



## LIST OF MODULES IN THE UMBERTO-LIBRARY UMBERTO BUSINESS AND CONSULT VERSIONS

Updated: August 13, 2009

### VALUATION SYSTEMS

- CML Valuation System
- Eco-Indicators 95 (Europe)
- Eco-indicators 99 (Europe)
- Eco-indicators 99 (Europe) ETH
- UBP-Method 90 (CH)
- UBP-Method 97 (CH)
- UBP-Method 97 (CH), ETH
- Valuation according to UBA/ifeu

### PROCESSES

#### 1. Chemicals

##### 1.1 Inorganic chemicals

- ammonia (D)
- ammonia (east)
- ammonia (EU)
- ammonia (PlasticsEurope)
- chlorine
- hydrogen
- hydrogen (cracker)
- hydrogen (electrolytic)
- hydrogen (reformer)
- hydrogen chloride
- hydrogen cyanide
- hydrogen peroxide
- nitric acid (D)
- nitric acid (east)
- nitric acid (EU)
- nitrogen
- oxygen
- phosphoric acid (D)
- phosphoric acid (east)
- phosphoric acid (EU)
- sodium hydroxide
- sulphuric acid (D)
- benzene
- butadiene
- butene
- chloromethane
- dichloromethane
- ethyl benzene
- ethylene
- ethylene dichloride
- ethylene oxide
- formic acid
- MDI
- methane
- methyl methacrylate (MMA)
- methyl methacrylate (MMA) as sub-net
- n-olefins
- n-paraffins
- naphtha
- pentane
- phenol
- polyethylenglykole
- propylene
- propylene (pipeline)
- styrene
- terephthalic acid (TPA)
- tetrachloroethylene
- tetrachloromethane
- toluene
- toluylendiisocyanate (TDI)
- trichloroethylene
- trichloromethane
- trimethylolpropane
- vinyl chloride
- xylene

##### 1.2 Organic chemicals

- 2-ethylhexanol
- acetone
- acetone cyanohydrin
- acrylonitrile

#### 2 Energy generation

- blasting incl. prechain

##### 2.1 Cogeneration plants excluding prechain

- BHS fuel oil EL (0.1 MW)
- BHS fuel oil EL (1.0 MW)
- BHS natural gas (cat, 0.25 MW)
- BHS natural gas (cat, 0.5 MW)
- BHS natural gas (cat; 0.005 MW)
- BHS natural gas (cat; 0.05 MW)
- BHS natural gas (cat; 0.11 MW)
- BHS natural gas (lean; 0.005 MW)
- BHS natural gas (lean; 1.0 MW)
- CP brown coal (e-elb, CPR/FB, 50MW)
- CP brown coal (e-elb, EC, 100 MW)
- CP brown coal (Rh, CPR/FB 50 MW)
- CP brown coal (Rh, CPR/GC, 50 MW)
- CP brown coal (Rh, EC, 100 MW)
- CP brown coal (w-elb, CPR/FB, 50 MW)
- CP brown coal (w-elb, EC, 100 MW)
- CP hard coal (CPR/FBF, 50 MW)
- CP hard coal (CPR/GC, 50 MW)
- CP hard coal (EC, 100 MW)

**2.2 Cogeneration plants including prechain**

- CP brown coal
- CP diesel
- CP hard coal
- CP natural gas
- ECP natural gas

**2.3 Compressed air**

- compressor unit (2 - 12 bar)
- compressor unit (40 bar)

**2.4 Electricity**

- electricity - on-site (PlasticsEurope)
- electricity A
- electricity B
- electricity CH
- electricity D
- electricity E
- electricity Ex-Y
- electricity F
- electricity GR
- electricity I
- electricity Lux
- electricity NL
- electricity P
- electricity UCPT

