

GREEN PHILIPPINES

Greening the Philippine Industries with the **ECO**PROFIT Approach



A project funded by
The European Union's Asia-Pro Eco Programme

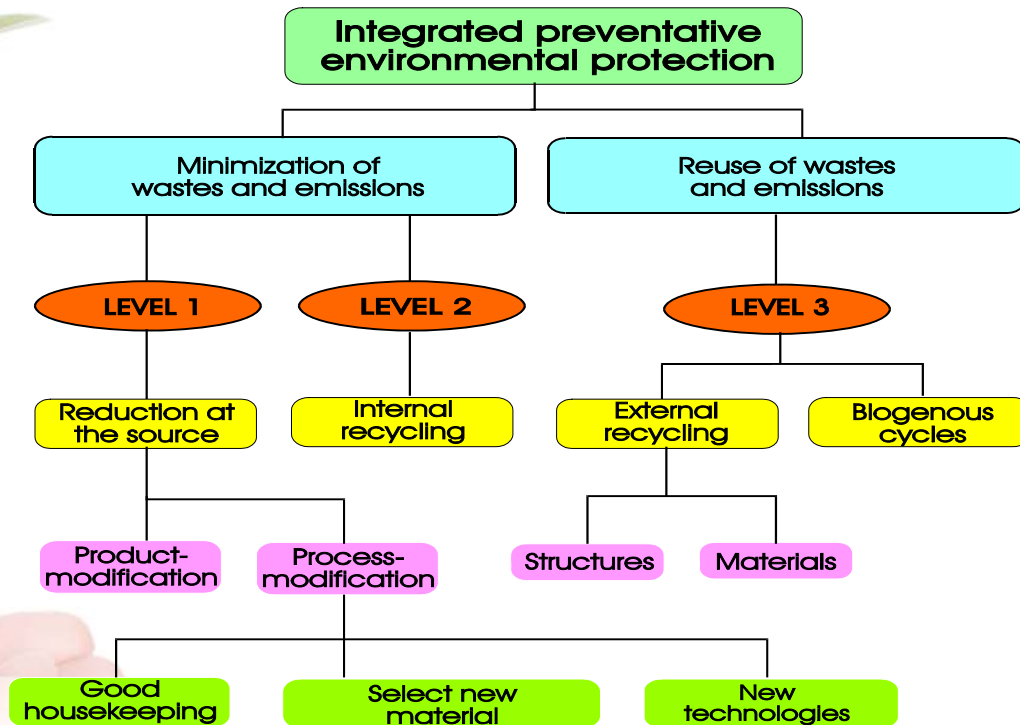
Cleaner Production (CP) OPTIONS

STENUM Ltd.



www.stenum.com

Strategies for Waste Minimization



Level 1:
GOOD HOUSEKEEPING

ECOPROFIT-company: Eloxal Heuberger

Electroplating (Aluminium), 20 employees, ISO 14.000

- Use of spray rinses, longer drain time, daily control of chemicals, reduction of the water consumption of 46 % (14.000 m³)







