

# Waste and water regulation of tariffs in Sweden

Torino, September 14, 2012

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# In Sweden ...

- ✓ Public bodies have a large responsibility for both initiating, regulating and providing
- ✓ All public activities are based on the principle that
  - ✓ Actual costs (self-costs) are to be calculated
  - ✓ Revenues are to match (never to exceed) self-cost
  - ✓ Is that really difficult?



# Yes ... because ....

- ✓ What is a cost
- ✓ What is maintenance
- ✓ What is reinvestment
- ✓ What is an investment
- ✓ What is a revenue

Depends on  
the situation  
(industry)

- ✓ Prepaid and accrued items



# Today

## Practice vs regulation in Sweden



# Swedish municipality sector

- ✓ 290 municipalities
- ✓ 4000 - 800 000 inhabitants, median 16 000
- ✓ High degree of independency
- ✓ Financed both from income tax and fees
- ✓ Large part of budget is 'Soft activities'; Care-giving, social services and education
- ✓ Also infrastructure and engineering, such as water and sewage, waste, public transport



# The water sector in Sweden



# The water administration

- ✓ Water is a compulsory local government responsibility
  - ✓ Water supply
  - ✓ Wastewater treatment
  - ✓ Stormwater
- ✓ The municipalities own the facilities and are responsible for running them



# Legal frameworks

- ✓ Public Water and Wastewater Plant Act
  - ✓ Environmental Code (Environmental Act, 1999)
  - ✓ Health Act
  - ✓ Food act
- 
- ✓ Ministry of Environment (Environmental Protection Agency)
  - ✓ Ministry of Agriculture (National Food Administration)
  - ✓ Discharge of treated wastewater mostly the County Administrative
  - ✓ Board. Regional and Supreme environmental courts.





# Organisation

Form	Number
Municipal unit	Approx 250
Municipally owned company	More than 40
Inter-municipal companies/units	More than 10
Management contract	Less than 5

- Mostly small (municipal) units
- Municipal borders still difficult to pass



# Output and Demand

- Most activities run by municipalities
- Most resources (costs) bought externally
  - Investments 80%
  - Operations 50%



# Output and Demand

- 90% of the population connected to water and wastewater
- 2000 publicly owned waterworks:
  - 51% surface water
  - 23% artificial ground water
  - 26% groundwater
  - Leakage drinking water 20%
- Household Consumption:
  - Approx. 200 l/p per day



# Costs

- ✓ In total: 14,1 billion SEK (1,5 billion Euro)
- ✓ Drinking water costs (production and distribution): 42%
- ✓ Wastewater costs (distribution and plants): 58%
- ✓ Interest on capital 37% of total costs
- ✓ Leakage



# Costs and tariffs (2)

- ✓ Tariffs cover 99% of total costs
- ✓ 1% added from local taxpayers
- ✓ Fee cover the costs in 66% of all municipalities



# Costs and tariffs (3)

- ✓ Tariffs stable with a slow (inflation) growth rate
- ✓ Connection fee, median 71 000 SEK, the larger municipalities the higher the fee. (SEK 10 000 – SEK 126 000)
- ✓ Fixed and current fee
- ✓ Average cubic (m<sup>3</sup>) price: 14,1 SEK (25 SEK)
- ✓ Average family cost is SEK 4200/year



# Accounting becomes crucial ...

- ✓ Profit is not accepted – reasonable return on investment. Actual costs (Self-costs) as base.
- ✓ Specific accounting law for municipalities
- ✓ Specific assets for the water and sewage sector – need specific accounting standards
- ✓ Comparisons used as substitute for competition (reviews instead of market)



# ... for regulation

- ✓ What is a cost
  - ✓ What is maintenance
  - ✓ What is reinvestment
  - ✓ What is an investment
  - ✓ What is a revenue
- 
- ✓ Prepaid and accrued items





# especially when ...

- ✓ Water fees only to be used for water activities, not other municipal activities
- ✓ Water collective
  - ✓ not equal to inhabitants
  - ✓ not equal to taxpayers
- ✓ Balance is needed between
  - ✓ collectives
  - ✓ generations



# Conditions

- ✓ Capital accumulation possible if re-investment plans can be presented and money used within 3 years
- ✓ Some municipalities have paid money back to subscribers (charged more than self-cost)
- ✓ Swedish Water Supply and Sewage Tribunal - adjudicates disputes (prices and actual costs)



# Use of market

- Competitive tendering of separate activities and mostly in small municipalities to solve problems
- No systematic empirical evidence of differences in performance depending upon choice of organisation model
- Tendering not much of an issue – pragmatic approach. Most resources bought externally.