**2.5 Engines**

- engine diesel (AUS, 1 MW)
- engine diesel (CAN, 1.0 MW)
- engine diesel (D, 1.0 MW)
- engine diesel (generic, 1.0 MW)
- engine diesel (USA, 1.0 MW)
- engine fuel oil h (CIS, 1 MW)
- engine fuel oil h (OPEC, 1 MW)
- power saw

**2.6 Heating**

- heat pump natural gas (ab, 0.01 MW)
- heat pump natural gas (mot, 0.02 MW)
- heating brown coal briquette (e-elb, 0.01 MW)
- heating brown coal briquette (Rh, 0.01 MW)
- heating brown coal briquette (w-elb, 0.01 MW)
- heating coke (0.01 MW)
- heating fuel oil (rock, 0.01 MW)

- heating fuel oil EL (0.01 MW)
- heating hard coal briquette (0.01 MW)
- heating natural gas (0.01 MW)
- heating natural gas (cal.v., 0.01 MW)
- heating natural gas (fan, 0.01 MW)
- heating propane (0.01 MW)
- heating wood (0.01 MW)
- heating wood chips (0.01 MW)
- oven brown coal briquette (e-elb, 0.01 MW)
- oven brown coal briquette (Rh, 0.01 MW)
- oven brown coal briquette (w-elb, 0.01 MW)
- oven coke (0.01 MW)
- oven fuel oil EL (0.01 MW)
- oven hard coal briquette (0.01 MW)
- stove natural gas
- therme natural gas (0.01 MW)

**2.7 Heating plants excluding prechain**

- district heating, brown coal (Rh, FBF, 100 MW)
- district heating, brown coal briq. (Rh, 10 MW)
- district heating, coke (5.0 MW)
- district heating, fuel oil EL (0.1 MW)
- district heating, fuel oil EL (1.0 MW)
- district heating, fuel oil EL (100 MW)
- district heating, fuel oil EL (25 MW)
- district heating, fuel oil EL (AUS)
- district heating, fuel oil EL (NOR)
- district heating, fuel oil h (AUS)
- district heating, fuel oil h (BRA)
- district heating, fuel oil h (CAN)
- district heating, fuel oil h (CIS)
- district heating, fuel oil h (D)
- district heating, fuel oil h (OPEC)
- district heating, fuel oil h (USA)
- district heating, hard coal (3rd world, 50 MW)
- district heating, hard coal (AUS, FBF, 50 MW)
- district heating, hard coal (D, FBF, 50 MW)
- district heating, hard coal (GUS, FBF, 50 MW)

- district heating, hard coal briquette (1.0 MW)
- district heating, natural gas (1.0 MW)
- district heating, natural gas (10MW)
- district heating, natural gas (3rd world, 10 MW)
- district heating, natural gas (ALG, 10 MW)
- district heating, natural gas (AUS, 10 MW)
- district heating, natural gas (CAN, 10 MW)
- district heating, natural gas (CIS, 10 MW)
- district heating, natural gas (D, 10 MW)
- district heating, natural gas (NL, 10 MW)
- district heating, natural gas (NOR, 10 MW)
- district heating, natural gas (USA, 10 MW)
- district heating, petroleum gas (100 MW)
- district heating, wood (10 MW)
- district heating, wood chips (5.0 MW)

**2.8 Heating plants including prechain**

- district heating, brown coal
- district heating, fuel oil EL
- district heating, fuel oil h
- district heating, hard coal
- district heating, natural gas

**2.9 Long distance heating**

- long distance heating

**2.10 Power stations excluding prechain**

- PS brown coal (D mix)
- PS brown coal (e-elb, ST, 800 MW)
- PS brown coal (Rh, ST, 600 MW)
- PS brown coal (w-elb, ST, 870 MW)
- PS fuel oil h (3rd World, 2 MW)
- PS fuel oil h (AUS, ST, 450 MW)
- PS fuel oil h (CAN, ST, 450 MW)
- PS fuel oil h (CIS, ST, 450 MW)
- PS fuel oil h (RSA, ST, 400 MW)
- PS fuel oil h (USA, ST, 450 MW)
- PS hard coal (AUS, ST, 500 MW)