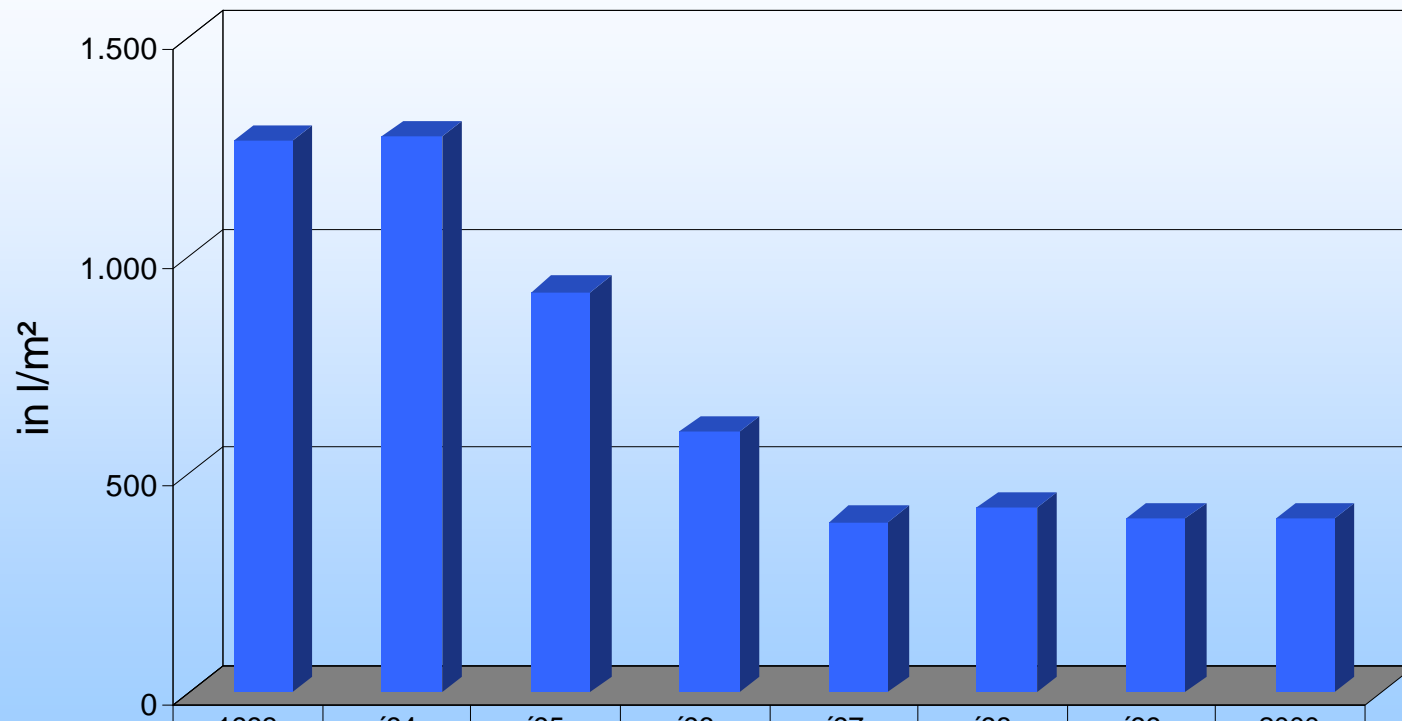
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eloxal Heuberger spez. Wasserverbrauch

