

GLOBAL ENVIRONMENT FACILITY
Replenishment and Participants' Meetings

Cartagena de Indias, Colombia
December 6 - 11, 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: AUSTRIA

Name(s): 1. IRENE FREUDENSCHUSS-REICHL

Title: Minister - Counsellor

2. _____

Title: _____

3. _____

Title: _____

4. _____

Title: _____

5. _____

Title: _____

Address: AUSTRIAN MISSION TO UN

809 UN-PLAZA, NEW YORK, NY 10017

Telephone: (212) 949 1840 Fax: (212) 953 1302

Will you be attending the NGO Consultation on December 5. yes no

Will you be attending the Replenishment Meeting on December 7? yes no

Please fax by return to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1010 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0851

FEDERAL MINISTRY OF FINANCE

Himmelfortgasse 4 - 8
A-1015 Vienna

Mag. Harald Sitta
Tel. 51433/2284
Fax. 513 08 16

TELEFAX

(Fax.Nr. 001 202 477 0551)

2 Page (s)

Vienna, October 11, 1993

Mrs. Marie Morgan-Wels
GEF
The World Bank
1818 H Street N. W.
Washington, D. C., 20036

Dear Mrs. Morgan-Wels,

Please find attached the Registration Form of the Austrian delegation to the forthcoming GEF-meetings in Paris.

Yours sincerely,



H. Sitta

3/4

1137-13

GLOBAL ENVIRONMENT FACILITY
Replenishment and Participants' Meeting

Paris, France
November 3 - 5(6), 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: A U S T R I A

Name(s): 1. Harald S I T T A

Title Deputy Director, Ministry of Finance

2. Walter R I L L

Title Advisor, The World Bank

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Address: Ministry of Finance

A-1010 Vienna, Himmelfortgasse 4-8

Telephone: 51 433 2282 Fax: 513 08 16

Will you be attending the Replenishment Meeting on November 3? yes no

Will you be attending the Participants' Meeting on November 4-5(6)? yes no

Please fax by return to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551



GLOBAL ENVIRONMENT FACILITY

Replenishment Meeting

Paris, France

November 3, 1993

REGISTRATION FORM

(Please type or print clearly)

Country/Organization: AUSTRIA

Name(s): 1. WALTER RILL

Title _____

2. _____

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Address: _____

Telephone: _____ Fax: _____

GLOBAL ENVIRONMENT FACILITY

Replenishment Meeting

Paris, France
November 3, 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: AUSTRIA

Name(s): 1. SITTA HARALD

Title DEPUTY DIRECTOR

2. MINISTRY OF FINANCE

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Address: _____

Telephone: _____ Fax: _____

file: Austria

*cc: [initials]
PBE*

FEDERAL MINISTRY OF FINANCE

Himmelfortgasse 4 - 8
A-1015 Vienna

Mag. Harald Sitta
Tel. 51433/2284
Fax. 513 08 16

*already
filed
in Austria
for [initials]*

TELEFAX

(Fax.Nr. 001 202 477 0565)

3 Page (s)

Vienna, November 12, 1993

The World Bank
att.: Mr. Mohamed T. El-Ashry
Chief Environmental Advisor to the
President & Director

Subject: GEF-Negotiations

Dear Mr. El-Ashry:

We have been following very closely and with great interest the various statements made during the discussions on the replenishment and restructuring of the GEF in Paris last week. Following your advise, we refrained from reacting to a number of comments or reinforcing views expressed by others.

Nevertheless, we are deeply concerned about some remarks made by various representatives of the Group of 77 which seem to indicate that on the side of G-77 there prevails a mixture of misunderstandings and lack of knowledge about the way multilateral financial institutions usually operate. While we can understand to a certain degree the disappointment of participants about the seemingly low level of replenishment, we think that those participants need to take into consideration that there are no obvious alternatives to receiving additional funding for the purpose of global environmental activities and that the GEF process has to be seen as a dynamic, over time developing mechanism rather than a static one.

With regard to the latest version of the "elements"-paper and the annexes, we have the following comments, and I should emphasize that we have to insist on satisfactory solutions which would enable us to participate in the future development of GEF:

1. Regarding paragraph 8bis, we don't have specific proposals or objections with concerning the language and formal structure of this paragraph as long as the text makes sure that countries in transition would be eligible for GEF-funding within the four focal areas of the GEF, even if they would not be eligible under one of the conventions.
2. With regard to paragraph 3, we agree with your suggestions about the meaning and implications of "drought" as a additional focal area of GEF. In addition, we would share the view expressed by Norway about the problems of increasing the scope of GEF and the related problem of obtaining truly additional funds for that purpose.
3. Regarding the Assembly, we would have strong objections against extending operational responsibility to this body. We would have great difficulties to accept the idea of having an Assembly, if its responsibilities would be extended beyond the proposal in the last version and if the Assembly would meet more often than every three years.
4. Concerning the Council, it is our view that 30 members would be already the upper limit; we would have preferred a number of seats more in line with the size of the World Bank Board at present. Going beyond represents already a compromise; therefore, if the Council would start with 30 members we would like to make sure that this will remain the maximum number. Furthermore, it is our understanding, that each member of the Council would represent all the countries within the respective constituency.
5. As far as the Chairman of the Council is concerned, we hold the view, that the Chief Executive Officer (CEO) of the secretariat should serve as the chairman; apart from problems of inexperience and continuity, in the case the chairman would be elected from among the Council members, I think such a procedure would have major implications on the concept of decision making by consensus, since it would be difficult to consider the chairman being a Council member as impartial when seeking consensus.

With regard to Cost of Council meetings, we do not see a necessity that travel expenses of Council members of eligible recipient countries shall be disbursed from the administrative budget of the Secretariat.

6. Another issue which should not be underestimated in terms of our ability to justify publicly our continued participation in the replenishment of the core fund, is the inclusion of contributions to the core fund during the pilot phase for calculating to respective votes. The issue of "punishment" as raised by some delegations, in our view, works both ways.

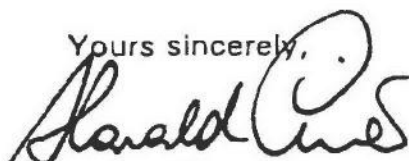
Regarding cofinancing arrangements during the pilot phase, we could see a compromise along the following lines: one would have to determine the linkage of such cofinancing with the core fund and that those arrangements being linked very closely to core fund activities could be considered to a certain degree for calculating votes; but as the degree of linkage of such arrangements to the core fund is weakening, the level of inclusion should be reduced.

On the other hand, for the purpose of replenishment, we are convinced that - as is the case in IDA - only core fund contributions should be included in the calculation of formal votes.

With regard to Annexes C and D, we share some of the concerns as they have been raised by a number of participants, especially with reference to the role of the trustee which, in our view, needs further balancing and clarification.

With respect to sequencing of the next round of discussions in Cartagena, in our view, a successful and satisfactory replenishment of the GEF can only be reached, if the new structure of GEF will be acceptable for all countries, including the contributing countries from OECD. Therefore, we once more suggest that the replenishment negotiations in Cartagena should be scheduled only after the successful completion of the discussion of restructuring the GEF.

Yours sincerely,



H. Sitta

file: Austria

FEDERAL MINISTRY OF FINANCE

Himmelfortgasse 4 - 8
A-1015 Vienna

Mag. Harald Sitta
Tel. 51433/2284
Fax. 513 08 16

TELEFAX

(Fax.Nr. 001 202 477 0551)

3 Page (s)

Vienna, October 1, 1993

Mr. Ian Johnson
GEF Administrator
Environment Department, The World Bank

Dear Mr. Johnson,

In addition to our discussions in Washington on "the Elements for Establishing the Restructured Global Environment Facility" I would like to provide you with some comments on the document GEF/PA. 93/2/Rev. 1, dated September 23, 1993.

To PAGE 2:

The US-proposal to include an annex on "GEF principles on information disclosure and on consultation with local people(s) and NGOs" seems like a good idea, as does the proposal of the Netherlands to annex a "Project Cycle Outline" to chapter VII, "Operational Modalities".

To BASIC PROVISIONS:

- **Para 1:** We feel that it should be stated how the restructured GEF is meant to be established: e.g. by virtue of the adoption of the present resolution and subsequent approval by the Executive Directors of IBRD.
- **Para 2a:** In our view the dispute over the legal identity of the restructured GEF ("intergovernmental entity" versus "intergovernmental arrangement") should be downplayed since it risks to take on a philosophical dimension. The emphasis should be on those elements of the question that seem to be most able to command eventual consensus:
 - * functional autonomy
 - * effective discharge of mandate

- * avoidance of creation of unnecessary new bureaucracies
 - * maximum synergy to use scarce resources optimally.
- Para 2c: The wording of this paragraph needs to take into account the different formulations of the climate change convention, Agenda 21 and of the "Beyond the Pilot Phase" (copies of the relevant passages are attached).
- It would seem appropriate to incorporate Principle V of "Beyond the Pilot Phase" (The GEF would fund programs and projects which are country driven and consistent with national priorities designed to support sustainable development) somewhere in para. 2.
- Para 2d: "Drought" should be deleted since drought is a natural hazard that requires a different set of responses than land degradation and desertification which are to a large extent man-made.
- The international community has mechanisms in place that deal with natural disasters, including drought (i.e. humanitarian emergency relief, prevention, preparedness and mitigation measures).

To ORGANIZATION:

- We hope that the differences of views between G-77 and OECD on the existence and role of the Assembly can be narrowed down once (and if) the advantage of the constituency system in the formation of the Executive Council become tangible for the G-77.

It might be helpful for further discussions that the GEF-Secretariat includes samples of how a constituency system (based on regional constituencies and alternatively on mixed constituencies) would work. Since many of the G-77 negotiators at the restructuring meeting in Washington came from UN-work, it should not be assumed that they are very familiar with the intricacies of the different constituency models. If the G-77 continues to talk about "member states" occupying the 30 seats of the Executive Council one would have to start thinking about distribution of these seats and about patterns of rotation to ensure some degree of fairness to all countries.

In our view it would be preferable to have a constituency-based Executive Council which meets at least twice a year and an Participants Assembly, which would meet once every couple of years to allow countries to speak in their own voice every so often (in particular important for home consumption).

Executive Council and Assembly should not be seen as hierarchical, but as different meeting

modalities for the GEF members (one more businesslike and expeditious, the other more ceremonial, etc.).

- Para 10: The responsibility of approving projects (through a non-objection procedure) should be included in para. 10.

- Para 11: In line with the above argumentation the last sentence of the chapeau of para 11 could be reworded as follows: "The CEO will be accountable for the performance of Secretariat functions to the Participants and to the Trustee, including in particular those related to:"

To PRINCIPALS OF DECISION-MAKING:

- As already stated in Washington, we fully support the preference for the "concurrent majority" (third variant of para. 16 (c)).

To OPERATIONAL MODALITIES:

- It seems desirable to include a section on eligibility criteria and to ensure the eligibility of countries in transition for GEF funding.

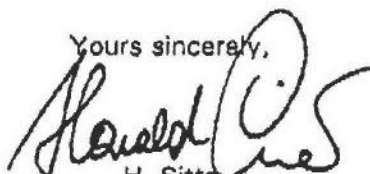
To REPORTING:

- Since the annual report will also be submitted for information to the UN Commission on Sustainable Development it should take into account as much as possible the multi-year thematic work program of the CSD.

To TRANSITIONAL AND FINAL PROVISIONS:

- Austria prefers the third version of para. 22.

Yours sincerely,



H. Sitta

SIGN IN SHEET

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
September 21 - 24, 1993

Name: SITTA HARALD

Country: AUSTRIA

ON IN SHEET

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
September 21 - 24, 1993

Name:

WALTER RILL

Country:

AUSTRALIA / IBRD

SIGN IN SHEET

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
September 21 - 24, 1993

Name:

IRENE FREUDENSCHEISS
AUSTRIAN MISSION TO UN

Country:

AUSTRIA

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
September 23 - 24, 1993

World Bank Headquarters
Washington D.C.

REGISTRATION FORM
(Please type or print clearly)

Name(s): 1. Ms. IRENE FREUDENSCHUSS

Title ~~Ms.~~ AUSTRIAN MISSION TO UN

2. _____

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Organization: _____

Address: 809 UN PLAZA
NY, NY 10017

Telephone: (212) 210 9873 Fax: (212) 953 1802

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
September 23 - 24, 1993

World Bank Headquarters
Washington D.C.

REGISTRATION FORM
(Please type or print clearly)

Name(s): 1. Mag. Harald SITTA

Title Deputy Director, Ministry of Finance, Vienna

2. Mag. Walter RILL

Title Advisor, The World Bank, Room IMF 11-302

3.

