



Rijkswaterstaat  
*Ministerie van Verkeer en Waterstaat*

# Emission control Water

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# Emission control-water

What is it?

How do we do that?

With whom do we do that?

# Emission control.... RWS's role?





diffuse

industry

shipping

communal

farming

**Emission control  
turning the taps off...**



# Emission control, what is that?

- **Emission: Sources of water pollution**
    - » **Industry**
    - » **Municipal**
    - » Farming
    - » Diffuse (incl. Shipping)
  - **Control: turning at the taps**
  - **Instruments: Permit, enforcements & emission levies**
- **Improved water quality  
(chemical en ecological)**



## How do we do that? - what do you need to know?

- **What are the sources of water pollution?**
  - What are the volumes, concentrations
  - Pathways to surface water
- **How bad is it (effect on surface water)?**
  - Quality standards for substances (NL, EU)
  - Ecological control
- **What can you do?**
  - Technical measures (prevention / purification)
  - Hard (legal) and soft instruments (consultations, covenants)
- **Are the rules being observed?**
  - Preventive and repressive enforcement
- **The polluter pays principle**

# Polluter pays I



## **In the field:**

- Company provides technical data on pollution
- RWS controls company data

## **Administrative:**

- Company provides information to the tax office
- Tax office imposes levy



Policy

Law/  
Rule

Permit

**Enforce-  
ment** Levy



**Yearly plan of visits:**

**based on risk appraisal by the region:**

Governmental/political	Economical
Environmental/Hygienic	Safety



Policy

Law/  
Rules

Permit

**Enforce-  
ment**

Levy



**Acting against breach:**

**Exceeding discharge limits = breach**

Sanction strategy

Legalize

Administrative sanction

Criminal sanction



# With whom do we cooperate?

## **RWS regional offices**

- Dept. in charge of permits and enforcements and the water district
- Legal departments
- Water quality/Water quantity departement
- National organs
- ILT (Inspectorate Environment and Transport)
- Public prosecution office (OM)
- Taxoffice (in dutch BVR)
- Administrative partners (city councils, provinces, waterboards, environmental agencies , etc.)
- Users (industries, environmental organisations, etc.)



# Technical requirements discharges on large surfacewater

- Emission approach(**B**est **A**vailable **T**echnology)
- Substance selective approach
  - (COD, nutriënts, heavy metals, organic pollutants)
- Emission – immission: check '*water quality goals*'
- Permit system