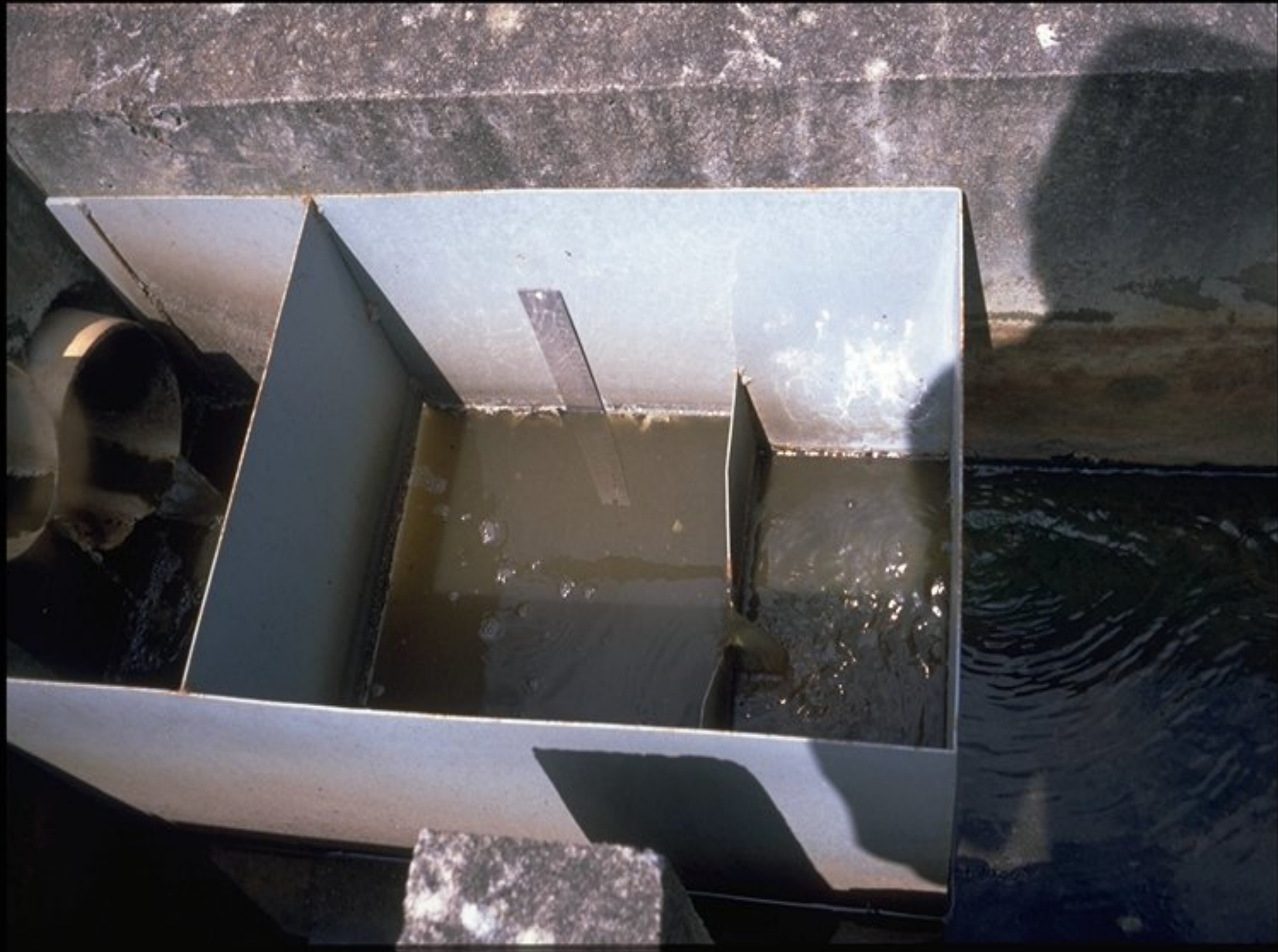


spez. Wasserv.	1.263	1.273	919	600	392	425	400	400
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Ecoprofit company: BERGLANDMILCH Graz/dairy



- **Cleaning of the pipeline system with water, improvement of the measurement technique**
- **Reduction of the milk losses by > 500 t/a (>200.000US\$)**