Title

4.

Title

5.

Title

Organization: Federal Ministry of Finance

Address: Himmelfortgasse 2-8

A - 1010 Vienna AUSTRIA

Telephone: 43-1 / 51433-2282 Fax: 43-1 / 513.08.16

Will you also be attending the Incremental Costs Workshop on September 21? yes no

Will you also be attending the GEF Donors' Replenishment Meeting on September 22?

yes, as a perspective donor; yes, as an observer; no

Please fax before August 27, 1993 to:

Marie Morgan-Wels
Global Environment Facility

Telephone: (202) 473-1128
Telefax: (202) 477-0551

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
September 23 - 24, 1993
World Bank Headquarters
Washington, D.C.

REGISTRATION FORM
Please print in dark ink

AUSTRIA

1. Name (Last, First, Middle) _____

2. Title _____

3. Organization _____

4. Address _____

5. City _____

6. State _____

7. Zip _____

8. Telephone (Country, Area, Office) _____

9. Fax (Country, Area, Office) _____

10. E-mail _____

I will also be attending the Intersession Days (Monday or Wednesday) of the 1993 GEF.

I will be attending the GEF 1993 Intersession Days (Monday or Wednesday) of the 1993 GEF.

I will be attending the GEF 1993 Intersession Days (Monday or Wednesday) of the 1993 GEF.

Please fax before August 27, 1993 to:

Global Environment Facility
Attn: Registration
1815 M Street, NW
Washington, DC 20036-6055
Tel: 202-473-9200
Fax: 202-473-9201

07/21/1993 20:51

GLOBAL ENVIRONMENT FACILITY

Seminar on Incremental Costs

**The World Bank, Washington D.C.
H Building Auditorium
September 21, 1993
10:00 am to 5:30 pm**

(868-11

REGISTRATION FORM
(Please type or print clearly)

TO BE FILLED OUT ONLY BY THOSE ATTENDING

Organization: MINISTRY OF FINANCE

Name(s): 1. MAG. HARALD SITTA

2. _____

3. _____

Address: A-1010 VIENNA, AUSTRIA
HIMMELPFORTGASSE 2-8

Telephone: 0222 51433 2282 Fax: 0222 513 0816

Please fax before September 1, 1993 to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551



AUSTRIA

07/21/1993 20:51

202 477 0551 P.11

GLOBAL ENVIRONMENT FACILITY

Seminar on Incremental Costs

The World Bank, Washington D.C.

H Building Auditorium

September 21, 1993

10:00 am to 5:30 pm

1868-11

REGISTRATION FORM

(Please type or print clearly)

TO BE FILLED OUT ONLY BY THOSE ATTENDING

Organization: BRAZIL

Names: 1. RENAULT DE FREITAS CASTRO

2. PEDRO MOTTA PINTO COELHO

3. DAGOBERTO KOEHNTOPP

Address: Secretaria de Assuntos Internacionais - SEAIN-SEPLAN/PR

Esplanada dos Ministérios, Bl. K, 5º andar 70.040.906 -Brasília

Telephone: (55) (61) 224-3624

Fax: (55) (61) 225-4463

Please fax before September 1, 1993 to:

Marie Morgan-Wals
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551

RA

BRAZIL

PRESIDÊNCIA DA REPÚBLICA
SECRETARIA DE PLANEJAMENTO, ORÇAMENTO E COORDENAÇÃO
SECRETARIA DE ASSUNTOS INTERNACIONAIS

FAX NO 1857 /93

BRASÍLIA 6108193

PARA: MARIE MORGAN-WELS
Global Environment Facility
The World Bank - Washington, DC 200036

Fax no (001) (202) 477-0551

DE: MAURO MARCONDES RODRIGUES
Secretário de Assuntos Internacionais
SEAIN/SEPLAN/PR
BRASÍLIA/DF
FAX NO (061) 225-4022 (BRAZIL)

NO DE PÁGINAS 02 (INCLUINDO A CAPA)

OBS: Em caso de má transmissão, favor ligar para (061) 225-7185
In case of bad transmission, please call (061) 225-7185

Subject: Global Environmental Facility
Seminar on Incremental Costs

Please see attached registration form.

AP

V

file : Austria

August 2, 1993

Mr. Harald Sitta
Deputy Division Chief for
International Financial Institutions
Ministry of Finance
Himmelpfortgasse 4-8
A-1015 Vienna
Austria

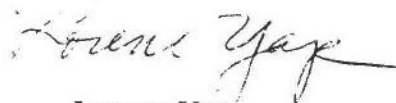
Dear Mr. Sitta:

Re: The Global Environment Facility (GEF)

This is to acknowledge that the Oesterreichische Nationalbank has confirmed to us receipt of a note in the amount of ATS 133,334.000.00, representing the third and final installment by Austria to the pilot phase of the GEF.

We wish to thank you once again for Austria's support of the GEF.

Sincerely,



Lorene Yap
Acting Director
Resource Mobilization Department

cc: Mr. Bernard Snoy, Executive Director

Oesterreichische Nationalbank
Postfach 61
Otto Wagner-Platz 3
A-1011 Vienna
Austria

bcc: Messrs./Mmes. Donovan, Ohashi, Yap, Johnson, Martin, Bautista, Felix
RMoreno:sb
Disk: GEF Encashment (Austria.Pym)

THE WORLD BANK/IFC/M.I.G.A.
GLOBAL ENVIRONMENT FACILITY
Headquarters: Washington, D.C. 20433 U.S.A.
Tel. No. (202) 473-1053 // Fax Tel. No. (202) 477-0551 // Telex No. RCA 248423
FACSIMILE COVER SHEET AND MESSAGE

file: Austria

DATE: July 16, 1993

NO. OF PAGES:
(including this sheet)

MESSAGE NUMBER: 2

TO
Name: See Distribution Below
Organization:

Fax Tel. No.
City:
Country:

FROM
Name: Nicholas van Praag
Dept./Div. ENVGE
Room No. S-5035

Fax Tel. No. (202) 477-0551
Dept/Div No. 655/35
Tel. No. (202) 473-5102

SUBJECT: RE: Austria's comments on GEF Fifth Tranche Projects.

MESSAGE:

Please find attached comments on GEF Fifth Tranche Projects we have received from Austria.

cc: Mssrs.: Mohamed T. El-Ashry, ENVDR; Basem Khader, UNDP; Mikko Pyhala, UNEP; Ken Newcombe, ENVGC; Ian Johnson, ENVGE.

Transmission authorized by: Ian Johnson\

If you experience any problem in receiving this transmission, inform the sender at the telephone or fax number listed above.

Cameroon - Biodiversity Conservation and Management

In our view, the overall concept of the project is worth to be supported by GEF-funds. Nevertheless, it should be pointed out that the project title does not reflect the main goal of the project. The project is designed for forest biodiversity only, leaving beside other dimensions of biodiversity with respect to wetlands, agriculture and other issues like ex-situ conservation. Furthermore, the about 44 % of the country originally covered with forests are heavily degraded (around 60 %) by now. Therefore the figures in the project brief should be revised accordingly.

In addition to the comments of the technical review and the STAP, which does not seem to be adequately reflected in the Project Brief, some more points should be considered.

1. According to Alpert (1993) a number of sources of data for conservation issues are already available for the relevant areas in Cameroon as well as for the whole country. The use of this material would probably reduce the financial needs of the project and speed up the process.
2. A number of International and national NGOs are already active in conservation- projects in Cameroon, especially in the areas of relevance. A close coordination and cooperation with these partly internationally founded activities would avoid duplication as well as foster the speed of process.
3. The drafted new forest policy should first enter into force before planning a financial involvement of GEF. The actual valid policy as laid down in Law No. 81-31 of November 1981 and the subsequent decrees do not seem to be a good basis for a sustainable forest, wildlife and protected area management.

We would like to support this project in case the raised issues are settled, although, the overall project is supported in general.

Mauritius - Restoration of Highly Degraded and Threatened Native Forest

In agreement with the STAP we ~~comments.~~ We would like to support this project proposal.

Tanzania - Biogas from Municipal and Industrial Organic Wastes

The idea behind the project proposal is indeed a very excellent one. Nevertheless, a number of issues should be raised and settled before this project is approved.

1. The collection and sorting of household waste is of great importance for the success of such a project. As there is hardly any waste separation in African towns the household, workshop and industry waste is mixed. Beside the organic waste fraction one will find plastics, chemicals, production residues and by-products, batteries and other substances which are difficult to separate after collection. This might have a negative impact on i) the biogas process due to inhibitory substances in the waste, and ii) the possibility to use the produced sludges as a fertilizer because of contamination with e.g. heavy metals.
2. Industries which produce organic waste seem to be more feasibly to be used than the

resource for the biogas plant, as the produced waste is very likely to be more homogenous and therefore easier to handle. Mixed waste sometimes have an improved behaviour during an anaerobic digestion compared to single source waste, but the logistics to maintain a certain composition for an optimum performance of a biogas plant seem to be a rather serious problem.

3. As stated in the STAP comment, pilot trials to find out the digestion feasibilities should be carried out first to achieve an idea of the behaviour of the process under the given conditions.

As a result, we would like to ask for an in-depth evaluation of the socio-economic and technical/biological parameters, parameters like, *inter alia*, waste composition and degree of separation, collection management, safety of supply, technological infrastructure, gas processing, storage and distribution, which are probably more important for the success of this project than the biogas technology itself. Furthermore, there is still the question if a number of small plants would not be more favourable than one large scale plant. This question is of relevance with respect to safety of energy production, maintenance and service, training capacities and the possibility of an easy adaption to changing situations.

Mongolia - Biodiversity Conservation Plan

The project proposal is well conceived and worth supporting through GEF. We would like to point out that the experiences of FAO/UNEP gained through the Przewalski Horse Project should be kept in mind and integrated in this project. The possible sustainable use of Mongolia's biodiversity should be given far more attention, too.

India - GHG Reduction Strategy

It is recommended that the various similar projects as mentioned in the project proposal should cooperate intensively to avoid duplication and hence costs. Furthermore, more attention should be paid to means of implementation to put the recommendations into action.

Tunisia - Market Penetration of Solar Water Heating

While in full agreement with the STAP comment, we would like to address the issue of a possible replicability.

Furthermore, the means of as well as criteria for an assessment and evaluation need have to be defined. Nevertheless, this project proposal could be supported even further if some catalytic effects would arise out of the project and increase the application of environmental benign solar energy systems.

With respect to the project proposal of "Regional GHG Reduction Strategies in Arab States" duplication should be avoided. As Tunisia is included in the list of participating countries in this project, it seems appropriate to await the output of this project to direct GEF funding according to the most promising fields according to the recommendations of the strategies to be developed.

Arab States - Regional GHG Reduction Strategies

This project needs to be more precisely defined with respect to the participating countries. In our view, it does not make very much sense to treat countries like Sudan,

Lebanon or Djibuti the same way as e.g. Algeria, Bahrain or Egypt, for various reasons. Also, Sudan seems to fit into the list of countries where UNDP is not fully operational. Due to different stages of development, the grade of industrialization and other factors, the needed national strategies are very likely to be very defined for the mentioned countries.

While an idea of regional and sub-regional networks is not a new or innovative one (a number of networks have already been created through the decisions of the African Ministerial Conference on the Environment - AMCEN - and the subsequent activities as coordinated through UNEP/Regional Office of Africa; a number of the countries mentioned in the project proposal are members of AMCEN) such networks seem reasonable tools for mutual assistance and for the exchange of information and experience. Nevertheless, no indication is given as to the positions of the involved countries with respect to this proposal.

In our opinion, this proposal should be revised with respect to the different needs of the countries/regions involved. A splitting into three subprojects seems a possible solution to address the diversity in the region as mentioned in the project brief and this comment.

The objectives of the project proposal are worthwhile for support. What is needed from our point of view is an approach tailored to the needs and priorities of the different countries and regions, respectively.

Jamaica - Demand-site Management Demonstration Project

In agreement with the comments of STAP, we would like to support the project proposal.

Southern Cone - Monitoring and Research Network

While the project seems to be very well designed and a timely one, it is a project of purely scientific interest of ozone depletion and UV-B radiation. No activities which would eventually initiate the correction of the problem can be found in the project proposal. Therefore, we would like to emphasize the recommendation of STAP to seek for other funding sources for this important project, e.g. within the framework of the existing Convention. We are of the opinion that the US-\$ 1,9 Million spend for the reduction of ozone depleting substances would be of more interest for GEF according to its priorities, and of a higher global benefit.

