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Mini-presentation for SPPI on:

**NACE 36-37 Water and
Sewerage in Sweden**

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1. Definition of the sector

The water and sewerage services are comprised of division 36 and 37 according to NACE Rev. 2. In these sectors Sweden only covers 36 (Water collection, treatment and supply) in PPI. Sewerage has not been included as an own division. Sewage is however integrated with water supply and sewerage is to some extent in the current calculation of water, in the form of handling day- and waste water.

Table 1: Water supply and sewerage according to NACE Rev. 2 and SNI 2007

NACE Rev. 2	36.0	- Water collection, treatment and supply
SNI 2007	36.001	- Ground water supply
	36.002	- Surface water supply
	37.0	- Sewerage

Division 36 includes water collection, treatment and distribution activities for households and industrial needs. Collection of water from various sources, as well as distribution by various means is included. According to SNI 2007 (Swedish Standard Industrial Classification) division 36 have two sub levels, ground- and surface water supply.

Division 37 includes the operation of sewer systems or sewer treatment facilities that collect, treat and dispose of sewage, e.g. collection, transport and treatment of human or industrial wastewater. There are no more detailed sub levels in this group.

Most households in Sweden receive water from a municipal plant. There are more than 1750 municipal water treatment plants that together produce nearly 900 million m³ of drinking water per year. The price on water, supplied by the public waterworks, also covers costs for waste water treatment. A municipality often determines the charges, although some services may be performed by private entities. Therefore they are called charges for municipal tariffs. The municipal tariff consists of a fixed and a variable charge. The fixed charge should cover the cost of investment and maintenance of water and sewer lines, water works, sewerage treatment plants, pumping stations and administration. The variable charge is based on the amount of water consumed in the building, as read on a water gauge or as a stated annual consumption.

Water and wastewater operations in Sweden are a so-called natural monopoly. This means that the principals are sovereign to decide their own rate. However, the tariff is determined upward by the water service legislation¹ that states that revenues for the business may not exceed the necessary costs. It is called the prime production cost principle. Also, due to the legislation in place, municipalities are required to provide water and sewerage services.

The total use of water in the Swedish industry sector was 2.3 billion m³ in 2010. The most important water source for the industry sector is self-supply of water, mainly from rivers and lakes but also from the sea. Only 5% of the total volume comes from municipal plants or

¹ Lag (2006:412) om allmänna vattentjänster. *Swedish Code of Statues*.

other purchased water. Discharge of water used in the industry sector is mainly done in-house. Discharge to municipal plants is only 4% of the total discharge.²

2. The water and sewerage survey in the Swedish PPI

2.1 Collection of prices

The prices collected in the survey are only from municipal plants. The water survey consists of data for two type houses. Type house A, an "average house", and Type house B, an apartment building. Data for the two type houses is collected from all municipalities in Sweden by the trade association *Svenskt Vatten* (Swedish water). The price is set in the beginning of the year, but it takes *Svenskt Vatten* a few months to collect and process all data. *Svenskt Vatten* publishes the results from all municipalities with data for the number of residents, annual cost, daily cost and cost per litre on their website. A weighted average for the annual consumption cost for respective type house is then calculated.

Definition: Type house A

Type house A includes a detached villa without a basement comprising 5 rooms, bathroom with WC, laundry room, an extra toilet and a garage. Gross floor area 150 m² including 15 m² garage, plot area 800 m² and water consumption of 150 m³/year. This property is connected to the water, waste- and rainwater. Fees are reported with VAT included.

Definition: Type house B

Type house B includes an apartment block connected to water, waste- and rainwater. It includes 15 apartments, 1000 m² floor area, 800 m² plot area and water consumption of 2000 m³/year. The house has 2 parallel-connected water gauges with q_n 2,5 m³/h.³

In the survey Type house A, an "average house" represents households, and Type house B, a building with 15 apartments, represents households as well as the industry and public use. The prices are updated twice a year, in January and during the summer. During other month's, unchanged prices are registered (carry forward). The municipal rates/tariffs are registered after they have been published, sometime during the summer. Therefore the CPI index Water and Sewerage is used as a proxy in January until the real prices comes in. CPI:s type house is almost identical with Type house A. VAT and taxes are excluded from the CPI index.