ASIS
Ecolab

Hand Sanitizer

Floor Cleaner

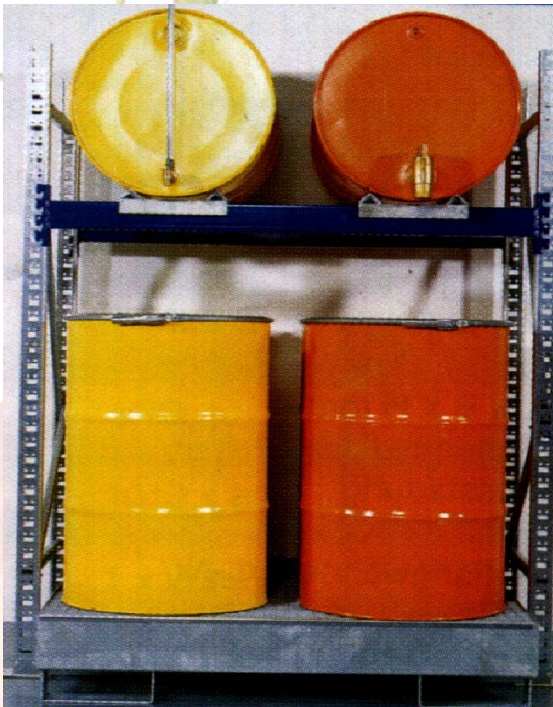
Bathroom Cleaner

Glass Cleaner

ECOLAB



Proper Storage of Chemicals



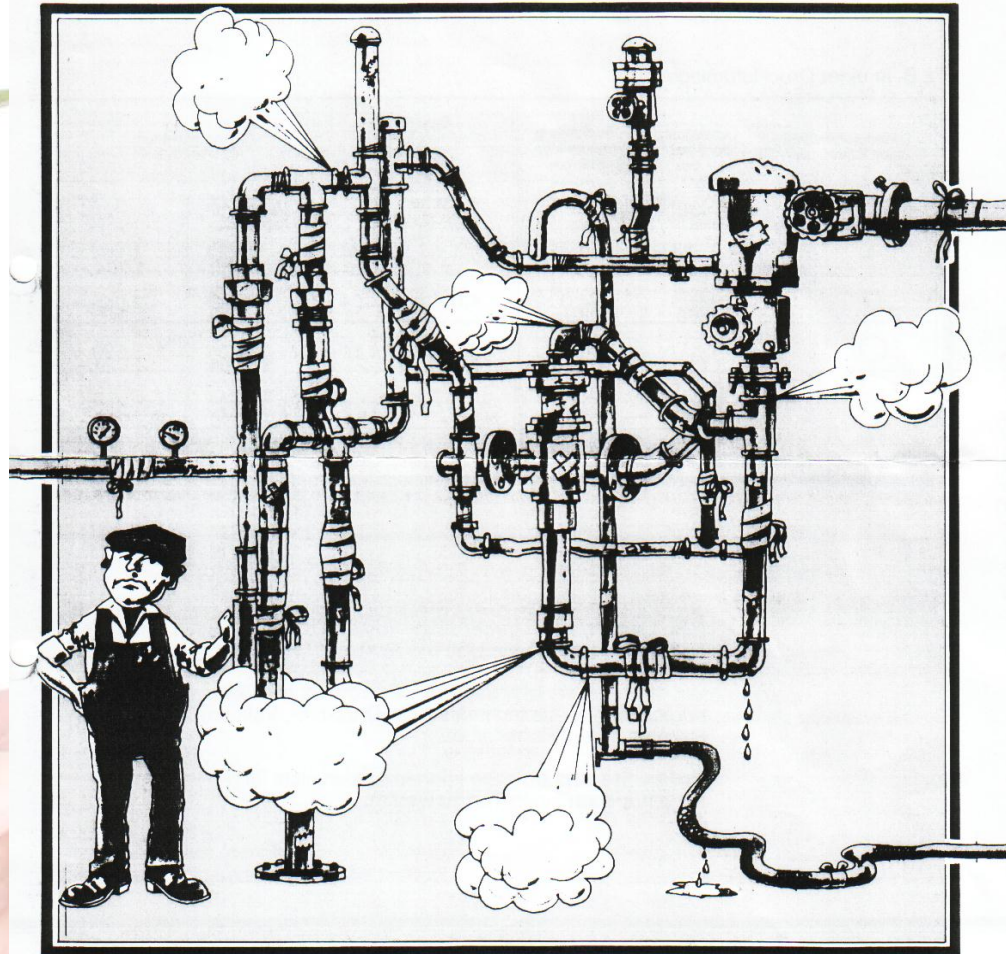
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Problem: Compressed Air