Inter-Regional:

Global - Climate Change Capacity Building

We fully support the opinion of the technical review and STAP to reformulate the project proposal to make it more precise and to coordinate the project with the relevant international organizations and activities.

02-05-93 08:58 PM FROM WORLD BANK HQ

P007

file Austria

764 07

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
March 4 - 5, 1993

FAO Headquarters
Rome, Italy

REGISTRATION FORM
(Please type or print clearly)

Names: 1. Herbert Lust

Title Director, Department for International Finance Institutions

2. _____

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Organization: Federal Ministry of Finance

Address: Himmelfortgasse 4 - 8, 1010 Vienna, Austria

Telephone: 51 433 / 2284 **Fax:** 513 08 16

Will you be attending the reception on March 3? yes no

Please fax before February 12, 1993 to:

Marie Morgan-Wals
Global Environment Facility
The World Bank
1818 K Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551

June 29, 1993

plc Austria

Mr. Harald Sitta
Deputy Division Chief for
International Financial Institutions
Ministry of Finance
Himmelpfortgasse 4-8
A-1015 Vienna
Austria

Dear Mr. Sitta:

Re: The Global Environment Facility (GEF)

As you know, Austria has pledged to contribute \$400 million to the core fund of the GEF over its three year pilot phase. As agreed among participants, this contribution would be made in the form of three notes to be deposited on July 31 of each of the years 1991, 1992, and 1993. Each of these notes, in turn, would be encashed over five years.

Consistent with this arrangement, Austria has already deposited two Notes amounting to a total of \$266,666,000.00. The third and final installment in the form of a Note, amounting to \$133,334,000.00 is due July 31, 1993. I would be grateful if you could take the necessary action to ensure that the Oesterreichische Nationalbank receives this deposit by that due date and to request that they confirm this deposit to us.

Thank you once again for Austria's continued support of the GEF.

Sincerely,



Paula Donovan
Director
Resource Mobilization Department

cc: Mr. Bernard Snoy, Executive Director

Oesterreichische Nationalbank
Postfach 61
Otto Wagner-Platz 3
A-1011 Vienna
Austria

bcc: Messrs./Mmes. Donovan, Ohashi, Yap, Johnson, Martin, Bautista, Felix
RMoreno:sb
Disk: GEF Encashment (Austria)

OK

GEF REPLENISHMENT MEETING

MAY 25, 1993

BELJING, CHINA

REGISTRATION

NAME: SITTA HARALD

ORGANIZATION: MINISTRY OF FINANCE

COUNTRY: AUSTRIA

TEL/FAX: 51 433 / 2282 FAX 513 08 16

oh

GEF REPLENISHMENT MEETING

MAY 25, 1993

BEIJING, CHINA

REGISTRATION

NAME: WALTER RILL

ORGANIZATION: THE WORLD BANK

COUNTRY: AUSTRIA

TEL/FAX: 001 - 202 - 623 - 4948

The World Bank/IFC/MIGA
O F F I C E M E M O R A N D U M

DATE: May 7, 1993 02:54pm

TO: MOHAMED T. EL-ASHRY (MOHAMED T. EL-ASHRY

FROM: Walter Rill, EDS10 (WALTER RILL@A1@EDSE

EXT.: 623-4582

SUBJECT: Replenishment of GEF

With reference to your telefax of April 30, 1993, please find attached my memo of April 27, 1993, to Mr. Ian Johnson for information.

Best regards,
Walter Rill

The World Bank/IFC/MIGA
O F F I C E M E M O R A N D U M

DATE: April 27, 1993 10:54am EST

TO: IAN JOHNSON (IAN JOHNSON @A1@VAX

FROM: Walter Rill, EDS10 (WALTER RILL@A1@EDSE

EXT.: 623-4582

SUBJECT: Replenishment of the GEF

Referring to Mr. Linn's memo of March 30, 1993, which I ha received only yesterday, I would like to inform you that A intends to participate at the replenishment of the GEF as donor. Austria will be represented at the meeting on May 2 1993, by Mr. Harald SITTA and myself, since Mr. Sitta and planning to attend the participants' meeting on May 26 - 2 1993.

Best regards,
Walter Rill

GLOBAL
ENVIRONMENT
FACILITY

PARTNERS IN GLOBAL SOLUTIONS

To: Mr. Harald Sitta, Deputy Director

April 12, 1993

FAX: 513 0816

Re: **GLOBAL ENVIRONMENT FACILITY**

Participants' Meeting

**Beijing, China
May 24 - 28, 1993**

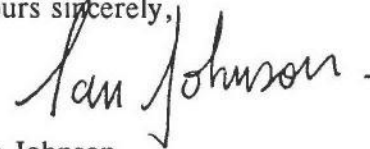
On behalf of the Global Environment Facility (GEF), I am pleased to invite the following:-

1. Mr. Harald Sitta, Deputy Director, Ministry of Finance, **Austria**
2. Mr. Walter Rill, Advisor, Executive Director's Office for Austria

to attend the GEF Participants' and/or NGO Meeting in Beijing, China from May 24 - 28, 1993.

Please apply forthwith for single entry visas at the Chinese Embassy (or Consulate General) in your country with this fax.

Yours sincerely,



Ian Johnson
GEF Administrator

DATE/TIME = APR-13 15:41

JOURNAL NO. = 06

COMM. RESULT = OK

PAGES = 01

DURATION = 00:00'44

MODE = XMT

STATION NAME =

TELEPHONE NO. = T 90114315130816

RECEIVED ID = 43 1 5130816

RESOLUTION = STANDARD

Mr. Satta

-WORLD BANK ENUGE -

DATE/TIME = APR-12 16:40

JOURNAL NO. = 21

COMM. RESULT = OK *Mr. Bill*

PAGES = 01

DURATION = 00:00'31

MODE = XMT

STATION NAME =

TELEPHONE NO. = T 96234948

RECEIVED ID =

RESOLUTION = STANDARD

-WORLD BANK ENUGE -



FEDERAL MINISTRY OF FINANCE

TELEFAX

3 Pages:

Date: MARCH 31, 1993
Zl: _____

To: MRS.
MARIE MORGAN-WELS
GEF

Fax.Nr.: 001 202 477 0551

From: OR Mag. Harald SITTA
Department III/15
Federal Ministry of Finance
Himmelfortgasse 4-8
A - 1010 Vienna

PLEASE FIND ATTACHED THE REGISTRATION FORM
AS WELL AS MY HOTEL RESERVATION REQUEST FORM.
THIS RESERVATION REQUEST FORM I ALSO TRANSMITTED
DIRECTLY TO THE BEIJING CONTINENTAL GRAND HOTEL.

YOURS SINCERELY,

For Questions:

Tel: 514 33 2282

Fax: 513 08 16

3194-8

GLOBAL ENVIRONMENT FACILITY

Participants' Meeting

Beijing, China
May 26 - 28, 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: AUSTRIA, MINISTRY OF FINANCE

Name(s): 1. HARALD SITTA

Title DEPUTY DIRECTOR

2. _____

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Address: A-1010 VIENNA, HIMMELPFORTGASSE 4-8
AUSTRIA

Telephone: ⁴³ (222) 51433 2282 Fax: ⁴³ (222) 513 08 16

Will you also be attending the NGO session on May 24 - 25? yes no

Please fax before April 15, 1993, to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551

3194-9

BEIJING CONTINENTAL GRAND HOTEL

GEF Participants' Meeting

Beijing, China
May 24 - 28, 1993

HOTEL RESERVATION REQUEST
(Please type or print clearly)

To: Mr. Zhang, Guosheng
Vice General Manager
Beijing Continental Grand Hotel
Fax: 85 - 1 - 491 0106 (Tel: 86 - 1 - 491 0105)

From:
Fax:

(Please indicate below the room category requested)

Room Category:	Per night:	
Junior Room	\$60.00	<input type="checkbox"/>
Standard Room	\$70.00	<input type="checkbox"/>
Luxury Room	\$80.00	<input checked="" type="checkbox"/> MAY 25 - MAY 29, 1993
Junior Suite	\$120.00	<input type="checkbox"/>

Please make reservations for the following:-

Country/Organization: AUSTRIA, MINISTRY OF FINANCE

Name(s): HARALD SITTA

- Arrival details: (Date and flight no.): MAY 25, 1993 SR 196
 Date of departure: _____
- Arrival details: (Date and flight no.): MAY 29, 1993 CHINA AIR 931
 Date of departure: _____
- Arrival details: (Date and flight no.): _____
 Date of departure: _____
- Arrival details: (Date and flight no.): _____
 Date of departure: _____

(Note: Reservations should be made not later than seven days before date of arrival. Any cancellations must be reported to the hotel directly. Participants are responsible for any "no-show" charges).

GLOBAL ENVIRONMENT FACILITY

Participants' Meeting

Beijing, China
May 26 - 28, 1993

REGISTRATION FORM
(Please type or print clearly)

Country/Organization: AUSTRIA / IOPD

Name(s): 1. WALTER RILL

Title Advisor

2. _____

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

Address: 17F 11-302

Telephone: (202) 623-4582 Fax: (202) 623-4948

Will you also be attending the NGO session on May 24 - 25? yes no
(as observer)

Please fax before April 15, 1993, to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551

OFFICE MEMORANDUM

DATE: April 9, 1993

TO: Mr. Wilfried P. Thalwitz, ECAVP

FROM: Mohamed T. El-Ashry, ENVDR *MT*

EXTENSION: 33202

SUBJECT: Meeting with Austrian Environment Minister

I met earlier this week with Ms. Maria Rauch-Kallat, Austrian Minister of Environment, Youth and Family Affairs; Dr. Heinz Schreiber, Director-General, Federal Ministry of Environment; and three of their advisors. The discussion ranged from Environmental policies and activities of the Bank to the GEF, nuclear issues, and the environment in Eastern Europe. With regard to the latter, they complimented the Bank for giving due attention to the issues in the region and for the preparation of a Regional Environmental Action Plan. They agreed with the "regional" approach the Bank is taking to help identify priorities for action, and said they are looking forward to the Bank's contribution at the Lucerne Conference.

They also indicated that they have begun thinking of an "Ecological Marshall Plan for Eastern Europe" and left with me a copy of an initial proposal (attached). They requested Bank comments on the paper in order to help them develop the concept/plan further. I said I would ask the Region to review the paper and provide them with any comments it may have.

They left with me two other papers which I also attach.

Attachments

cc: I. Serageldin (ESDVP), M. Wiehen (EC1DR), K. Dervis (EC2DR)
A. Steer (ENVDR), A. Seth (EMTEN)

An Ecological Marshall Plan for Eastern Europe

March 1993

The transition to a market economy and the economic and social hardships it involves naturally limit the abilities of Eastern European nations to carry out any significant projects in the area of environmental protection. Ecological problems, however, are often not confined within the borders of individual states, but instead increasingly represent dangers for neighboring countries as well. Europe as a whole is affected, and it would thus appear necessary and sensible - and in Western Europe's own interest - to support environmental protection in the East.

AN ECOLOGICAL MARSHALL PLAN FOR EASTERN EUROPE

The idea of a Marshall Plan for Eastern Europe has already arisen several times in public debate. Recently such a measure has also been discussed in connection with environmental clean-up. Under such an "Ecological Marshall Plan", each Western European nation would contribute, according to its economic means, to solving Eastern Europe's environmental problems.

This paper is an attempt to put such a proposal into concrete terms which may be used as a basis for discussion. The proposed "Ecological Marshall Plan", as a joint project between East and West, will attempt to ensure the most efficient use of resources available. Its goal is to secure certain minimum health standards within Eastern Europe as well as to effect, in the longer term, a shift to more environmentally friendly methods of production.

The Three Phases of an Ecological Marshall Plan

The Marshall Plan proposed here consists of three phases:

Phase 1: As an immediate step, the nations of Western Europe will raise capital to purchase environmental protection technology which will be placed at the disposal of Eastern European states. This "emergency measure" will enable industrial installations which pose particular health hazards to be repaired or reconstructed.

Phase 2: The nations of Eastern Europe will found national funds to which they will contribute, in their own currencies, the equivalent of the purchase price of the technology received.

Phase 3: From these national funds, loans will be granted for investments leading to substantial environmental improvement. Since the loans will be paid back into the funds, the funds will maintain themselves.

Phase 1: Immediate Assistance from the West

Our calculation assumes a total assistance package of US \$ 24 billion over a period of 6 years, or US \$ 4 billion per year. According to Bank Austria's estimates, this amount represents approximately 5 % of the total capital investment needs in the countries of Eastern and Central Europe.