- PS hard coal (CAN, ST, 500 MW)
- PS hard coal (CIS, ST, 500 MW)
- PS hard coal (D ballast,ST, 700 MW)
- PS hard coal (D coastal,ST, 500 MW)
- PS hard coal (D mix)
- PS hard coal (NL, ST, 700 MW)
- PS hard coal (NOR, ST, 700 MW)
- PS hard coal (PL, ST, 700 MW)
- PS hard coal (RSA, ST, 500 MW)
- PS hard coal (USA, ST, 500 MW)
- PS hard coal generic (ST, 500 MW)
- PS natural gas (ALG, G+S, 100 MW)
- PS natural gas (ALG, GT, 50 MW)
- PS natural gas (AUS, GT, 50 MW)
- PS natural gas (CAN, G+S, 100 MW)
- PS natural gas (CIS, GT, 20 MW)
- PS natural gas (CIS, ST, 300 MW)
- PS natural gas (D mix)
- PS natural gas (D, G+S, 450 MW)
- PS natural gas (D, GT, 150 MW)
- PS natural gas (D, ST, 450 MW)
- PS natural gas (NL, G+S, 100 MW)
- PS natural gas (NOR, GT, 100 MW)
- PS natural gas (USA, GT, 50 MW)
- PS fuel oil h I
- PS fuel oil h Lux
- PS fuel oil h NL
- PS fuel oil h P
- PS hard coal A
- PS hard coal B
- PS hard coal D (ballast)
- PS hard coal D (high grade)
- PS hard coal D mix
- PS hard coal E
- PS hard coal Ex-Y
- PS hard coal F
- PS hard coal I
- PS hard coal NL
- PS hard coal P
- PS hard coal UCPTTE
- PS natural gas A
- PS natural gas B
- PS natural gas D mix
- PS natural gas E
- PS natural gas Ex-Y
- PS natural gas F
- PS natural gas I
- PS natural gas Lux
- PS natural gas NL
- PS natural gas UCPTTE
- PS nuclear D

### 2.11 Power stations including prechain

- PS brown coal (e-elb)
- PS brown coal (Rh)
- PS brown coal (w-elb)
- PS brown coal A
- PS brown coal D mix
- PS brown coal E
- PS brown coal Ex-Y
- PS brown coal F
- PS brown coal GR
- PS brown coal PL
- PS brown coal UCPTTE
- PS fuel oil h A
- PS fuel oil h B
- PS fuel oil h CH
- PS fuel oil h D
- PS fuel oil h E
- PS fuel oil h Ex-Y
- PS fuel oil h F
- PS fuel oil h GR

### 2.12 Refrigeration plants

- refrigeration plant (120kW, -30/-25°C)
- refrigeration plant (400 kWth, 6/12°C)

### 2.13 Steam generator

- steam (fuel oil EL, D)
- steam (natural gas, D)
- steam - on-site (PlasticsEurope)

### 3 Energy/Fuel prechains

- biogas
- blast furnace gas
- coke
- coke-oven gas
- converter gas
- pyrolysis gasoline (PlasticsEurope)
- ref. rapeseed oil methyl ester

### 3.1 Brown coal

- brown coal (D-Mix)

- brown coal (e-elb)
- brown coal (Rh)
- brown coal (w-elb)

### 3.2 Brown coal processings

- brown coal briquette (e-elb)
- brown coal briquette (Rh)
- brown coal briquette (w-elb)
- brown coal dust (e-elb)
- brown coal dust (w-elb)
- fluidised bed brown coal (e-elb)
- fluidised bed brown coal (w-elb)

### 3.3 Crude oil & crude oil products

- crude oil (CIS)
- crude oil (D mix)
- crude oil (EU)
- crude oil (OPEC)
- crude oil (PlasticsEurope)
- diesel
- fuel oil, EL (HH)
- fuel oil, EL (PS/IN)
- fuel oil, h
- gasoline
- kerosene