## Practice

1. Shipyards

2. Chemical plant (2 examples)

3. Polluter pay principle (levy)



# Shipyard ON





# Shipyard ZL



## Shipyard



## Oil catcher/settler



**Emission limits in permits**  
**Mineral oil: 20 mg/l**  
**Suspended solids: 50 mg/l**



# Example Chemical Industry



## 2 Chemical Industry

### Background:

# Halogenated organic contaminants in a polymer (1,3-dichloropropanol-2)

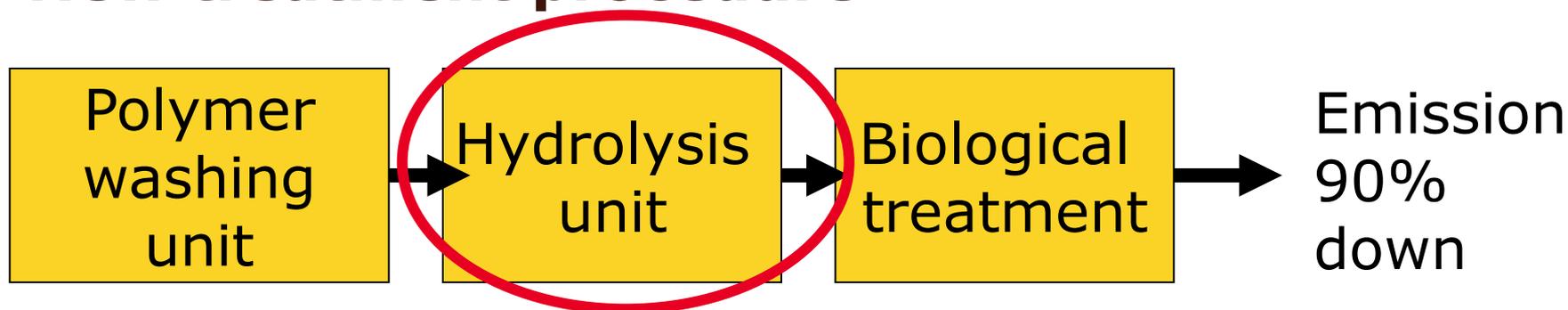




## Proposed treatment procedure



## New treatment procedure

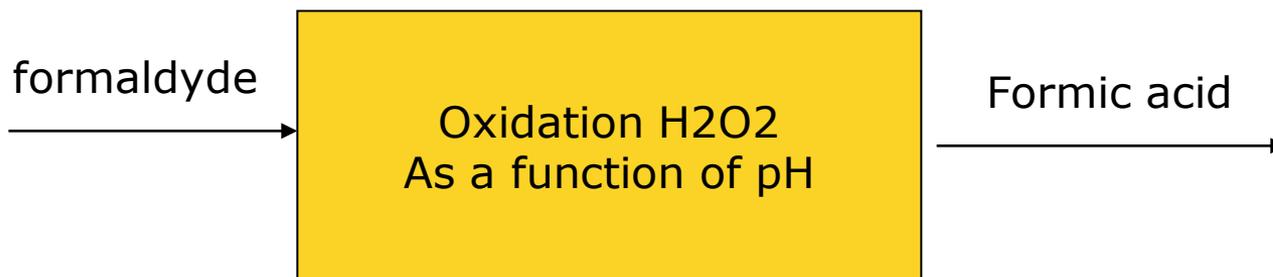


**Prescribed in permit**



### 3 Chemical Industry

- Doubling capacity chemical plant producing dimethylether
- Strong increase of the toxic side product formaldehyde
- Treatment in municipal waste water treatment plant not possible





