

WATER ECONOMY

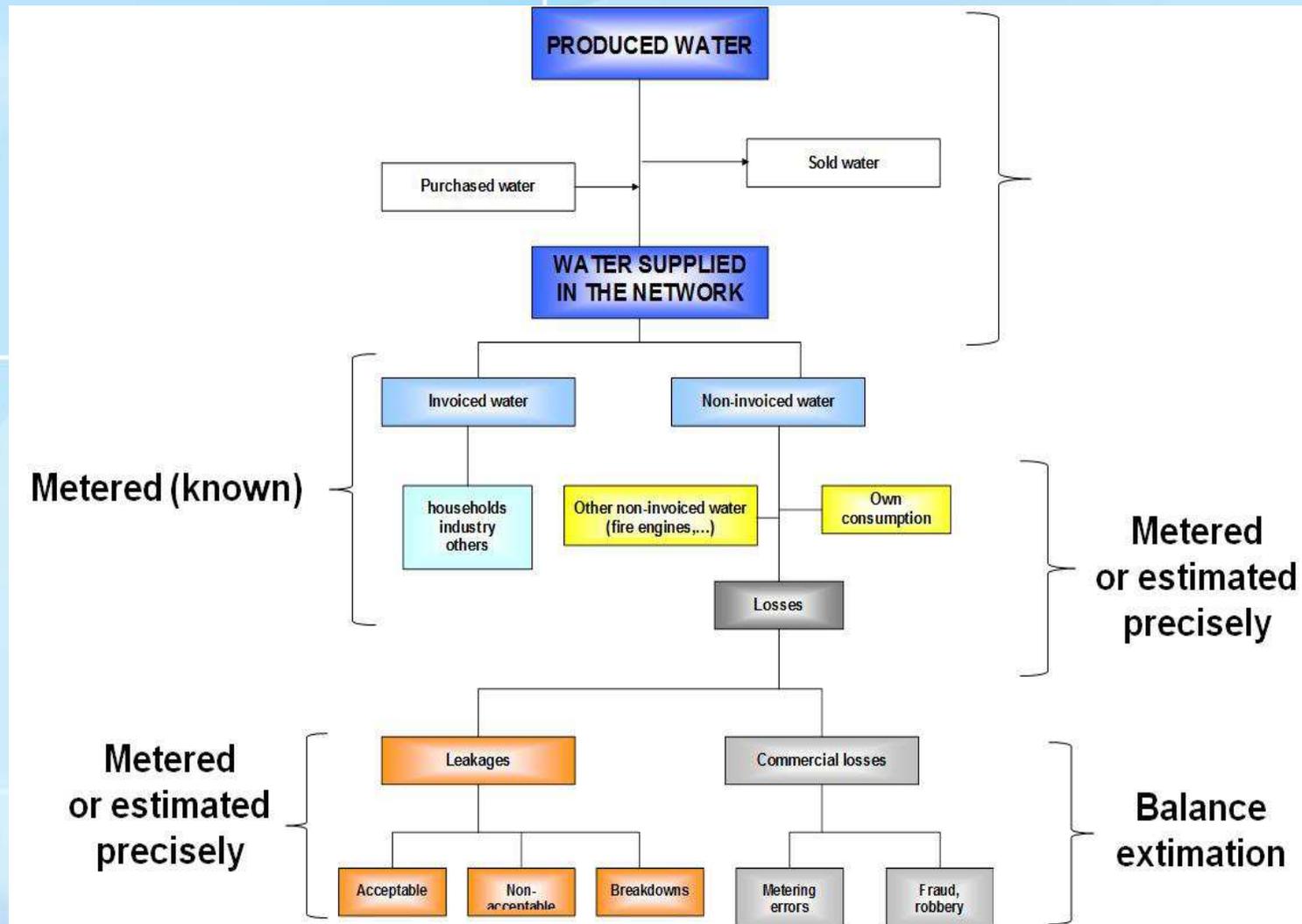
Water Loss Reduction

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Reasons for good water management and water losses decrease