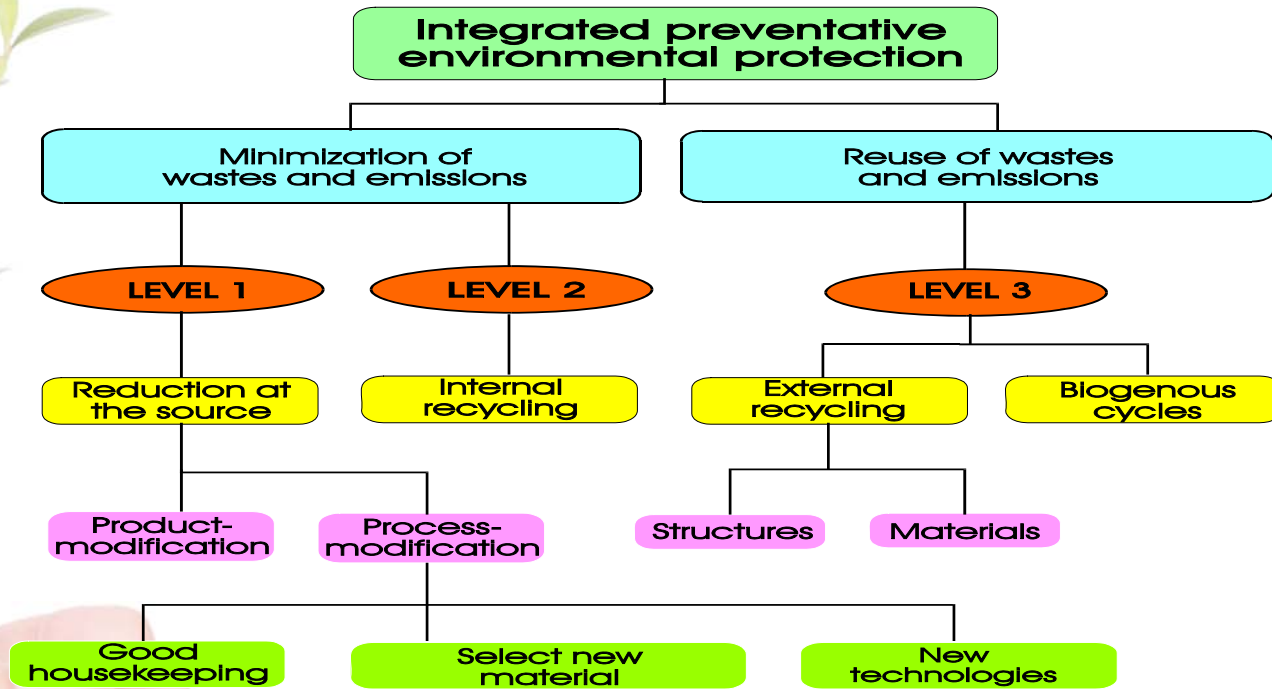
Air leak costs

(based on 100 PSIG, 8760 hours per year, 0.22 \$/m³)

Diameter of leak [feet]	Cubic feet per minute	Loss per year [US\$]
1/16"	6,5	744,0
1/8"	37,2	2.981,0
1/4"	103,0	11.904,0