# Levy system



## **Levy – pollution equivalents (NL) mainly based on oxygen consumption**

$$\text{kg O}_2 / 24 \text{ hr} = Q * (\text{COD} + 4,57 \text{ N-Kj}) / 1000$$

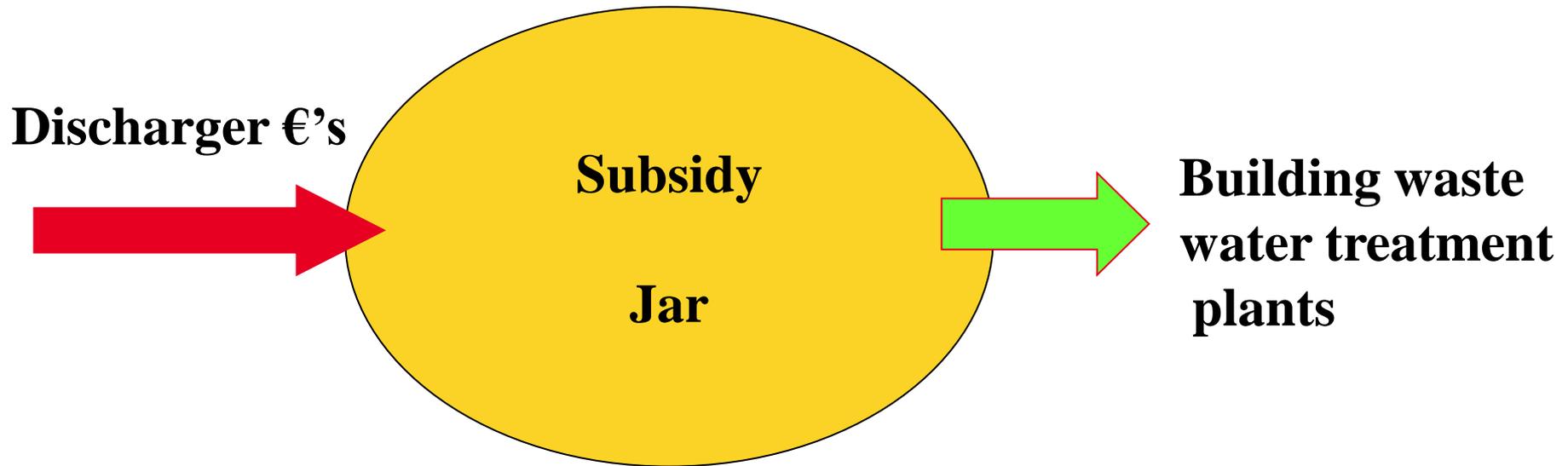
$$Q = \text{flow (m}^3/24 \text{ hr)}$$

Number of population equivalents (PE)=

$$\text{kg O}_2 / \text{year} / 54,8 \text{ kg (O}_2/\text{PE)}$$



# Polluter pay principle 1960-1996 (Netherlands) discharges on large surface water

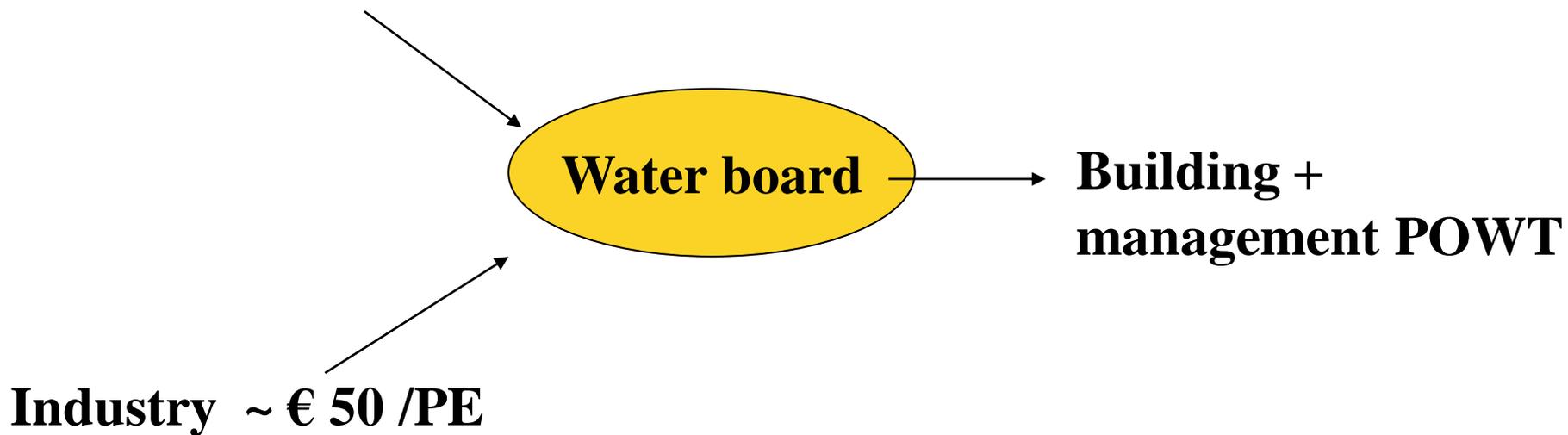


**Discharge 33 million PE (1970) => 10 million PE (1995)**

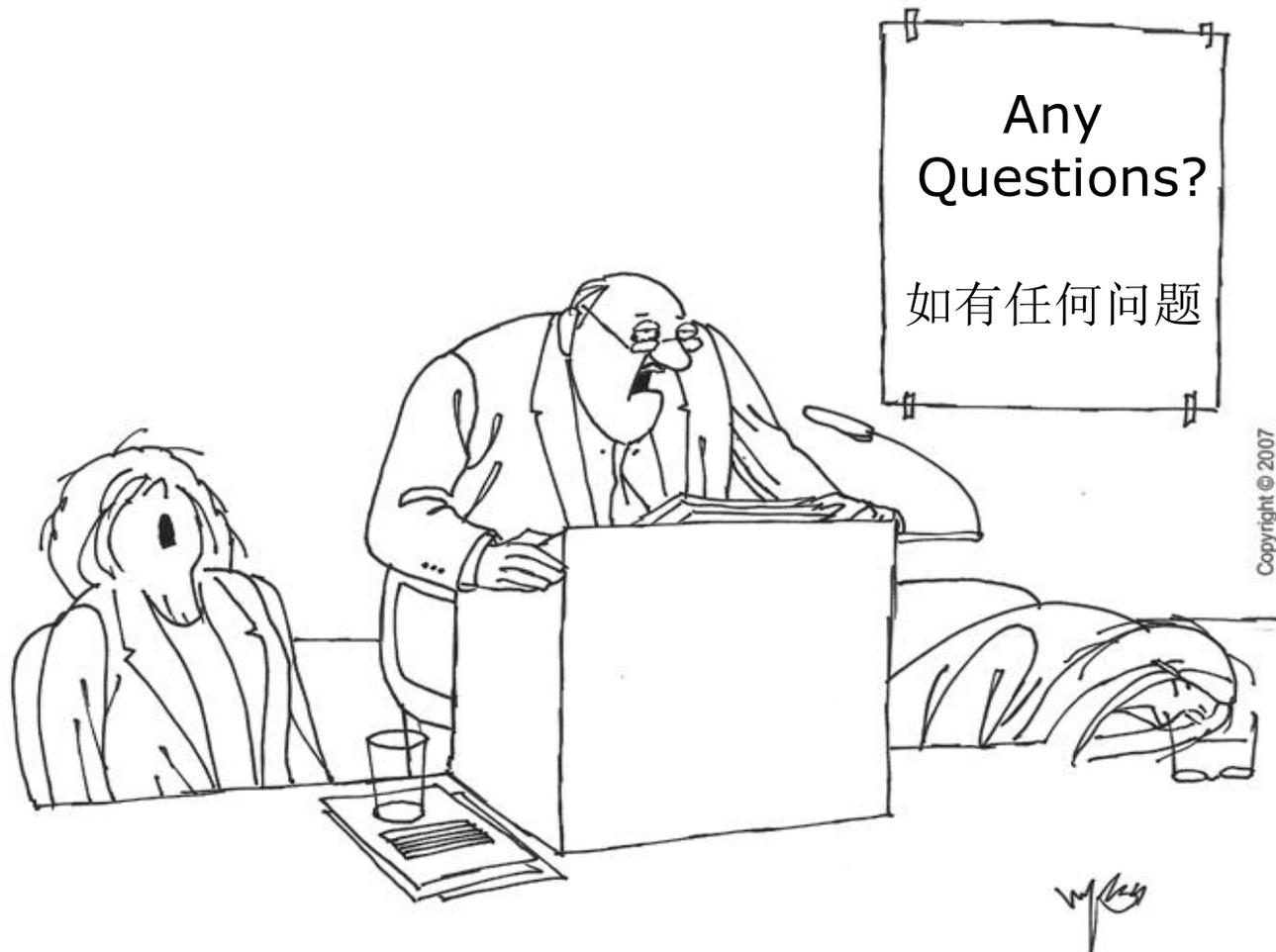


## Polluter pay principle sewage systems

**Each household ~ € 190 (3 PE) (pollution equivalent )**



**5,7 million PE purification capacity (1970) => 24,1 million PE. (1995)**



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