Raising the Capital in Western Europe

The capital required from the West may be raised through the issuance of bonds, either by countries themselves or by international organizations. The contribution of each Western country could be determined in various ways. As an illustration, we have chosen three possible criteria:

- * a country's economic growth in the years 1990 to 1992
- * a country's wealth, expressed as per capita GDP, in 1992, and
- * its links with Central and Eastern Europe, expressed here very simply as its exports to that region.

The following tables show how much capital each Western European country would be expected to contribute under this model and how large a burden this would place on its GDP.

A Key for Determining Contributions

a) Factor based on average growth from 1990 to 1992

Growth of less than	-0.2% 1)	no contribution
Growth of between	-0.2% and 1.4%	0.12% of average GDP '93-'98
Growth of more than	1.4%	0.23% of average GDP '93-'98

1) 1.4%: unweighted average of growth of all countries,
0.2%: mean value less mean square deviation

b) Factor based on per capita GDP in 1992

Per capita GDP less than 80% of average per capita GDP
0% of GDP '93-'98

Per capita GDP between 80% and 100% of average per capita GDP
0.06% of GDP '93-'98

Per capita GDP between 100% and 120% of average per capita GDP
0.12% of GDP '93-'98

Per capita GDP more than 120% of average per capita GDP
0.19% of GDP '93-'98

c) Factor based on exports to Eastern Europe in 1991

The contributing countries would pay into the Fund 10.7% of their exports to Eastern Europe in 1991 (not including exports to countries of the former USSR).

The burden on the GDP of the contributing countries (that is, on their annual average GDP from 1993 to 1998) would amount to 0.24% in total or 0.04% per year. If the cost of financing is included, the resulting burden comes to around 0.28% of annual average GDP for the entire financing period (until the year 2007), or "only" 0.02% per year.

Financing the Capital

	Contribution to Fund		Share of		Contribution to Fund		With Financing	
	Total in US\$ bn.	6 Years, per Year in US\$ bn.	Fund in %	GDP in %	in % of Average GDP of Contr. Nations1)		6 Tranches of 10-year-bonds	
					Total	Per Year	Total in % of GDP 2)	Annual Payment over 15 years in % of GDP 2)
AUT	1,1	0,19	4,7	2,3	0,49	0,08	0,56	0,04
BEL	0,7	0,12	3,1	2,7	0,28	0,05	0,32	0,02
DK	0,6	0,10	2,6	1,8	0,35	0,06	0,41	0,03
SF	0,2	0,04	0,9	1,4	0,15	0,03	0,18	0,01
F	4,2	0,70	17,5	16,9	0,25	0,04	0,29	0,02
D (total)	7,0	1,17	29,2	24,2	0,29	0,05	0,34	0,02
GR	0,2	0,03	0,6	1,0	0,16	0,03	0,18	0,01
IS	0,0	0,00	0,1	0,1	0,19	0,03	0,22	0,01
IRL	0,1	0,02	0,6	0,6	0,24	0,04	0,28	0,02
I	3,7	0,61	15,3	15,5	0,24	0,04	0,28	0,02
LUX	0,1	0,01	0,2	0,1	0,42	0,07	0,48	0,03
NL	1,4	0,24	5,9	4,0	0,35	0,06	0,41	0,03
NOR	0,5	0,08	1,9	1,4	0,32	0,05	0,38	0,03
POR	0,2	0,04	1,0	1,0	0,24	0,04	0,28	0,02
ESP	1,7	0,28	7,1	7,3	0,23	0,04	0,27	0,02
SWE	0,6	0,10	2,4	3,1	0,19	0,03	0,21	0,01
CH	0,7	0,11	2,8	3,1	0,22	0,04	0,25	0,02
GB	0,9	0,16	4,0	13,3	0,07	0,01	0,08	0,01
Total	24,0	4,00	100,0	100,0	0,24	0,04	0,28	0,02

1) average GDP for 93 - 98 assuming nominal growth of 6% (2,5% real and 3,5% inflation)

2) average GDP for 1993 - 2007 assuming nominal growth of 6% (2,5% real and 3,5% inflation)

Source: Bank Austria/Economics Department

Raising the Capital

	Average GDP 1) in US\$ bn. Share GDP in %		Contribution to Fund based on			Contribution to Fund based on			Contribution to Fund based on		Contr. to Fund Total in US\$ bn.
			R. Growth 90/91/92 in %	in % of GDP 1)	in US\$ bn.	Per Cap. GDP 92 2) in US\$	in % of GDP 1)	in US\$ bn.	Exp. to Eastern Europe 91 3) in US\$ bn.	10,7% of Exports in US\$ bn.	
AUT	231	2,3%	3,1	0,23	0,53	23802	0,12	0,29	2,9	0,31	1,1
BEL	270	2,7%	2,2	0,12	0,31	21759	0,12	0,33	1,0	0,10	0,7
DK	177	1,8%	1,3	0,12	0,20	27765	0,19	0,33	0,9	0,09	0,6
SF	141	1,4%	-2,6	0,00	0,00	22629	0,12	0,17	0,4	0,04	0,2
F	1669	16,9%	1,8	0,12	1,92	23600	0,12	2,07	2,0	0,22	4,2
D (united)	2393	24,2%	1,5	0,12	2,75	24191	0,12	2,97	12,0	1,28	7,0
GR	99	1,0%	0,9	0,12	0,11	7771	0,00	0,00	0,4	0,04	0,2
IS	8	0,1%	-0,6	0,00	0,00	25846	0,19	0,02	0,0	0,00	0,0
IRL	60	0,6%	4,4	0,23	0,14	13820	0,00	0,00	0,1	0,01	0,1
I	1537	15,5%	1,6	0,12	1,77	21713	0,12	1,91	0,0	0,00	3,7
LUX	13	0,1%	2,6	0,23	0,03	26923	0,19	0,02	0,0	0,00	0,1
NL	401	4,0%	2,4	0,23	0,92	21460	0,12	0,50	0,0	0,00	1,4
NOR	139	1,4%	1,7	0,12	0,16	26373	0,19	0,26	0,3	0,03	0,5
POR	104	1,0%	2,8	0,23	0,24	8539	0,00	0,00	0,1	0,01	0,2
ESP	725	7,3%	2,5	0,23	1,67	14998	0,00	0,00	0,3	0,03	1,7
SWE	310	3,1%	-0,6	0,00	0,00	29012	0,19	0,58	0,0	0,00	0,6
CH	303	3,1%	0,6	0,00	0,00	35998	0,19	0,56	0,9	0,10	0,7
GB	1314	13,3%	-0,7	0,00	0,00	18378	0,06	0,81	1,2	0,13	0,9
Total	9894	100,0%	1,3		10,8	21137		10,8	22,4	2,40	24

1) Average GDP for 93 - 98 assuming nominal growth of 6 % (2,5 % real and 3,5 % inflation)

2) Population 1991 3) excl. former USSR

Source: Bank Austria/Economics Department

The Purchase of Environmental Technology in Western Europe

The US \$ 24 billion raised will be used for the purchase of US \$ 4 billion worth of environmental technology and know how in the West each year over a period of six years; these will be placed at the disposal of Eastern European nations. In this way, Eastern Europe will receive from the beginning the technology necessary to clean up the most dangerous installations.

The approach described will not only bring about a significant improvement in the environmental situation in the receiving countries but will also have positive effects in the countries which contributed the capital.

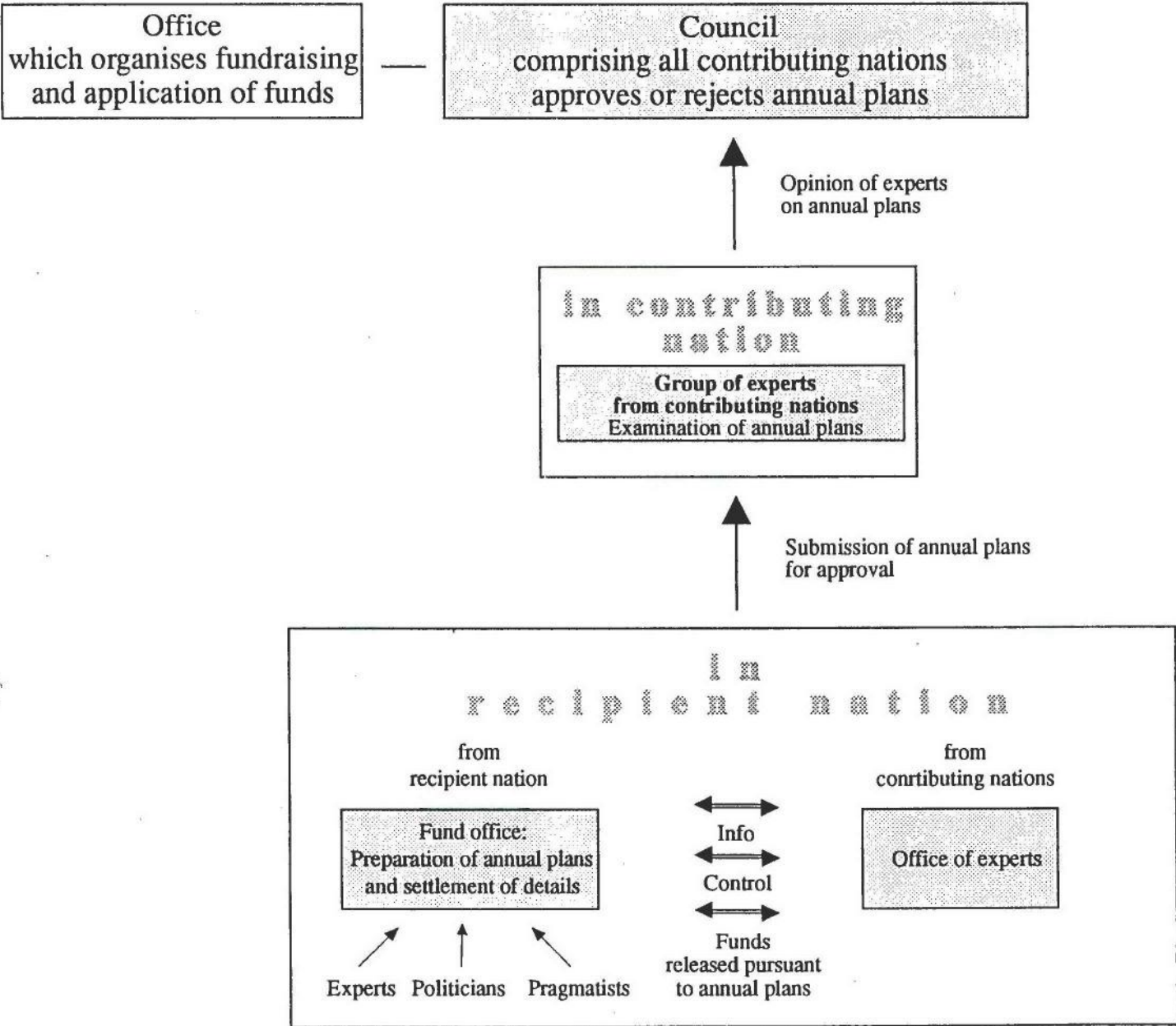
These include

- * reduced cross-border pollution
- * support for the environmental technology industry
- * additional income for the budgets of the contributing countries resulting from the increased value added of the environmental technology producers. From these budgets the bonds with which the capital was raised in Phase 1 will later have to be paid back.
- * the multiplier effect in the contributing countries.

Phase 2: The Foundation of National Funds in the Receiving Countries

In Phase 2, the technology and know how purchased by the West will be "sold" to the East in the sense that each Eastern European country will pay the equivalent of the purchase price in its own currency into a national fund. The purpose of the national fund is to finance environmentally relevant projects. The awarding and distribution of resources will be administered by an organization of the following structure:

Structure of the Ecological Marshall-Plan for Eastern Europe



Source: Bank Austria/Economics Department

Phase 3: Revolving Credit for Ecological Investments in the Receiving Countries

Finally, the money paid by the receiving countries into the national funds will be put to work for the environment, in analogy to the original Marshall Plan. The funds will make inexpensive loans to companies for environmentally relevant investments. The criteria for granting such loans have yet to be defined but should in any case be oriented toward these basic principles:

- improvement of the environmental situation
- benefit to the economy as a whole, and
- commercial soundness.

Repayments on the loans will secure the continued existence of the funds.

To prevent deterioration of the funds' assets through high local inflation, the value of loan repayments must be stabilized in some way (e.g. by linking the repayment amount to a foreign currency such as the US dollar, DM or ECU). Naturally, loans will go primarily to firms which are successful enough to be able to guarantee such repayments.