### 3.4 Crude oil processings

- refinery diesel (AUS)
- refinery diesel (CAN)
- refinery diesel (D)
- refinery diesel (NOR)
- refinery diesel (USA)
- refinery fuel oil h (AUS)
- refinery fuel oil h (CAN)
- refinery fuel oil h (CIS)
- refinery fuel oil h (OPEC)
- refinery fuel oil h (USA)

### 3.5 Hard coal

- hard coal (AUS)
- hard coal (CIS)
- hard coal (D-mix)
- hard coal (D)
- hard coal (PL)
- hard coal (RSA)
- hard coal (USA)
- hard coal briquette production

### 3.6 Natural gas

- natural gas (CIS)

- natural gas (HH)
- natural gas (import mix D)
- natural gas (NL)
- natural gas (NOR)
- natural gas (PlasticsEurope)
- natural gas (PS/IN)

### 3.7 Natural gas processings

- natural gas conditioning (ALG)
- natural gas conditioning (AUS)
- natural gas conditioning (CAN)
- natural gas conditioning (CIS)
- natural gas conditioning (D)
- natural gas conditioning (NL)
- natural gas conditioning (USA)
- refinery liquefied gas

### 4 Fibres, textiles

- cotton yarn
- cotton-PES (50/50) blend
- PES-staple fibres
- raw cotton
- viscose fibres

### 5 Fine chemicals

#### 5.1 Fertilizers

- ammonium nitrate phosphate (D)
- ammonium nitrate phosphate (Eastern Europe)
- ammonium nitrate phosphate (EU)
- calcium ammonium nitrate (D)
- calcium ammonium nitrate (Eastern Europe)
- calcium ammonium nitrate (EU)
- lime fertilizer (D)
- mono-/diammonium phosphate (D)
- mono-/diammonium phosphate (East. Europe)
- mono-/diammonium phosphate (EU)
- nitrogen fertilizer (D)
- phosphorous fertilizer (D)
- potassium fertilizer (D)
- single superphosphate (D)
- single superphosphate (Eastern Europe)
- single superphosphate (EU)
- triple superphosphate (D)
- triple superphosphate (Eastern Europe)

- triple superphosphate (EU)
- urea (D)
- urea (Eastern Europe)
- urea (EU)
- urea ammonium nitrate solution (D)
- urea ammonium nitrate solution (Eastern Europe)
- urea ammonium nitrate solution (EU)

#### 5.2 Tensides

- fatty alcohol (11)ethoxylate (PO)
- fatty alcohol (3)ethoxylate (CNO)
- fatty alcohol (3)ethoxylate (PKO)
- fatty alcohol (3)ethoxylate, petr
- fatty alcohol (7)ethoxylate (CNO)
- fatty alcohol (7)ethoxylate (PKO)
- fatty alcohol (7)ethoxylate, petr
- fatty alcohol (CNO)
- fatty alcohol (PKO)
- fatty alcohol (PO)
- fatty alcohol sulphates (CNO)
- fatty alcohol sulphates (PKO)
- fatty alcohol sulphates (PO)
- fatty alcohol sulphates, petr.
- fatty alcoholethoxysulphates (CO)
- fatty alcoholethoxysulphates, pet
- fatty alcoholethoxysulphates(PKO)
- fatty alcohols, petrochem.
- fatty alkyl benzenesulphonates
- fatty alkyl sulphonates, sec.
- fatty. alkyl polyglucosides (CNO)
- fatty. alkyl polyglucosides (PKO)
- soaps (CNO/BT)
- soaps (CNO/PO)
- soaps (PKO/BT)
- soaps (PKO/PO)

### 6 Metals

#### 6.1 Fe-metals

##### 6.1.1 Crude Steel

- converter steel (ETH)
- crude iron
- crude steel, BOF
- crude steel, EAF
- electric steel (ETH)
- iron (ETH)
- sinter