Strategies for Waste Minimization



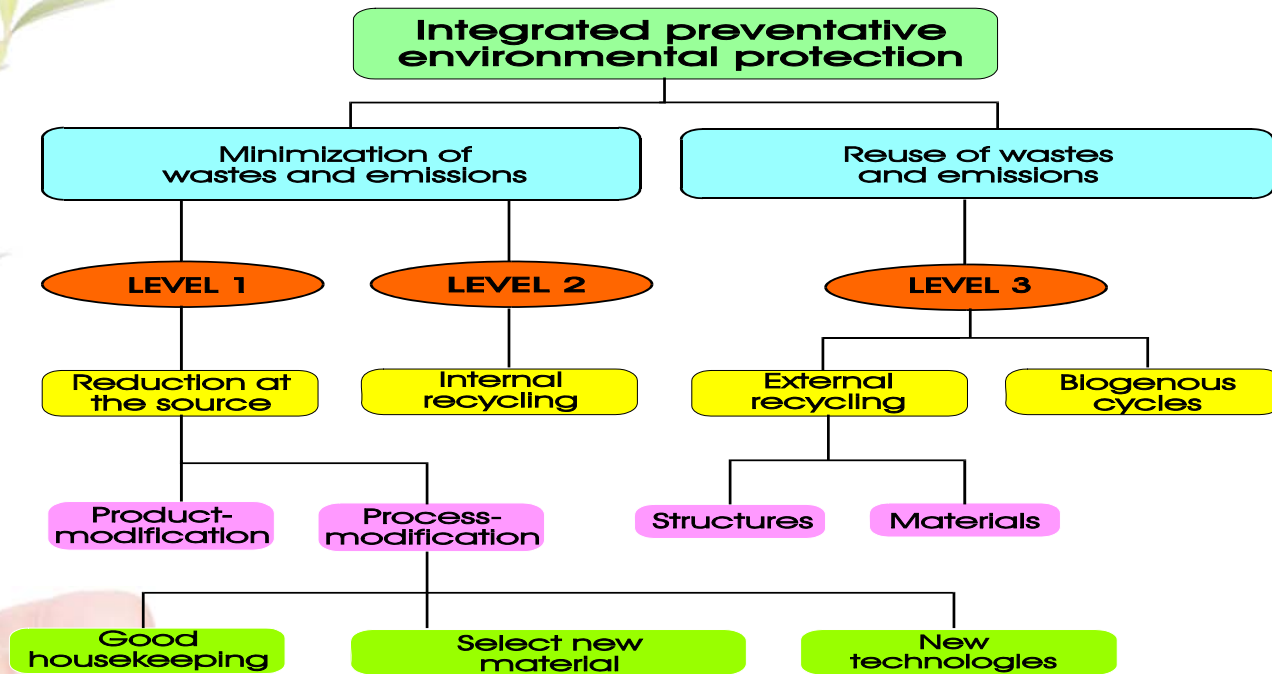
Level 1:
Change of Raw Materials







Strategies for Waste Minimization



Level 1:
Change in Technology

ECOPROFIT-company: Brau-Union Puntigam

Brewery, > 1 Million hl, ISO 14.000