A further option could be to earmark loans for small and medium-sized businesses, which in these countries have little access to the normal "capital market", such as it is.

Obviously, many of the points outlined here need to be discussed at greater length, in particular the amount of resources needed, the key for determining contributions and the criteria to be applied for granting loans in Phase 3. Nevertheless, we feel that this proposal may serve as a basis for discussion for coordinating Europe's efforts to improve the environmental situation in Eastern Europe.

March 29, 1993

Memorandum

Environment Ministers of the Republic of Croatia, the Republic of Hungary, the Slovak Republic, the Republic of Slovenia and the Republic of Austria

meeting in Vienna from 28 - 29 March 1993 on the invitation of the Austrian Federal Minister of Environment, Youth and Family Affairs,

after having taken note of the discussions of high-level representatives of funding agencies, industry and the banking sector, among them a representative of the European Bank for Reconstruction and Development, have agreed on the following:

The Ministers,

taking into consideration the political and personal changes that have occurred during the last months in the Central- and Eastern European Region,

considering the dimensions of the damage to the environment, for which urgent solutions are being required,

conscious of the need for close co-operation, if a tangible improvement of the state of the environment is to be achieved in a joint effort on both regional and sub-regional levels,

mindful of the fact that this improvement has to take effect in a period of structural adjustments and economic recession,

taking advantage of this meeting to address the main elements of environmental damage in their countries and share ways and means of possible co-operation, underlining the importance of joint initiatives, such as projects and workshops as the most appropriate tool in this respect,

noting with satisfaction the efforts undertaken by the international community in the preparatory process of the 2nd Pan-European Conference of Environment Ministers in drawing up, inter alia, a first comprehensive Environmental Action Programme for Central and Eastern Europe,

taking into consideration the hope expressed by Austria that its neighbouring countries would consider the phase-out of nuclear energy in a not too distant future, and reaffirming, that serious efforts are under way to secure the safe operation of nuclear facilities as well as examination of alternative options to nuclear energy,

underlined the need for a regional concept and close co-operation in the field of energy, based on the principles of the conservation of energy, the most efficient use of energy, and the development of renewable energy sources,

furthermore recognized the concept of labelling of all kinds of timber as another step aiming at the improvement of the global environmental situation,

and agreed to set up, in close co-operation with the Central-European Initiative, a task force with the mandate to elaborate a joint programme in order to raise the energy conservation potentials in the participating countries and encourage the use of alternative energy sources, including relevant research and training programmes,

further agreed to the need to elaborating new and innovative approaches towards environmental assistance management on the regional and sub-regional basis in supporting the Pan-European approach,

welcomed the Austrian model of an "Ecological Marshall Plan" as a possible input for the discussions in the frame of the 2nd Pan-European Conference of Environment Ministers in Lucerne in April 1993 in order to eventually be developed into a new mechanism of financing sustainable development in the countries with economies in transition, supporting already ongoing relevant activities, and agreed to inform the Lucerne Conference on the content of their deliberations in an appropriate way,

concluded the meeting with expression of gratitude to Austria for organizing and hosting this conference.

Eco-social market economy - guideline for the European Democrat Union

The more than 30 European Christian Democratic, Conservative and Centre parties which are members of the European Democrat Union adopted the concept of an eco-social market economy as their common political guideline on the occasion of their 14th conference of party leaders on 11-13 September 1991.

The very comprehensive paper (Bulletin 43) which was the basis of this decision is a detailed guide to the practical application of the eco-social market economy. The "spirit" of this paper can be illustrated by two extracts:

"When one translates economic instruments into practice, one must ensure that one has available a large number of measures which can be applied simultaneously. Environmental taxes and emission levies are certainly not the only options. A combination of tax concessions, certificates, deposits and cash return systems, and subsidies for processes which do not burden the environment, have to be used together with taxes and levies. When introducing environmental taxes one must start from the premise that the whole system of taxes, levies and charges has to be rethought on a basis of ecological considerations. Thus in the course of time new bases of taxation will be introduced (e.g. the consumption of primary energy, canalisation of sewage, emissions of combustion gases, fuel consumption, etc.), whereas other taxes will be reduced (income tax, turnover tax, etc.). These changes should also be guided by the basic idea of reducing the tax burden as a whole. Some recommendations for international cooperation:

The European integration process must be built on ecologically tolerable principles. It is of considerable importance that the protection of the environment should have the same status as economic matters as a subject of negotiation. These two fields constitute a single whole and cannot be treated separately. That means that the EDU countries must have a common environmental strategy in the process of integration.

In view of the task which is facing the present generation, namely, to achieve the transition from a non-sustainable to a sustainable economic system, the eco-social market economy offers what is at the moment the best of the known means of accomplishing the change. Every other known solution would be slower, less effective, or would have a more destructive effect on the economy and the environment as a whole. In this sense the EDU partners in their member countries are now faced with the greatest challenge in the socio-economic history of the human race - that of ensuring a dignified survival in a limited world."

One could not wish for a more impressive confirmation of the political structural initiative which originated with the Austrian People's Party - the concept of an eco-social market economy.

The Ten Principles of the Eco-Social Market Economy

1. Nothing works better than the market!

During the past few years we have observed the total collapse of the centrally planned command economy of "real socialism". This system had to disintegrate, because it fundamentally contravened human nature. People want to be respected as individual personalities, they want to be rewarded for achievement, they want to do things for themselves, they want to build up something for themselves and their nearest and dearest.

These basic human drives have to be mobilised, but also guided into the right channels. Otherwise we will end up with a brutal "elbow-capitalism" in which the race is to the strong and the weakest go to the wall. The art of politics is thus to direct the enormously strong and irreplaceable market forces in such a manner that they work for socially desirable ends.

The social market economy realised the desired objective of the 1950s and 1960s, namely, high economic growth combined with enhanced social security, in a unique manner. The result was increasing prosperity for more and more people.

For about 20 years, however, a fresh question has been dramatically coming to the forefront: how are we going to assure the basic necessities of life for our generation and those to come? Most of the solutions which were initially proposed ran contrary to economic interests. And so a new "classic conflict" arose: economy versus environment. In the field of practical politics, the ideas which were advanced varied according to the ideological background:

- * the conceptions of the Green-alternative movements, based on deep hostility towards industry and technology;

- * the outdated social democratic model of the most perfect possible central regulation and bureaucratic control of all entrepreneurial activity;

- * the pragmatic answer of using legislation, prohibitions and regulations to limit the effects of economic activity on the environment.

None of these is capable of mobilising the market forces for the environment. The only logical political concept to date which meets this aim is the eco-social market economy, the decisive core of which is:

2. Give the market the right signals

The laws of the market are very simple: supply and demand determine price. And according to this law industry and the consumer society have both walked into an ecological trap! Because humanity has fallen victim to a totally false evaluation since the very beginning of the industrial revolution 200 years ago: the resources of air and water which are essential for the maintenance of life were declared "free commodities". That means

that they have no market price. And the market, obeying its own laws, has reacted quite correctly: that which costs nothing can be consumed without restriction. The same applies to the limited and relatively much undervalued resources like, for example, fossil energy carriers, minerals and other raw materials, and in a global context also foodstuffs.

In concrete terms, eco-social market economy means that we have to alter our scales of values! From this emerges a completely new price-cost structure, and market forces suddenly start to take effect in a completely different direction. That is the totally new and highly explosive political message of the eco-social market economy.

But what practical steps can one take to alter those signals which affect the market forces? For example, by honestly including consequential costs in prices, by transferring the burden of taxation from human labour and renewable resources to non-renewable resources and those which pollute the environment, and by creating local markets for local produce. These lead on to further concrete political instruments of the eco-social market economy:

3. Regulation by taxation

The taxation system must make the protection of the environment attractive. In addition to the central aspect of tax policy - reducing the overall burden of taxation and simplifying tax collection, especially for commercial companies - the most important task is a redistribution of the tax burden on ecological lines. It would naturally have to be done with an eye on developments within the European Community, but this does not relieve the Austrian legislators of the responsibility of making their own decisions in advance. A first step must be to reduce taxation on energy-saving plant and means of transport as well as on local-produced renewable and environmentally-benign energy carriers. The equivalent increase must be carried by fossil fuels and energy-intensive plant and means of transport. In the longer term we must consider reducing the taxation of human labour while increasing the taxation of fossil fuels.

4. The environment also has its price

Environmental costs must be recognisable and effective

The clear allocation of environmental costs and new cost signals - for example deposit systems and the inclusion of disposal costs in product prices - must lead to more environmentally conscious and economic behaviour on the part of consumers and producers alike.

5. Restrict prohibitions to the absolute minimum

It is self-evident that not even an eco-social market economy can succeed with market instruments alone. It will still be necessary to ban products which damage health and the environment, to issue directions for traffic behaviour and production methods, and to

lay down conditions for industrial plant, etc. The essential difference is that these should be used only here and there when the market instruments (price formation, tax regulation, deposit systems, etc.) prove insufficient or fail to function.

6. The consumers must know what they are buying

Product descriptions and declarations which are clearly written and easily understandable by lay people are an essential precondition if purchasing decisions are to be guided by environmentally conscious consumption patterns, and if manufacturing decisions are to be oriented towards environmentally benign production methods. It is also very important that environmental quality becomes a value in itself, and thereby also an important component of a positive image for producers and consumers alike. Public awards for environmentally conscious behaviour can have a significant psychological effect.

7. Subsidies only for future investment and not to conserve the past

The objective of economic and taxation policy as a whole must be to reduce taxes and levies, and thereby increase the chances for the industrious in general competition. The granting of subsidies should therefore be the exception to the general rule in economic policy. This exception is investment for research and development, meaning in effect investment for tomorrow. The development of technologies for restoring and protecting the environment, and for environmentally beneficial production methods, serve on the one hand to improve our environmental situation, and on the other to enhance the international competitiveness of the Austrian economy.

8. Environmental education is the foundation of improved environmental protection

This refers not only to environmental consciousness as a general aim of education, but also to the training of environmental specialists and the creation of new occupational groups and new job analyses. An essential role in this connection is the ecological example set by the state, but also ecological training in the family and school.

9. Environmental protection must be an international responsibility

On the one hand, environmental problems are very often transborder in nature, and on the other hand environmental technologies can be developed and applied only through the international pooling of economic and scientific know-how. This common international action is a matter of simple survival for all the countries of the European continent. Therefore, starting from the pace being set by the European Community, binding minimum standards for environmentally-oriented action should be set for all the countries of Europe, perhaps through the medium of the Council of Europe or the Conference on Security and

Cooperation in Europe (CSCE). The former communist countries will have to be assisted thereby, technologically as well as financially, to enable them to make the transition. Obligatory environmental objectives at global level must be set within the framework of the United Nations.

10. A new economic compass

The eco-social market economy must lead to the alteration of a whole series of instruments of practical economic policy. For example, the objective is not the restriction but the "qualification" of economic growth. To this end there will have to be a fresh calculation of important economic indicators such as gross domestic product.

Austria's social partnership is called upon to assume the role of an eco-partnership, and thereby to demonstrate that it is in a position to apply itself to new structural challenges.

Industry requires a long-term catalogue of environmental aims in order to enable managers to look ahead and integrate the means of avoiding environmental damage into their investment planning.

Environmental technology must be made a key item for direct economic support. Priority has to be given to the developing techniques of biotechnology, microelectronics and the uses of biomass.

The avoidance of environmental damage is more important than repairing it after it has occurred. Manufacturers and consumers who look ahead must therefore be placed in a position whereby they themselves can take environmental considerations into account.

Eco-Social Market Economy

A summary

SUSTAINABILITY - the key word of a new order

There are insights and new ways of thinking which are embraced and articulated, suddenly and simultaneously, by different people in different places, by people with the most diverse range of interests and functions. Such a phenomenon is the concept of "sustainability", which will be the central theme for the 1990s.

It is used in European Community documents; it was the main theme of the United Nations Conference on the Environment in Rio de Janeiro; and it is the subject of a whole range of scientific and economic publications.

Eco-social market economy - the political programme for a sustainable social order

Many people will doubtless criticise this idea as presumptuous. It is not, however, because:

- * the SOCIAL MARKET ECONOMY is the only political system which has succeeded in replacing the classic conflict of the century which is now drawing to a close - the conflict between capital and labour. It has done this with considerable success, and in a manner compatible with human nature;
- * the ECO-SOCIAL MARKET ECONOMY mobilises the same forces - a free market, property, self-responsibility, subsidiarity, and also solidarity - as protection for the weak and the helpless;
- * and, in short, because the eco-social market economy also mobilises the energy of the market for the protection of the environment. Environmental protection must be made profitable, and environmental damage must be rendered uneconomic!