2.2 Weights

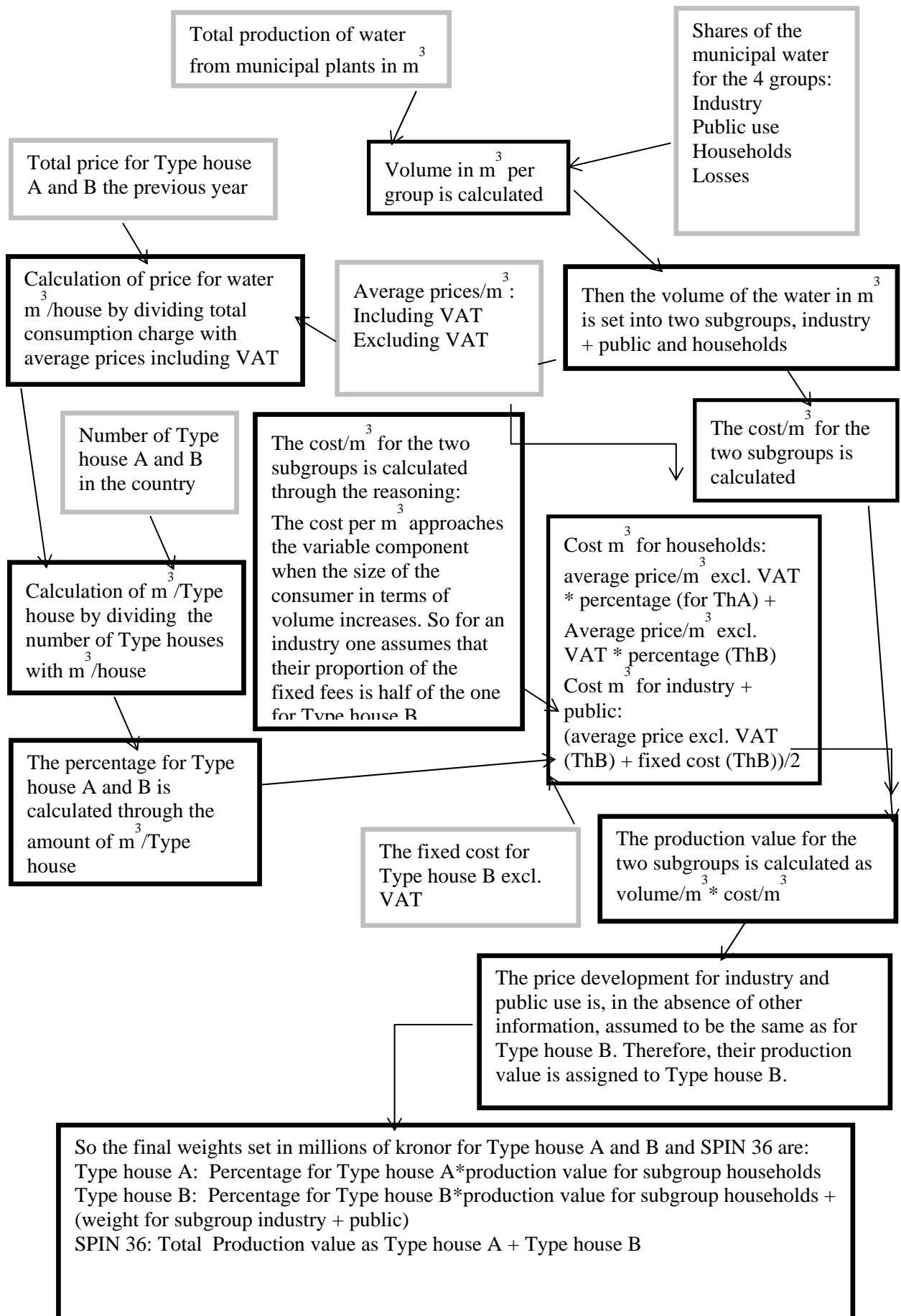
The weights are based on the amount of water that the municipal plants produce. The weights between the two type houses and for division 36 are updated each year. The calculation is somewhat tedious. The data collected for the weight calculations is the total production of water by all municipal plants, the proportion of municipal produced water used by industries, public, households and the consumption in production of water including losses in lines, the number of houses in form of Type house A and B in the country and also the fixed cost for Type house B. The weighted average for the annual consumption cost for respective type house is also used.