- **Water, energy and chemical saving by many CP options:**
 - cold filtering/sterilization
 - new filling line
 - heat/power co-generation
 - vapor compression
 - ...



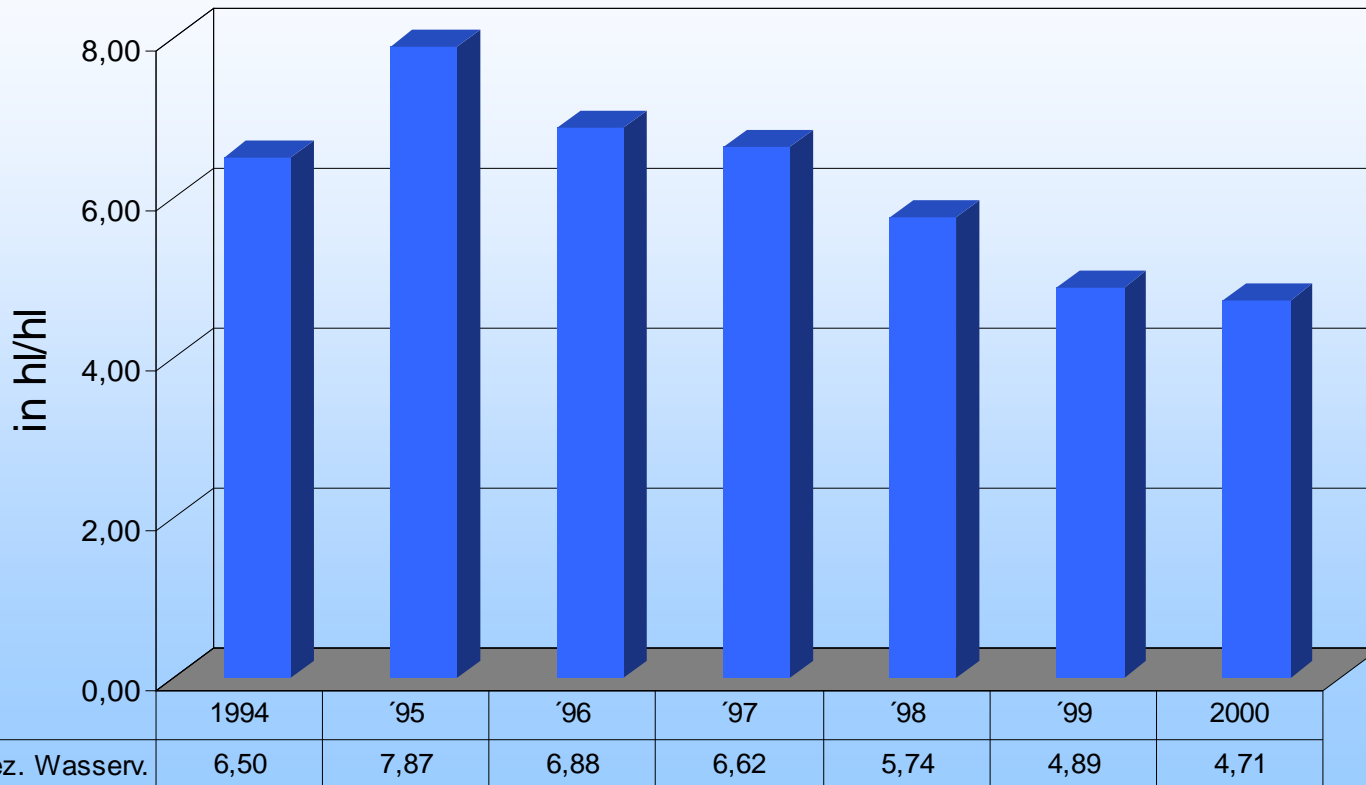
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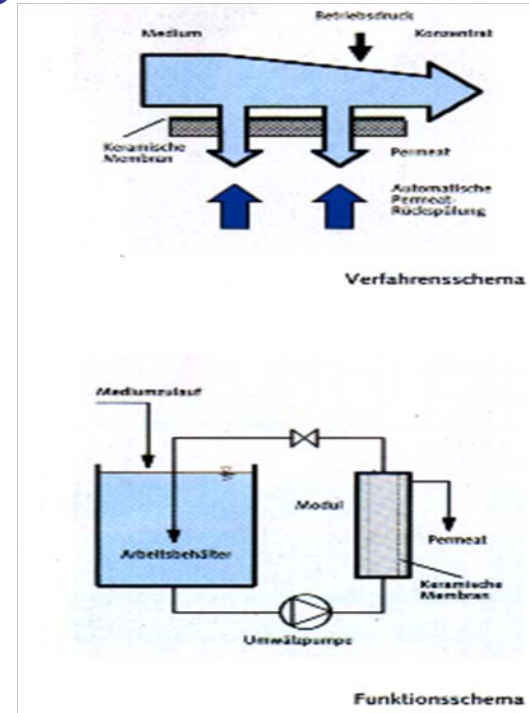