The Ten Principles of the Eco-Social Market Economy

1. Nothing works better than the market!

Experience has shown attempts to obtain environmental improvements through legislation, regulations and prohibitions to be fundamentally misguided. On the contrary, the market forces must be mobilised for the benefit of the environment.

2. Give the market the right signals

Supply and demand determine price. The environment is a commodity which is becoming more and more expensive. Consequential environmental costs must be included in the price calculation. There must be a transfer of the burden of taxation from human labour and renewable resources to non-renewable resources and those which pollute the environment.

3. Use taxation to benefit the environment

The taxation system must make the protection of the environment attractive. The most important task is a gradual redistribution of the tax burden on ecological lines. Taxation on energy-saving plant and means of transport as well as on renewable and environmentally-benign energy carriers should be reduced. The equivalent tax increase must be carried by fossil fuels and energy-intensive plant and means of transport.

4. Environmental costs must be recognisable and effective

The clear allocation of environmental costs and new cost signals - for example deposit systems - must lead to more environmentally conscious and economic behaviour on the part of consumers and producers.

5. Restrict prohibitions to the absolute minimum

It will remain necessary to ban products which damage health and the environment, to issue directions for traffic behaviour and production methods, and to lay down conditions for industrial plant, etc. These should be used when the market instruments prove inadequate or fail to function.

6. The consumers must know what they are buying

Informing and motivating the consumer plays an important role. This includes product descriptions which are clearly written and easily understandable by lay people.

7. Subsidies only for investment for the future

In a healthy economy subsidies should be the exception to the rule. The exception is investment for research and development. What should be supported is investment for tomorrow.

8. More environmental education brings more environmental protection

Environmental consciousness must be a general aim of education. This includes ecological training in the family and school. It is also necessary to train environmental specialists and create new occupational groups in the service of the environment.

9. Environmental protection must be an international responsibility

Environmental problems are often transborder in nature: air, for example, knows no frontiers. Significant environmental technologies can be developed and applied only through the international pooling of economic and scientific know-how. Austrian membership of the European Community is just as important for environmental reasons as for economic ones.

10. A new economic compass

The eco-social market economy must lead to the alteration of a whole series of instruments of practical economic policy. For example, the objective is not the restriction but the "qualification" of economic growth. To this end there will have to be a fresh calculation of important economic indicators such as gross domestic product.

VISIT OF
HER EXCELLENCY MARIA RAUCH-KALLAT
FEDERAL MINISTER OF ENVIRONMENT, YOUTH AND FAMILY AFFAIRS,
AUSTRIA
TO WASHINGTON AND NEW YORK, APRIL 3 - 8, 1993

AUSTRIAN DELEGATION:

Ms. Maria RAUCH-KALLAT	Minister of Environment, Youth and Family Affairs
Mr. Heinz SCHREIBER, Ph.D.	Director-General, Federal Ministry of Environment
Mr. Georg REBERNIG, M.B.A.	Assistant Director, Federal Ministry of Environment
Mr. Ralf BOECKLE	Advisor to the Minister in environmental issues
Ms. Eva-Maria FLUCH, M.A.	Advisor to the Minister in youth and family affairs

Press:

Mr. Kurt M. Mayer

Kurier

GLOBAL ENVIRONMENT FACILITY
Participants' Meeting
March 4 - 5, 1993

FAO Headquarters
Rome, Italy

Austria

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(Please type or print clearly)

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Name(s): 1. LUST HERBERT
Title DIR. DEPT. INT. FIN. INST.

2. _____
Title _____

3. _____
Title _____

4. _____
Title _____

5. _____
Title _____

Organization: MINISTRY OF FINANCE
Address: A 1010 WIEN, HIMMELPfortg. 4-8
AUSTRIA
Telephone: 51433 / 2284 Fax: _____

Will you be attending the reception on March 4? yes no

cc: IT

FEDERAL MINISTRY OF FINANCE

Himmelpfortgasse 4 - 8
A-1015 Vienna

Mag. Herbert Lust
Tel. 51433/2284
Fax. 51433 2155

TELEFAX

(Fax.No. 001 202 477 0565)

2 page(s)
Vienna, February 16, 1993

Global Environment Facility
att.: Mr. Mohamed T. El-Ashry
Chairman


Dear Mr. El-Ashry,

I will participate on behalf of Austria at the GEF-Meeting on March 4 and March 5, 1993.

I appreciate the "IDA-like" process you mentioned in your letter of February 8, 1993, for the organization of the replenishment process.

With regard to the meeting planned in the afternoon of March 3, 1993, at Ministero del Tesoro in Rome, please be informed that I will arrive in Rome at 2 o'clock and would suggest that such an afternoon meeting would not start before 3 p.m.

Best regards,



(Herbert Lust)

THE WORLD BANK/IFC/M.I.G.A.
GLOBAL ENVIRONMENT FACILITY
Headquarters: Washington, D.C. 20433 U.S.A.
Tel. No. (202) 473-1053 // Fax Tel. No. (202) 477-0551 // Telex No. RCA 248423
FACSIMILE COVER SHEET AND MESSAGE

DATE: January 25, 1993

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MESSAGE NUMBER: 2

TO

Name: Mr. Marion Wrba
Organization: Austrian Mission to the U.N.

Fax Tel. No. (212) 953-1302
City: New York
Country:

FROM

Name: Hector J. Tavera
Dept./Div. ENVGE
Room No. S-5035

Fax Tel. No. (202) 477-0551
Dept/Div No. 655/35
Tel. No. (202) 473-3656

SUBJECT:

MESSAGE:

Per our conversation, please find attached the Chairman's Summary of the last Participants' Meeting in Abidjan, Côte d'Ivoire, December 3-5, 1992.

Transmission authorized by: Ian Johnson\

If you experience any problem in receiving this transmission, inform the sender at the telephone or fax number listed above.

GLOBAL ENVIRONMENT FACILITY

PARTNERS IN GLOBAL SOLUTIONS

PARTICIPANTS' MEETING

Abidjan, Côte d'Ivoire

Chairman's Summary

1. The process of restructuring the GEF got off to a good start at the fourth Participants' Meeting that was generously hosted by the Ivoirian Government in Abidjan, Côte d'Ivoire, December 3-5, 1992. We have used this first post-Rio meeting to build upon Chapter 33 of Agenda 21 and the agreed document Beyond the Pilot Phase.
2. While the focus of this meeting was on governance, we also paid due attention to the continued implementation of the Pilot Phase. The Fourth Tranche was endorsed with the proviso that the oral comments of Participants will be taken into account in further project preparation, as will the written comments that we look forward to receiving by January 15. In addition, there was a clear consensus in favour of the implementing agencies providing more information on project implementation prior to approval. We will also be reporting to you on the disbursement of funds and procurement.
3. Back to governance. We have concentrated our energies on the two issues of the legal framework of the restructured GEF and its decision-making arrangements.
4. I am pleased to say that the proposal on the legal framework, as outlined in the Secretariat's proposal, is satisfactory to Participants. It is clearly understood that the final document, complete with annexes, must be endorsed by the Participants prior to adoption and that any future amendments would require consensus by the Participants' Assembly.
5. On decision-making, the sense of this meeting was that the GEF would be best served by a constituency arrangement that maximizes efficiency, harmony and cooperation, and a voting system for exceptional cases, when consensus eludes us. A number of proposals have been made, but clearly more work is needed. An issues paper with illustrative examples and simulations will be prepared for the March 1993 meeting. Any comments should be submitted to the Administrator's Office by January 15th. What we will always keep clear in mind are the principles adopted in Rio and Washington, D.C., particularly with regard to safeguarding the interests of recipients and contributors.
6. Participants reaffirmed the agreed objective of universal membership and its importance for the future structure of the new GEF. The consensus of the meeting was that there would not be a set membership fee. However, administrative expenses could be recovered, taking into consideration countries' ability to pay.

7. STAP's invaluable contribution to the GEF was recognized in many interventions from the floor. Clearly the Panel will continue to play a central role in the future. A number of proposals are on the table for its future structure, composition, and criteria for selection. We have had a first, useful exchange on these proposals and work on them will continue as we move further into the transition phase.
8. With regard to NGOs, I would like to underline the important role the non-governmental sector continues to play in the GEF as evidenced in the consultations that preceded this meeting. The consultation also highlighted the need to strengthen our efforts - especially in developing countries - on regional and national outreach and consultations to bring a **wider range of organizations** into the process, particularly at the grassroots. We will prepare a paper on NGOs and the GEF and submit it to Participants for discussion at their next regular meeting in May 1993.
9. UNDP will prepare for Participants a full progress report on the Small Grants Programme by the end of January 1993, as the basis for the provision of additional resources. Meanwhile, a \$2 million allocation will be made to ensure continuity, subject to the approval of the progress report.
10. Participants recognized the significant contribution that the Regional Development Banks and UN specialized agencies can play in the GEF of the future. They encouraged the implementing agencies to continue to work with both the regional banks and the UN agencies on framework agreements to enable them to act as cooperating and executing agencies in the restructured GEF. They affirmed that the RDBs should work closely with the World Bank on investment projects and the U.N. agencies with UNDP on technical assistance. However, Participants emphasized that the implementation function in the GEF should continue to rest with the three established implementing agencies. They were not in favour of specific earmarking of resources to either the RDBs or UN Agencies.
11. Participants stressed that the linkages with the conventions are the axis about which the restructuring of the GEF must turn. They encouraged efforts already underway to work with the secretariats of the climate change and biodiversity conventions, and to assist developing countries in the formulation of their action programs and strategies under the conventions. We will continue our endeavors on both fronts in the year ahead while at the same time liaising closely with the interim institutions of the conventions.
12. Several Participants referred to the impetus provided by UNCED to the negotiation of a convention on desertification. The GEF would clearly be ready to work with the parties to an eventual convention to see how the GEF might assist them to achieve global environmental benefits. Meanwhile, in line with the April agreement, we have already begun to include land degradation issues, as they relate to the four thematic areas, in the work program of the Pilot Phase. There are two such projects in Africa in the fourth tranche and a workshop was held in Nairobi in November 1992 to articulate criteria and guidelines on this important issue. Concerns have also been raised about fresh water. The global aspects of this problem cut across the thematic lines of the GEF and should be addressed in the context of the international waters theme in the operational phase.
13. This meeting has made substantial strides towards our goal of completing the restructuring of the GEF by this time next year. The Administrator outlined the work program that we must

implement in the course of the next twelve months. It is certainly ambitious but if we maintain the momentum of this meeting we shall succeed. We must make sure that the GEF matures to become a transparent and effective entity that serves its purpose of integrating global environmental concerns into the development process, both as a facilitator and funding mechanism.

14. In order to maintain momentum we will move through a transitional phase, beginning in May 1993, during which we will gradually begin to implement agreed elements of the restructuring. However, the final and complete package will have to be examined and approved at the first full meeting of the Participants' Assembly. We must also complete the evaluation of the Pilot Phase, actively pursue co-financing arrangements, and provide support ~~for convention~~-related activities.

15. In addition, negotiations on the replenishment should be initiated early in 1993. A broad consensus has emerged that an IDA-like approach should be followed. In this regard, talks on replenishment will be arranged in parallel with, but separate from, our on-going work on restructuring. Thresholds for contributions to the core fund as well as a suitable formula for burden-sharing will need to be considered.

16. We recognize that an impartial evaluation of the Pilot Phase is essential to the successful restructuring of the Facility and its replenishment. We welcome the Swiss delegation's suggestion and Participants' comments on this issue. A proposal and terms of reference for this evaluation will be prepared by the Secretariat for your review.

17. We must now act as expeditiously as possible to carry our plans through to fruition. To this end, we will meet for a one-day session in early March 1993 to continue discussions on decision-making and the priorities for the transition. This session will take place either in Europe or North America, to be followed by the fifth regular meeting of Participants in late May 1993. I am pleased to report that the Government of China has extended an official invitation to hold the meeting in Beijing.

Thank you.

December 5, 1992.

THE WORLD BANK/IFC/M.I.G.A.
GLOBAL ENVIRONMENT FACILITY
Headquarters: Washington, D.C. 20433 U.S.A.
Tel. No. (202) 473-1053 // Fax Tel. No. (202) 477-0551 // Telex No. RCA 248423
FACSIMILE COVER SHEET AND MESSAGE

DATE: January 13, 1993

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MESSAGE NUMBER: 2

TO

Name: Mika Iwasaki
Organization: World Bank Tokyo Office

Fax Tel. No. (81-3) 3214-3657
City: Tokyo
Country: Japan

FROM

Name: Nathalie Johnson
Dept./Div. ENVGE
Room No. S-5025

Fax Tel. No. (202) 477-0551
Dept/Div No. 655/35
Tel. No. (202) 473-3765

SUBJECT: Press release on 1992 GEF Meeting in Abidjan.