#### 6.1.2 Ores

- iron ore
- lump ore
- ore fine
- pellets

#### 6.1.3 Semimanufactured good

- flat, organic coated (IISI)
  - hot rolled coil
  - hot rolled coil (IISI)
  - hot rolled strip, pick (IISI)
  - plate, BOF steel (IISI)
  - section, BOF steel (IISI)
  - section, EAF steel (IISI)
  - slabs (BOF)
  - slabs (mix)
  - steel rod, BOF steel (IISI)
  - steel rod, coarse
  - steel rod, EAF steel (IISI)
  - steel rod, light
  - steel rod, medium
  - steel, tin-free (IISI)
  - thin sheet metal
  - thin sheet metal (IISI)
  - thin sheet metal (Ph)
  - thin sheet, chromium-plated
  - thin sheet, el. galvan (IISI)
  - thin sheet, el. galvan. (Ph)
  - thin sheet, finished (IISI)
  - thin sheet, galvan. (ETH)
  - thin sheet, h-d galv. (IISI)
  - thin sheet, h-d galvan.
  - thin sheet, h-d galvan. (Ph)
  - tin bucket 10 L
  - tin can 0,5 L
  - tin can 1 L
  - tinplate
  - tinplate (ETH)
  - tinplate (IISI)
  - tubes, galvanized
- #### 6.1.4 Steel production processes
- basic oxygen furnace (BOF)
  - blast furnace
  - chromium-plating
  - cold rolling mill
  - continuous casting

- cooking plant
- electric arc furnace (EAF)
- electrolytic tinning
- hot rolling mill
- hot-dip galvanizing
- induction welding, tubes
- sintering plant
- steel production as subnet

## 6.2 Ne-metals

- chromium
- copper
- lead
- manganese
- nickel
- pure copper, primary
- pure copper, secondary
- tin
- zinc

### 6.2.1 Aluminium

- aluminium
- aluminium foil (20 $\mu$ -200 $\mu$ )
- aluminium foil (5 $\mu$ -20 $\mu$ )
- aluminium ingot, primary
- aluminium round
- aluminium tray
- aluminium tube
- secondary aluminium smelting

### 6.2.2 PGM

- PGM (CAN FB) as subnet
- PGM (CAN INCO) as subnet
- PGM (RSA) as subnet
- PGM (Russia) as subnet
- PGM (USA) as subnet

## 7 Minerals/Glass

- bentonite
- burned lime
- container glass, brown
- container glass, green
- container glass, white
- limestone
- mixed glass (56% refuse glass)
- mixed glass (75% refuse glass)
- sodium chloride brine

## 8 Natural material

- beef tallow

- coconut oil
- palm kernel oil
- palm oil

## 9 Paper/Cardboard

### 9.1 Cardboard

- board, gravure printing
- board, offset printing
- board, virgin fibre
- chromo board
- duplex/triplex board
- greyboard
- liquid packaging board, 1 L

### 9.2 Corrugated board

- CB packaging (K(brown),C,T)
- CB packaging (K(white),C,T)
- CB packaging (recycl.: S,C)
- CB packaging (recycl.: T,C)
- CB packaging (virgin fibre)
- CB packaging as subnet
- CB packaging, double wall
- corrugated board processing
- corrugated board production

### 9.2.1 Body papers

- corrugating medium
- fluting
- kraft liner, brown (A)
- kraft liner, brown (S)
- kraft liner, white top (S)
- schrenz
- test liner

### 9.3 Paper

- copying paper (sec. fibre)
- copying paper (virgin fibre)
- formatn paper (A4/A3)
- newsprint paper
- paper (kraft, bleached, coat.)
- paper (natural, bleached)
- paper (natural, unbleached)
- paper bag

## 10 Plastics

- ABS copolymer
- epoxy resin, liquid
- nylon 6
- nylon 6 with glass fibre
- nylon 66