# Trends and Challenges

- Solitary municipalities often too small to cope
- New demands (legal and other) require improvements
- Recruitment and finding experienced staff is difficult in many (small) municipalities
- Reinvestments issues
- Regional investments difficult to manage (combining existing and new facilities)



# The waste sector in Sweden

# Legal frameworks

- ✓ Responsibility for waste in Sweden is divided between
  - ✓ Municipalities (local authorities)
  - ✓ Producers
  - ✓ Other waste holders and producers
- ✓ Environmental Code based on the Environmental Act, 1999



# Legal frameworks (2)

## ✓ Priorities

- ✓ Prevention
  - ✓ Reuse
  - ✓ Material recycling
  - ✓ Other recycling
  - ✓ Disposal
- ✓ Material recycling of packaging, waste paper, scrap and electrical waste



# Legal frameworks (3)

- ✓ Municipalities are responsible for household waste (legal monopoly)
- ✓ Other waste is a 'free market'
- ✓ Municipalities are responsible for hazardous waste from households (compulsory task)





# Handling of household waste

Approx 50% of household waste materials are to be recycled (goal 2010)

## Outcome 2011

Recycling, incl biological treatment	49,2%
Biological treatment	15%
Incineration	51,4%
Landfill	1%

# Organisation

Form	Number
Municipal unit (department)	>150
Municipally owned company	Approx 50
Inter-municipal (regional) companies	Approx 20
Mixed solutions	

- Cooperation is common:
  - Joint committees
  - Municipal associations
  - Municipal regional corporations



# Operations

	Municipal units	Contractors
<b>Collection</b>	Approx 30%	Approx 70%
<b>Treatment</b>		
Incineration	16%	84%
Bio.treatment	100% (approx)	
Landfill	45%	55%

Municipal companies are commonplace within all municipal activities – but tendering problems have occurred...



# Household waste fees

- ✓ Municipalities handle household waste
  - ✓ set the municipal fees
  - ✓ Fees must cover all costs
  - ✓ Recycling centres for bulky, hazardous waste etc.
  - ✓ Basic fee is compulsory for all households
  - ✓ Collections fee and treatment fee
- ✓ Producers – charge the fee on the product itself
- ✓ Industrial waste a free market



# Fees (2)

- ✓ Average household pays SEK 2 000 /year (Euro 225)
- ✓ In 2011, 29 municipalities had introduced weight-based fee



# Fees (3)

- ✓ Only 16% of the municipalities waste incineration is under direct control
  - ✓ Own facilities
  - ✓ Joint ownership
  - ✓ Regional cooperation
- ✓ Other municipalities appoint contractors for incineration
  - ✓ Yearly fee SEK 2 000 (Euro 225)



# Industrial waste

- ✓ Fees for industrial customers not regulated (free market)
- ✓ Most treatment plants (facilities) owned by municipalities
- ✓ The same facilities (capacity) are used to treat household waste and commercial waste => difficult pricing



# Regulation

- ✓ Profit is not accepted in monopoly activities
- ✓ Actual cost (collectively) is the base for pricing in municipalities
- ✓ Never use household fees for commercial waste costs !!!! Commercial waste may subsidize household waste.





# Regulation (2)

- ✓ Household fees are only to be used for costs for the paying consumers' consumption
- ✓ Costs generated from other generations (closed down landfills) are to be paid for by local taxes
- ✓ Provisions for future operations in landfills are crucial



# Use of the market

- Frequent use of external contractors for collection
- Increasing use of contractors for other activities
- Competitive tendering common in small municipalities – pragmatic approach
- Difficult (in cost terms) to combine industrial and household waste in treatment plants



# Trends and Challenges

- Solitary municipalities often too small to cope
- Regional initiatives are considered very important
- New demands (legal and other) require improvements
- Recruitment and finding experienced staff is difficult in many (small) municipalities



# Self-cost systems

- In a self-cost based system accounting **definitions** are crucial
- Harmonized accounting is vital because:
  - Every generation is to pay for its consumption
  - Comparisons crucial to measure value for money
- Cost-based systems difficult when production resources are used jointly for both regulated and non-regulated activities (waste



# Finally

- Water and sewage among the least commercial infrastructural systems in Sweden
- Waste shows a great variety
- Electricity, telephone etc regulated markets continuously growing more complex
- The ‘mentality’ is that these systems should be owned by public bodies, but may be operated by non-public actors



# Links ...

- **Swedish Waste Management (Avfall Sverige)** [www.avfallsverige.se](http://www.avfallsverige.se)
- The Swedish Water & Wastewater Association Svenskt vatten  
[www.svensktvatten.se](http://www.svensktvatten.se)
- Swedish Association of Local Authorities and Regions (Sveriges kommuner och landsting) [www.skl.se](http://www.skl.se)