MESSAGE:

Per your request, please find attached.

cc: Japan
file

Transmission authorized by: Ian Johnson\

If you experience any problem in receiving this transmission, inform the sender at the telephone or fax number listed above.

GLOBAL ENVIRONMENT FACILITY

PARTNERS IN GLOBAL SOLUTIONS

PARTICIPANTS' MEETING

Abidjan, Côte d'Ivoire

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14. In order to maintain momentum we will move through a transitional phase, beginning in May 1993, during which we will gradually begin to implement agreed elements of the restructuring. However, the final and complete package will have to be examined and approved at the first full meeting of the Participants' Assembly. We must also complete the evaluation of the Pilot Phase, actively pursue co-financing arrangements, and provide support for ~~convention~~-related activities.

15. In addition, negotiations on the replenishment should be initiated early in 1993. A broad consensus has emerged that an IDA-like approach should be followed. In this regard, talks on replenishment will be arranged in parallel with, but separate from, our on-going work on restructuring. Thresholds for contributions to the core fund as well as a suitable formula for burden-sharing will need to be considered.

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Thank you.

December 5, 1992.

THE WORLD BANK/IFC/M.I.G.A.
GLOBAL ENVIRONMENT FACILITY
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Tel. No. (202) 473-1053 // Fax Tel. No. (202) 477-0551 // Telex No. RCA 248423
FACSIMILE COVER SHEET AND MESSAGE

DATE: January 12, 1993

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MESSAGE NUMBER: 2

TO

Name: Mika Iwasaki
Organization: World Bank Tokyo Office

Fax Tel. No. 3214-3657
City: Tokyo
Country: Japan

FROM

Name: Nathalie Johnson
Dept./Div. ENVGE
Room No. S-5025

Fax Tel. No. (202) 477-0551
Dept/Div No. 655/35
Tel. No. (202) 473-3765

SUBJECT: RE: Press Release of 1992 GEF Meeting in Abidjan.

MESSAGE:

Per your request, please find the press release on the outcome of the last GEF meeting in Abidjan, Côte d'Ivoire.

Transmission authorized by: Ian Johnson\

If you experience any problem in receiving this transmission, inform the sender at the telephone or fax number listed above.

GLOBAL ENVIRONMENT FACILITY

PARTNERS IN GLOBAL SOLUTIONS

PRESS RELEASE

CONTACT: Nathalie Johnson (202) 473 3765.

Restructuring the Global Environment Facility tops Agenda at Abidjan Meeting.

Washington, D.C. November 24 1992. The restructuring of the Global Environment Facility (GEF) to make it better able to help developing countries tackle global environmental problems tops the agenda of an international meeting taking place in Abidjan, Cote D'Ivoire December 3-5, 1992.

The GEF was set up in 1990 to provide grants to developing countries for projects aimed at protecting the global environment. The GEF, which received initial funding of about \$1.3 billion, finances projects and promotes policies that reduce global warming, protect international waters, conserve biological diversity, and prevent further depletion of the ozone layer.

During next week's meeting some 40 governments will consider proposals to restructure the Facility. This follows the designation of the GEF as the interim funding mechanism of the Climate Change and Biodiversity Conventions signed at the Earth Summit in Rio in June. The GEF was also endorsed in Agenda 21, the ambitious development and environment agenda for the 21st century agreed at Rio.

The main changes in the structure of the GEF to be discussed in Abidjan are the decision-making system, the legal framework, and the links between the GEF and the environmental conventions.

The replenishment of the GEF will also be discussed. Several countries in Rio said they would increase their pledges to the GEF once the Pilot Phase ends at the end of 1993. Negotiations on the replenishment begin early next year and are scheduled for completion by the time the restructuring of the GEF is concluded at the end of 1993.

Governments will also be reviewing some \$114 million worth of projects. These will bring the total GEF portfolio to about 100 projects for a total of \$700 million. Some 20% of these projects are in Africa, 34% in Asia, 19% in the Arab States and Eastern Europe, and 22% in Latin America and the Caribbean. About 46% of funds are earmarked for conserving biodiversity, 40% for preventing global warming, with the rest going to international waters projects and ozone depletion.

file

Austria Comments
on GEF 5th Tranche

Cameroon - Biodiversity Conservation and Management

In our view, the overall concept of the project is worth to be supported by GEF-funds. Nevertheless, it should be pointed out that the project-title does not reflect the main goal of the project. The project is designed for forest biodiversity and leaving beside other dimensions of biodiversity with respect to wetlands, agriculture and other issues like ex-situ conservation. Furthermore, the about 44 % of the country originally covered with forests are heavily degraded (around 60 %) by now. Therefore the figures in the project brief should be revised accordingly.

In addition to the comments of the technical review and the STAP, which does not seem to be adequately reflected in the Project Brief, some more points should be considered.

1. According to Alpert (1993) a number of sources of data for conservation issues are already available for the relevant areas in Cameroon as well as for the whole country. The use of this material would probably reduce the financial needs of the project and speed up the process.
2. A number of international and national NGOs are already active in conservation- projects in Cameroon, especially in the areas of relevance. A close coordination and cooperation with these partly internationally founded activities would avoid duplication as well as foster the speed of process.
3. The drafted new forest policy should first enter into force before planning a financial involvement of GEF. The actual valid policy as laid down in Law No. 81-31 of November 1981 and the subsequent decrees do not seem to be a good basis for a sustainable forest, wildlife and protected area management.

We would like to support this project in case the raised issues are settled, although, the overall project is supported in general.

Mauritius - Restoration of Highly Degraded and Threatened Native Forest

In agreement with the STAP we ~~comments.~~ We would like to support this project proposal.

Tanzania - Biogas from Municipal and Industrial Organic Wastes

The idea behind the project proposal is indeed a very excellent one. Nevertheless, a number of issues should be raised and settled before this project is approved.

1. The collection and sorting of household waste is of great importance for the success of such a project. As there is hardly any waste separation in African towns the household, workshop and industry waste is mixed. Beside the organic waste fraction one will find plastics, chemicals, production residues and by-products, batteries and other substances which are difficult to separate after collection. This might have a negative impact on i) the biogas process due to inhibitory substances in the waste, and ii) the possibility to use the produced sludges as a fertilizer because of contamination with e.g. heavy metals.
2. Industries which produce organic waste seem to be more feasibly to be used than the

resource for the biogas plant, as the produced waste is very likely to be more homogenous and therefore easier to handle. Mixed waste sometimes have an improved behaviour during an anaerobic digestion compared to single source waste, but the logistics to maintain a certain composition for an optimum performance of a biogas plant seem to be a rather serious problem.

As stated in the STAP comment, pilot trials to find out the digestion feasibilities should be carried out first to achieve an idea of the behaviour of the process under the given conditions.

As a result, we would like to ask for an in-depth evaluation of the socio-economic and technical/biological parameters, parameters like, inter alia, waste composition and degree of separation, collection management, safety of supply, technological infrastructure, gas processing, storage and distribution, which are probably more important for the success of this project than the biogas technology itself. Furthermore, there is still the question if a number of small plants would not be more favourable than one large scale plant. This question is of relevance with respect to safety of energy production, maintenance and service, training capacities and the possibility of an easy adaption to changing situations.

Mongolia - Biodiversity Conservation Plan

The project proposal is well conceived and worth supporting through GEF. We would like to point out that the experiences of FAO/UNEP gained through the Przewalski Horse Project should be kept in mind and integrated in this project. The possible sustainable use of Mongolia's biodiversity should be given far more attention, too.

India - GHG Reduction Strategy

It is recommended that the various similar projects as mentioned in the project proposal should cooperate intensively to avoid duplication and hence costs. Furthermore, more attention should be paid to means of implementation to put the recommendations into action.

Tunisia - Market Penetration of Solar Water Heating

While in full agreement with the STAP comment, we would like to address the issue of a possible replicability.

Furthermore, the means of as well as criteria for an assessment and evaluation need have to be defined. Nevertheless, this project proposal could be supported even further if some catalytic effects would arise out of the project and increase the application of environmental benign solar energy systems.

With respect to the project proposal of "Regional GHG Reduction Strategies in Arab States" duplication should be avoided. As Tunisia is included in the list of participating countries in this project, it seems appropriate to await the output of this project to direct GEF funding according to the most promising fields according to the recommendations of the strategies to be developed.

Arab States - Regional GHG Reduction Strategies

This project needs to be more precisely defined with respect to the participating countries. In our view, it does not make very much sense to treat countries like Sudan,

Lebanon or Djibuti the same way as e.g. Algeria, Bahrain or Egypt, for various reasons. Also, Sudan seems to fit into the list of countries where UNDP is not fully operational. Due to different stages of development, the grade of industrialization and other factors, the needed national strategies are very likely to be very defined for the mentioned countries.

While an idea of regional and sub-regional networks is not a new or innovative one (a number of networks have already been created through the decisions of the African Ministerial Conference on the Environment - AMCEN - and the subsequent activities as coordinated through UNEP/Regional Office of Africa; a number of the countries mentioned in the project proposal are members of AMCEN) such networks seem reasonable tools for mutual assistance and for the exchange of information and experience. Nevertheless, no indication is given as to the positions of the involved countries with respect to this proposal.

In our opinion, this proposal should be revised with respect to the different needs of the countries/regions involved. A splitting into three subprojects seems a possible solution to address the diversity in the region as mentioned in the project brief and this comment.

The objectives of the project proposal are worthwhile for support. What is needed from our point of view is an approach tailored to the needs and priorities of the different countries and regions, respectively.

Jamaica - Demand-site Management Demonstration Project

In agreement with the comments of STAP, we would like to support the project proposal.

Southern Cone - Monitoring and Research Network

While the project seems to be very well designed and a timely one, it is a project of purely scientific interest of ozone depletion and UV-B radiation. No activities which would eventually initiate the correction of the problem can be found in the project proposal. Therefore, we would like to emphasize the recommendation of STAP to seek for other funding sources for this important project, e.g. within the framework of the existing Convention. We are of the opinion that the US-\$ 1.9 Million spend for the reduction of ozone depleting substances would be of more interest for GEF according to its priorities, and of a higher global benefit.

Inter-Regional:

Global - Climate Change Capacity Building

We fully support the opinion of the technical review and STAP to reformulate the project proposal to make it more precise and to coordinate the project with the relevant international organizations and activities.

THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION
OFFICE MEMORANDUM

DATE: February 26, 1992

TO: Mr. Mohamed T. EL-ASHRY, ENVDR, S 5029
Telefax 477-0565

FROM: Walter RILL, EDS10, IMF 11-302


EXTENSION: 623-4582

SUBJECT: Further Development of the GEF
Position of Austria

Dear Sir,

Please find enclosed a paper describing Austria's position with respect to the further development of the GEF. It is the result of discussions which I had in Vienna after attending the Geneva meeting on February 14, 1992. Therefore, it reacts at least partly to some of the comments made at that meeting in Geneva.

Best regards,
Walter Rill



Further development of the GEF
Position of Austria

1. In broad terms we can agree with the principles outlined in Part II of the "First Draft on the Future Evolution of the Global Environment Facility, Issues and Options, January 24, 1992."

The GEF should provide concessional funding, addressing issues concerning the global environment in an effective and transparent way as soon as possible. The formula proposed by the United Kingdom at the February Meeting, the GEF should not substitute other financing instruments like eg. the International Development Association (IDA), might be of some help in defining the borderline between national and international issues. All project proposals should be evaluated as to the possibility to finance them under existing funding channels; only those which would not fit to be financed out of existing channels could be financed by GEF as long as their subject would be covered by legally binding instruments.

As already stated during the December meeting we have doubts whether any extension of coverage to additional areas would be possible given the limitations to available funding, but there might be a need to incorporate - as a 5th priority - the problems of land degradation/desertification.

2. Austria especially supports the proposals of Option II in the First Draft: World Bank, UNDP and UNEP (including STAP) - each of them concentrating on the areas where they have their particular institutional expertise - should work together in organizing the transfer of financial resources.
3. Although we are not in a position to propose any remedy to such a situation we share the concern of Sweden that we could face a situation with insufficient funding on both the IDA mechanism as well as the GEF. Therefore, cost effectiveness as stated in Principle III of the "First Draft" is of utmost importance. It is in this context that we would like to see the STAP and similar bodies in the context of legally binding instruments should be in a position to give advice on actions which would alleviate environmental problems including actions to be taken by industrial countries.