- nylon 66 + 30% glass fibre
- PET, amorphous
- PET, bottle grade
- PMMA, beads
- PMMA, sheets
- polybutadiene
- polycarbonate
- polyethylene (HDPE)
- polyethylene (LDPE)
- polyethylene (LLDPE)
- polyol
- polyol as subnet
- polypropylene
- polystyrene (EPS)
- polystyrene (GPPS)
- polystyrene (HIPS)
- polyurethane foam, flexible
- polyurethane foam, rigid
- polyvinylidene chloride
- PVC (bulk process)
- PVC (emulsion)
- PVC (suspension)
- SAN copolymer

## 10.1 Plastic, semimanufactured good

- bottle (HDPE)
- bottle (LDPE)
- bottle (PET, PlasticsEurope)
- bottle (PET), w/o sleeve
- bottle (PET), with sleeve
- film (PE)
- film (PET)
- film (PET), packed
- film (PP)
- film (PVC)
- moulding (PP)
- moulding (PS)
- moulding (PS), deep drawing
- moulding (PS), foaming
- moulding (PVC)
- PET-preform
- pipes (PE)
- pipes (PVC)
- pouch (PET/Al/OPA/PP)
- pouch (PET/PE)

- PVC-film (calender)
- tube (PE/Alu)

## 11 Transport

### 11.1 Aircraft

- aircraft excl. prechain
- aircraft incl. prechain

### 11.2 Machines

- construction machinery
- farm tractor incl. prechain
- harvester incl. prechain

### 11.3 Motor vehicles

- car diesel excl. prechain
- car diesel incl. prechain
- car gasoline excl. prechain
- car gasoline incl. prechain
- garbage truck incl. prechain as subnet
- lorry outwd. excl. prechain
- lorry outwd. incl. prechain
- lorry outwd./home incl. prechain
- lorry outwd/home excl. prechain
- van diesel excl. prechain
- van diesel incl. prechain
- van gasoline incl. prechain
- van Otto incl. prechain

### 11.4 Passenger transport

- aircraft passenger transport
- DB passenger transport
- passenger transport (bus)
- passenger transport (car)

- urban rail-bound transport

### 11.5 Rail

- rail incl. prechain
- rail excl. prechain

### 11.6 Vessels

- inland vessel excl. prechain
- sea ship excl. prechain

## 12 Waste treatment

### 12.1 Land fill

- landfill domestic waste, modern as subnet
- slag landfill as subnet

### 12.2 Organic Waste

- dry digestion and subsequent decomposition
- organic waste composting plant
- organic waste composting plant, high-tech
- organic waste composting plant, low-tech
- wet digestion and subsequent decomposition

### 12.3 Sewage treatment plants

- sewage treatment, adv. (excl. prechain)
- sewage treatment, adv. (incl. prechain)
- sewage treatment, bio (excl. prechain)
- sewage treatment, bio (incl. prechain)
- sewage treatment, mech. (excl. prechain)

### 12.4 Waste incineration

- waste incin. (newspaper)
- waste incin. (pack. cardboard)
- waste incin. (packing paper)
- waste incin. (PE/PP), high wc
- waste incin. (PE/PP), low wc
- waste incin. (PET)
- waste incin. (PS)
- waste incin. (PVC)
- waste incin., average standard
- waste incin., high standard

### 12.5 Waste processing

- aluminium scrap preparation
- sorting and processing, LP
- sorting plant
- sorting plant, LP

## 13 Wood and woodpulp

### 13.1 Pulp

- sulfate pulp, bleached
- sulfate pulp, ECF (Scand.)
- sulfate pulp, unbleached
- sulfite pulp, bleached
- sulfite pulp, TCF
- sulfite pulp, unbleached

### 13.2 Wood

- wood (beech/poplar)
- wood (pine)
- wood (spruce, fir)
- wood (spruce)