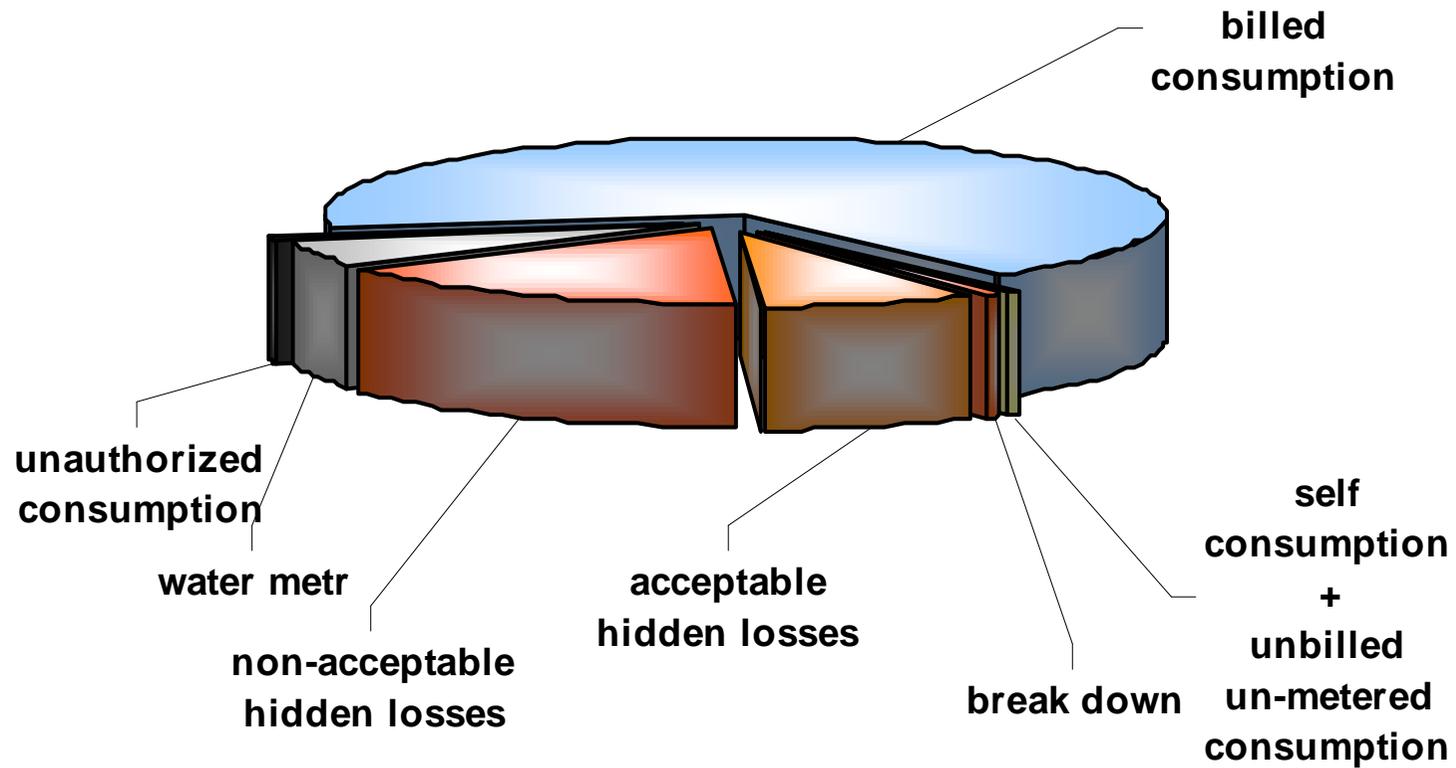
- Environmental – quality water sources protection
- Economic – raw water, water treatment and distribution cost
- Ethical – wastage is generally not acceptable from moral point of view

Water Balance and Terminology used in Central Europe



Analysis of losses in an operating company

Components of system input volume



WATER LOSSES

Leaks

acceptable

unacceptable

breakdowns

Invoice difference

meters, unauthorised consumption

CONDITIONS FOR WATER LOSS MEASUREMENT

sectorization

supplied water metering

charged water metering

WATER LOSS DETERMINATION CRITERIA

*% of non-charged water
unit leakage
minimum flow*

.....number of leaking breakdowns, connection losses.....

WATER LOSS REDUCTION MEANS

hidden leaks

pressure control

network restoration

invoicing

FIELD WORK

hidden leakage localization

flow metering

pressure monitoring



HIDDEN LEAKAGE LOCALIZATION

Preliminary search:

signal search

- *direct listening*
- *noise monitoring*



HIDDEN LEAKAGE LOCALIZATION

PRECISE LOCALIZATION:

signal analysis

- ***electro-acoustic***
- ***correlation***







*Management,
staff training,
device servicing,....*

Thank you for your attention