- 2 -

4. As a result of ongoing discussions - which are in our view of high urgency - the GEF might be constituted as an "umbrella" for a number of specialized funds ("windows") to finance projects linked to legally binding instruments. But - provided that a workable administrative framework can be found - a single fund solution can be accepted, too. The composition of the portfolio of such a financing instrument has to reflect the areas of emphasis laid out in existing and future legally binding instruments. It has not to be necessarily an earmarking of funds but we cannot expect states to contribute to a single fund without having any control about the use of these funds especially if there would be different parties to different legally binding instruments.
5. The parties to a particular convention would be deciding about the broad policies to guide the Participants Assembly (PA) through implementation. The PA should not micro manage the facility but should be in charge of deciding about the policy guidelines as well as receiving reports on the progress and impact of projects under implementation. STAP and similar institutions out of legally binding instruments should cooperate as closely as possible with the lowest administrative costs possible.
6. To become member to the PA a minimum contribution to the core fund has to be required. If the number of participants is growing even constituencies could be envisaged although the creation of such constituencies would raise difficult questions about administrative problems; details have to be explored further.

As regards the chairmanship of the PA we could accept the present arrangement that the Director of the Environment Department of the World Bank is the chairman of the GEF. If the PA should be chaired by one of the participants on a rotating basis one has to look very carefully into the necessary administrative arrangements in order to assure a transparent decision making process and a smooth transition from one chairman to the next one.

7. In most cases decisions will be made on a consensus basis. If this is not possible, Austria prefers weighted votes depending on membership and financial contribution to the GEF. Decisions relating directly to the use of funds under one particular legally binding instrument should be made by those Participants who are member to this legally binding instrument.

cc: IJ

Federal Ministry of Finance
GZ. IF-295/3-III/15 a/93

Himmelfortgasse 4 - 8
A-1015 Wien

OR Mag. Harald Sitta
Tel. 51433/2282
Fax. 513 08 16

TELEFAX
(Fax.Nr. 001 202 477 0565)

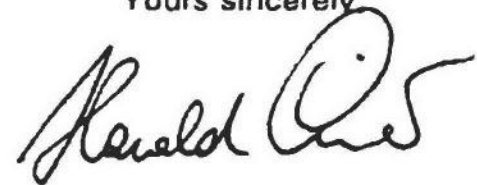
1 page (s)
Vienna, April 22, 1993

Global Environment Facility
Mr. Mohamed T. El-Ashry
Chairman

Dear Mr. EL-Ashry,

In response to your fax dated April 21, 1993, I regret that I am not able to participate in the informal discussions in Paris on April 28, 1993.

Yours sincerely



GLOBAL ENVIRONMENT FACILITY
Fourth Participants' Meeting
December 3 - 5, 1992
Abidjan, Côte d'Ivoire

Austria

REGISTRATION FORM
(Please type or print clearly)

Please file in appropriate country files

Name(s):

1. MR HARALD SITTA

Title DEPUTY DIRECTOR

2. _____

Title _____

3. _____

Title _____

4. _____

Title _____

5. _____

Title _____

(Name of organization, institution or other entity to which you are affiliated or a contact person)

Organization: MINISTRY OF FINANCE

Address: HIMMELPFORTGASSE 4-8
A-1010 VIENNA, AUSTRIA

Telephone: 51433/2282 Fax: 51433/2155

Will you also be attending the NGO session December 1-2? yes no
Will you be attending the reception on December 2? yes no

Please fax before November 15, 1992, to:

Marie Morgan-Wels
Global Environment Facility
The World Bank
1818 H Street N.W.
Washington, DC 20036

Telephone: (202) 473-1128
Telefax: (202) 477-0551

THE WORLD BANK
GLOBAL ENVIRONMENT FACILITY
Washington, D.C. 20433 U.S.A.

Tel. No. (202) 473-1053 // Fax Tel. No. (202) 477-0551 // Telex No. RCA 248423
FACSIMILE COVER SHEET AND MESSAGE

DATE: 10 January, 1992

NO. OF PAGES: 2
(including this sheet)

MESSAGE NUMBER: \

818/1

TO
Name: Harald Sitta
Organization: International Finance Institutions

Fax Tel. No. 43-1-514-433/2155
City: Vienna
Country: Austria

FROM
Name: Ian Johnson
Dept./Div. ENVGE
Room No. S5-043

Fax Tel. No. 202 - 477-0551
Dept/Div No. 655/35
Tel. No. 202 - 473-1053

SUBJECT: GEF Governance

MESSAGE:
See attached

Transmission authorized by: Ian Johnson

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GLOBAL
ENVIRONMENT
FACILITY

PARTNERS IN GLOBAL SOLUTIONS

818/2

10 January, 1992

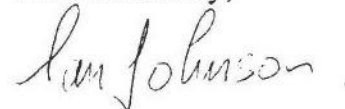
Dear Participant,

Further to our fax of 18 December, 1991, I would like to advise you that the special session devoted to GEF governance will be held at the ILO headquarters, Geneva, Switzerland, on February 14, 1992, instead of February 7 as previously suggested. This date has been proposed by a number of participants in order to have time to review and send comments on the paper before the meeting.

This meeting will address issues related to the governance and future evolution of the Facility. A draft paper outlining possible future evolution of the Facility - which was requested at the December meeting - will be faxed to participants at least two weeks before the February meeting. Your comments faxed within five working days would permit a revision of the draft which would then allow us to have a more focused meeting.

Details on administrative arrangements will be sent to you in due course.

Yours sincerely,



Ian Johnson

cc: ~~IS~~ ~~PTC~~

A L L - I N - 1 N O T E

DATE: 08-Jan-1992 10:07am

TO: Rebecca Russ (REBECCA RUSS)

FROM: Kenneth Piddington, PADSS (KENNETH PIDDINGTON)

EXT.: 32762

SUBJECT: Geneva request for GEF speaker

Becky -- I should have copied this message to you at the time, but you probably saw it anyway. I now have the name of the diplomat -- he is Hugo Schally, Counsellor at the Austrian Mission in Geneva, and his 'phone number is 22 733 7750. If Mohamed and Ian have made up their minds about who is to do it, I can give him a ring if you like.

IS ||

Could you also ask Mohamed when he might have a lunchtime free for us to talk. Next week is not good for me apart from Monday (I have started eating lunches, would you believe!) but the rest of the month is OK.

Cheers!

Ken



B

O.K.

M.

A L L - I N - 1 N O T E

DATE: 19-Dec-1991 12:16pm EST

TO: See Distribution Below

FROM: Kenneth Piddington, PADSS (KENNETH PIDDINGTON)

EXT.: 32762

SUBJECT: Address on GEF

During the Climate Change meeting, I was approached by one of the Geneva-based representatives (whose card I have for the moment mislaid) who told me about a group they have of "environmental diplomats". He asked me whether someone from the Bank could address them at their next monthly lunch in January on the topic of the GEF.

I said that since there was a probability that the GEF Participants would be meeting in Geneva in early February, the best idea would be if they could organize their lunch either just before or just after that meeting, when it would fit in for one of my colleagues dealing with the Facility. Now that you have a firm date, it looks as if this should be arranged for February 6.

Although this is not a high-level group, I heard of its existence from several people involved in the negotiations and I would rate it as an influential audience worth showing the video to plus a standard presentation, but with some emphasis on the political criticisms levelled at the GEF as it exists at present.

I can now proceed to a) track down the individual, and b) get the February 6 date firmed up. If you want me to say who will do the presentation for them, it might help for me to convey that information also.

If, on the other hand, you do not wish to proceed or if the timetable is lousy, I need to know that also.

Cheers

Ken.

DISTRIBUTION:

TO: Mohamed T. El-Ashry (MOHAMED T. EL-ASHRY)
TO: Ian Johnson (IAN JOHNSON)
TO: Nicholas Van Praag (NICHOLAS VAN PRAAG)

Mr. Moeen A. Qureshi
Senior Vice President, Operations
World Bank
1818 H Street, N.W.
Washington, D.C. 20433

Dear Mr. Qureshi,

1. On October 6, 1987, I signed an agreement with the International Bank for Reconstruction and Development and the International Development Association (collectively, the Bank), to establish an Austrian Consultant Trust Fund to extend Austrian cooperation with the Bank. Due to the new developments in Eastern and Central Europe and the increased activities of the Bank in this region, I intend to further extend Austrian cooperation with the Bank, by entering into an agreement to establish a second Austrian Consultant Trust Fund to finance the fees and other reimbursable costs to be paid to Austrian consultants hired by the Bank for short-term operations assignments for development projects, programs and studies selected by the Bank in those Eastern and Central European countries listed in the schedule attached hereto.

2. I am pleased to inform you that Austria is prepared to contribute grant funds up to the amount of 5 million US-Dollars for a first five year period 1991-1995 for this purpose. Out of this amount, 1,000,000.00 US-Dollars will be made available during 1991. The initial 1991 deposit will be replenished annually based on the need of funds.

3. The recruitment of consultants will be the sole responsibility of the Bank and will be carried out in accordance with its standard procedures. The Bank will issue to consultants, recruited under this Agreement, its standard letter of appointment, including the conflict of interest clause. In its negotiations with Austrian consultants, the Bank will offer fees within the range of the fees paid by the Bank out of its own account. The Federal Ministry of Finance will assist the Bank in identifying qualified candidates for such consultancy assignments. The selection of short-term assignments to be financed under this agreement will be at the sole discretion of the Bank. The selection of long-term assignments (more than forty days) and studies to be financed under this agreement will be made in consultation with the Federal Minister of Finance. All such proposals will be submitted in writing to the Federal Minister of Finance for his

approval. The Federal Minister of Finance will endeavor to inform the Bank of his decision within 14 days of receipt thereof.

4. The funds for the financing of the activities described in the present Agreement will be deposited by the Federal Ministry of Finance in "Account-T" maintained in the Federal Reserve Bank of New York, in the name of the International Development Association (the Account). The funds will be deposited in annual instalments based on the Bank's need for this purpose. Such Funds will be kept separate and apart from the funds of the Bank and may be commingled with other trust fund assets maintained in this Account. The initial deposit will be made promptly following your confirmation of this agreement. The Bank will be entitled to draw on the Account for the financing of the expenditures eligible under the present Agreement. Interest earned on the Account will be added to the Account and used for the same purpose.

5. The Bank will maintain separate records and accounts of the funds in the Account and the funds disbursed pursuant to the provisions hereof. During each year, the Bank will inform the Federal Ministry of Finance of the use of the funds as they are drawn down. In addition, the Bank will provide annual financial statements and a request for the next annual replenishment. The Federal Minister of Finance may request that records and accounts be audited and certified annually by the Bank's external auditors. The cost of such audits may be paid from the Trust Fund.

6. The Officers responsible for the coordination of all matters relating to the content of the present Agreement will be the following:

For the Ministry: Department V/1
 Mr. Harald Sitta
 Federal Ministry of Finance
 Himmelpfortgasse 8
 1010 Wien
 Austria
 Telephone No: 51 433 2282
 Telex No: 111688 bmfin a
 Telefax No: 51 433 2155

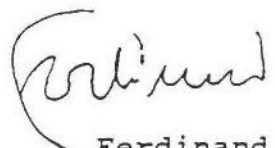

For the Bank: Cofinancing Advisor
 Official Cofinancing Group
 Cofinancing and Financial Advisory Services
 International Bank for Reconstruction and
 Development
 1818 H Street, N.W.
 Washington, D.C. 20433
 Telephone No: (202) 458-0640
 Telefax No: (202) 477-7019

7. This Agreement will enter into force on the day of its signature by both parties and will remain in force, unless

terminated by any of the parties upon three months prior written notice. If the Agreement is terminated (a) such termination will not affect any agreements entered into between the Bank and Austrian consultants, and pursuant to this Agreement the Bank will be entitled to continue withdrawals from the Account in respect of such agreements, as if this Agreement had not been so terminated; and (b) any balance in the account at the completion of such withdrawals will be returned to the Austrian Government and the Bank's function hereunder will be considered terminated.

8. If you agree with the foregoing, please sign as indicated below and return one copy to us.

Sincerely yours

 
Ferdinand Lacina
Federal Minister of Finance

Accepted for the International Bank for Reconstruction and Development
and
International Development Association



Moeen A. Qureshi
Senior Vice President, Operations

September 24, 1991

Schedule

Eastern and Central Europe as used in this Agreement includes for the time being the following countries:

Albania
Bulgaria
Czechoslovakia
Hungary
Poland
Romania
Yugoslavia