## TECHNICAL LEGEND

|        |                                  |     |                                 |
|--------|----------------------------------|-----|---------------------------------|
| ab     | absorption heat pump             | CPR | counter pressure                |
| ABS    | acrylonitrile-butadiene-styrene  | EAF | electric arc furnace            |
| adv    | advanced                         | EC  | extraction-condensation         |
| bio    | biological                       | ECF | elementar chlorine free         |
| BHS    | block-type thermal power station | ECP | cogeneration plant incl. engine |
| BOF    | basic oxygen furnace             | EL  | light (fuel)                    |
| BT     | beef tallow                      | EPS | expandable polystyrene          |
| C      | corrugating material             | fan | fan burner                      |
| cal.v. | blower-calorific value boiler    | FB  | fluidised bed                   |
| cat    | 3-way catalytic converter        | FBF | fluidised bed firing            |
| CNO    | coconut oil                      | G+S | gas-and-steam turbine           |
| CO     | coconut oil alcohol              | GC  | grate combustion                |
| CP     | cogeneration plant               | GD  | gas desulphurisation            |

|       |                                 |      |                            |
|-------|---------------------------------|------|----------------------------|
| GPPS  | general purpose polystyrene     | PET  | polyethylene terephthalate |
| GT    | gas turbine                     | PGM  | platinum group metals      |
| h     | heavy (fuel)                    | PKO  | palm kernel oil            |
| HDPE  | high density polyethylene       | PMMA | polymethylmethacrylat      |
| HH    | household                       | PO   | palm oil                   |
| HIPS  | high impact polystyrene         | PP   | polypropylene              |
| IN    | industrial plant                | PS   | polystyrene                |
| K     | kraftliner                      | PS   | power station              |
| KWth  | kWatt, thermal                  | PVC  | polyvinyl chloride         |
| LDPE  | low density polyethylene        | rock | rocket burner              |
| lean  | lean mix                        | S    | schrenz                    |
| LLDPE | linear low density polyethylene | ST   | steam turbine              |
| LP    | light packaging                 | T    | testliner                  |
| mech  | mechanical                      | TCF  | total chlorine free        |
| MDI   | diphenyl methane diisocyanate   | wc   | water content              |
| mot   | engine driven                   | W    | Wirbelschicht              |
| OPA   | oriented polyamide              | Ws   | Wellenstoff                |
| PE    | polyethylene                    | WSF  | Wirbelschichtfeuerung      |

#### COUNTRY CODES AND AREAS

|       |                |        |              |
|-------|----------------|--------|--------------|
| A     | Austria        | F      | France       |
| ALG   | Algeria        | GR     | Greece       |
| AUS   | Australia      | I      | Italy        |
| B     | Belgium        | Lux    | Luxembourg   |
| BRA   | Brasilia       | NL     | Netherlands  |
| CAN   | Canada         | NOR    | Norway       |
| CH    | Switzerland    | P      | Portugal     |
| CIS   | CIS            | PL     | Poland       |
| D     | Germany        | Rh     | Rhine        |
| E     | Spain          | RSA    | South Africa |
| e-elb | East Elbe      | Scand. | Scandinavia  |
| EAST  | Eastern Europe | USA    | USA          |
| EU    | European Union | w-elb  | West Elbe    |
| Ex-Y  | Ex-Yugoslavia  |        |              |

#### ORGANIZATIONS AND MANUFACTURERS

|      |  |       |   |
|------|--|-------|---|
| ETH  | Eidgenössische Technische Hochschule,<br>Zürich, Schweiz   | INCO  | INCO, Canadian manufacturer   |
| FaBr | Falconbridge, Canadian manufacturer                        | OPEC  | Organisation of Petroleum Exporting<br>Countries                                  |
| ifeu | Institut für Energie- und Umweltfor-<br>schung, Heidelberg | UBA   | Umweltbundesamt, Germany  |
| IISI | International Iron and Steel Institute                     | UCPTE | Union pour la coordination de la produc-<br>tion et du transport de l'électricité |