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Brauerei Puntigam spez. Wasserverbrauch

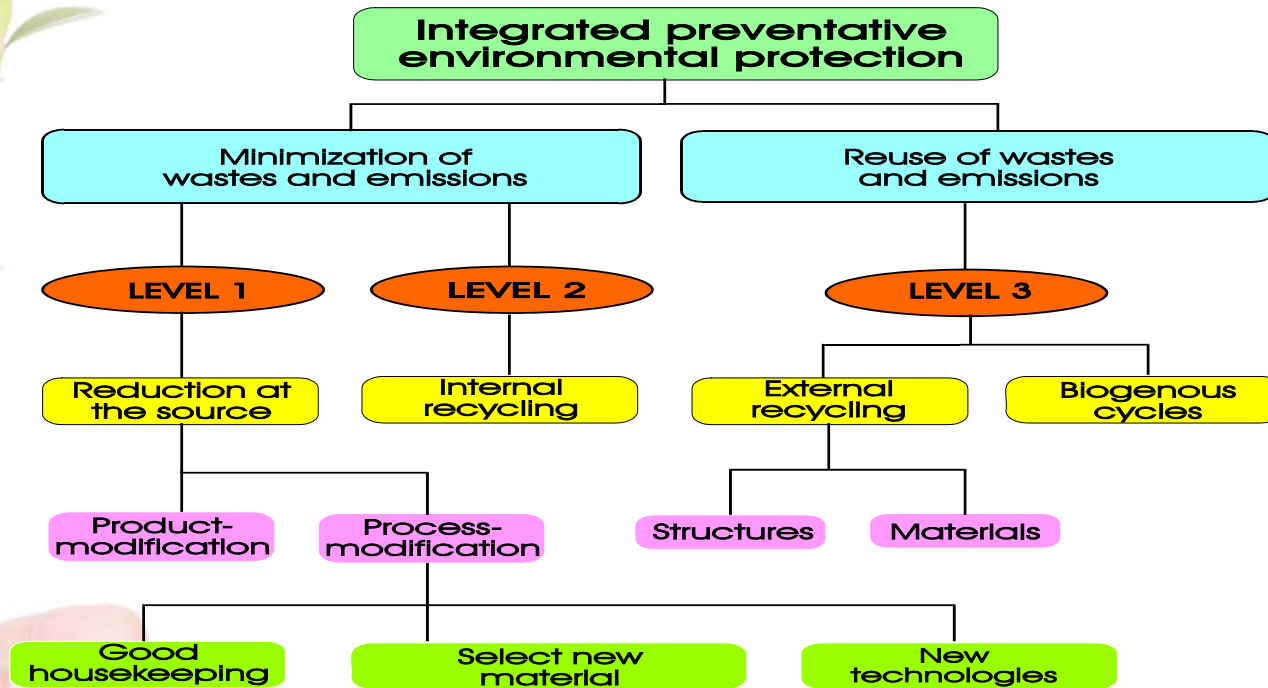


Konrad Wittwar GesmbH, Mercedes Benz Workshop



- Installation of a ultrafiltration unit, modified cleaning equipment saving of washing agent by 76 %, water by 80 %

Strategies for Waste Minimization



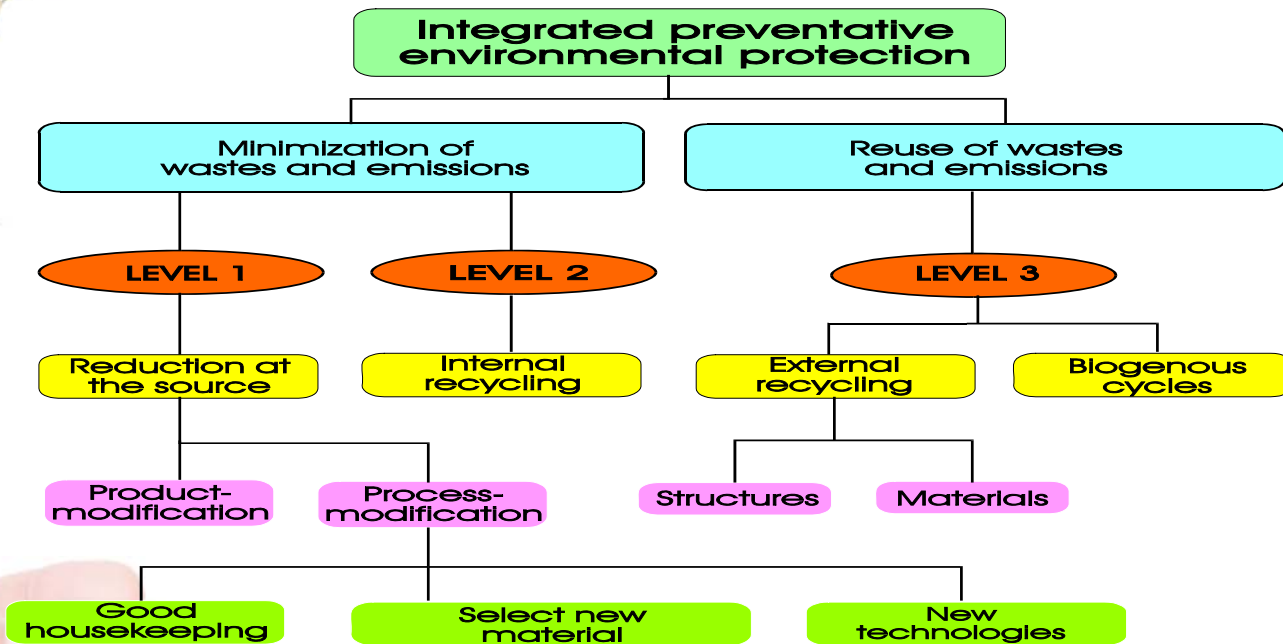
Level 2:
Internal Recycling







Strategies for Waste Minimization



Level 3:
External Recycling

METALLE

KUNSTSTOFF

ALTPAPIER

Material	Symbol	Disposal Instructions
Aluminium	[Icon]	...
Stahl	[Icon]	...
Kupfer	[Icon]	...
Edelmetalle	[Icon]	...
...

Verpackungsabfall
Anweisung





BREAKING EXAMPLE:

**1 % of the annual production of
beverages can be:**

fruit juice production 75 Mio. litres

3/4 Mio. litres (750.000 l) JUICE

30 trucks with 25.000 litres

3,75 Mio. *0,2 litre* bottles

corresponds to distance: 187,5 km