² Publication: Industrial water use in Sweden 2010, http://www.scb.se/Pages/Product___38874.aspx

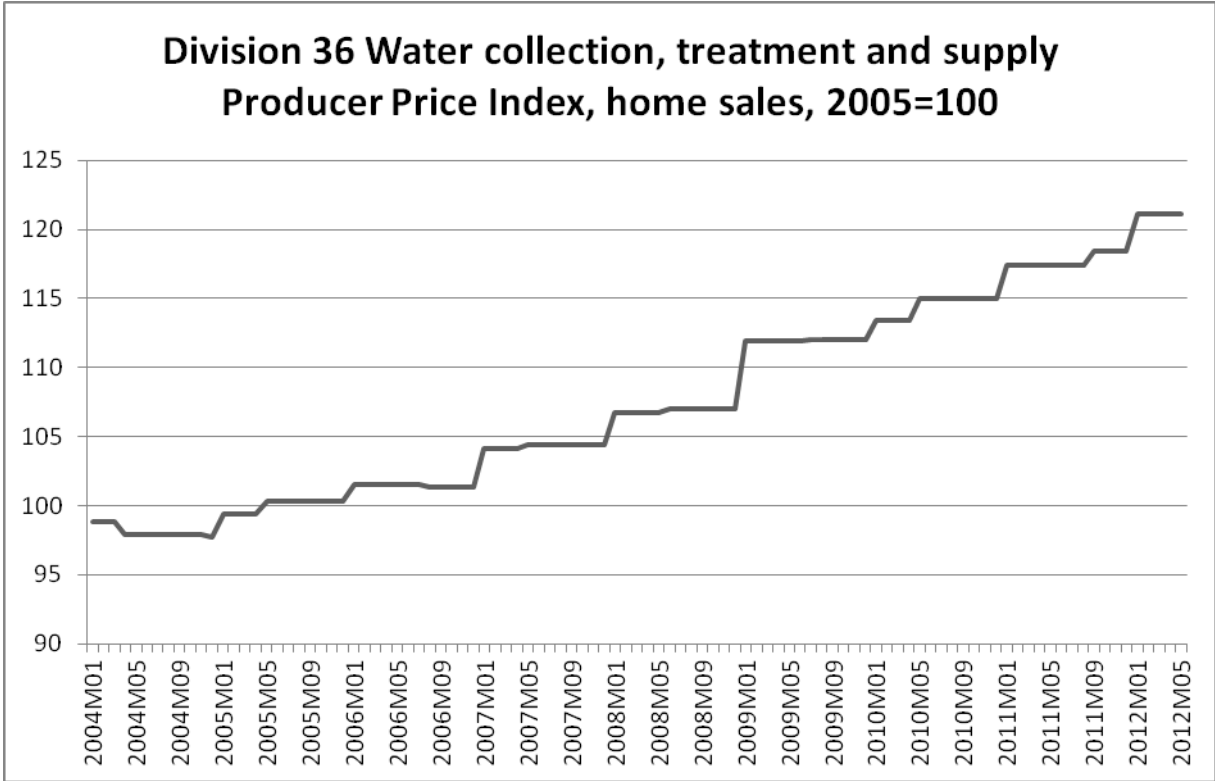
³ q_n means *nominal flow rate*.

Below is a flowchart over the weight calculation for water. The grey boxes are input data and the black boxes are calculations. Type house A and B are sometimes called ThA and ThB in the flowchart.

Flowchart over the weight calculations for water



3. The price development for Division 36 since year 2004



The diagram shows the price development for division 36, water collection, treatment and supply, in the Swedish PPI since the last review in 2004. Division 36 is only measured for home sales in PPI. Since 2005 there are only two updates of the price per year. The CPI proxy has been a good guide line for the price development most years.

4. A review in 2012

The current method for the water survey has been in use since 2004. A review has been decided to be carried out during 2012. The main reasons for this is the long time since the last review and to see if we really cover as much as we can of what is produced in the industry. Since the Swedish National Accounts is supposed to be the primary user of the PPI index for water and sewerage, their opinion is important if any changes in surveys are considered. However, in the current situation and for many years back the National Accounts have used CPI rather than PPI in both quarterly and annual calculations. The review should lead up to that the National Accounts will use the PPI index.

The price collection, the calculation method and the weights for water should be reviewed to see if the method is still the best we can do and that we cover what is produced in the industry. For sewerage we want to see if there is a possibly to develop a new calculation method that includes more than municipal plants handling of day- and waste water.