

Nuclear Power in Sweden after Agreeing on a Fading out

Lars G Josefsson, President and CEO Vattenfall AB
Berlin, February 5, 2004



The Vattenfall Group

Q4 2002+ Q1-Q3 2003	Nordic Countries	Germany and Poland	Total
Net sales, MEUR	4,836	7,564	12,400
Electricity generation, TWh	77	79	156
Heat sales, TWh	8	29	37
Employees*	8656	26 709	35 365

*Q3 2003

Vattenfall
– A leading European energy company



To be number one for...



The Environment

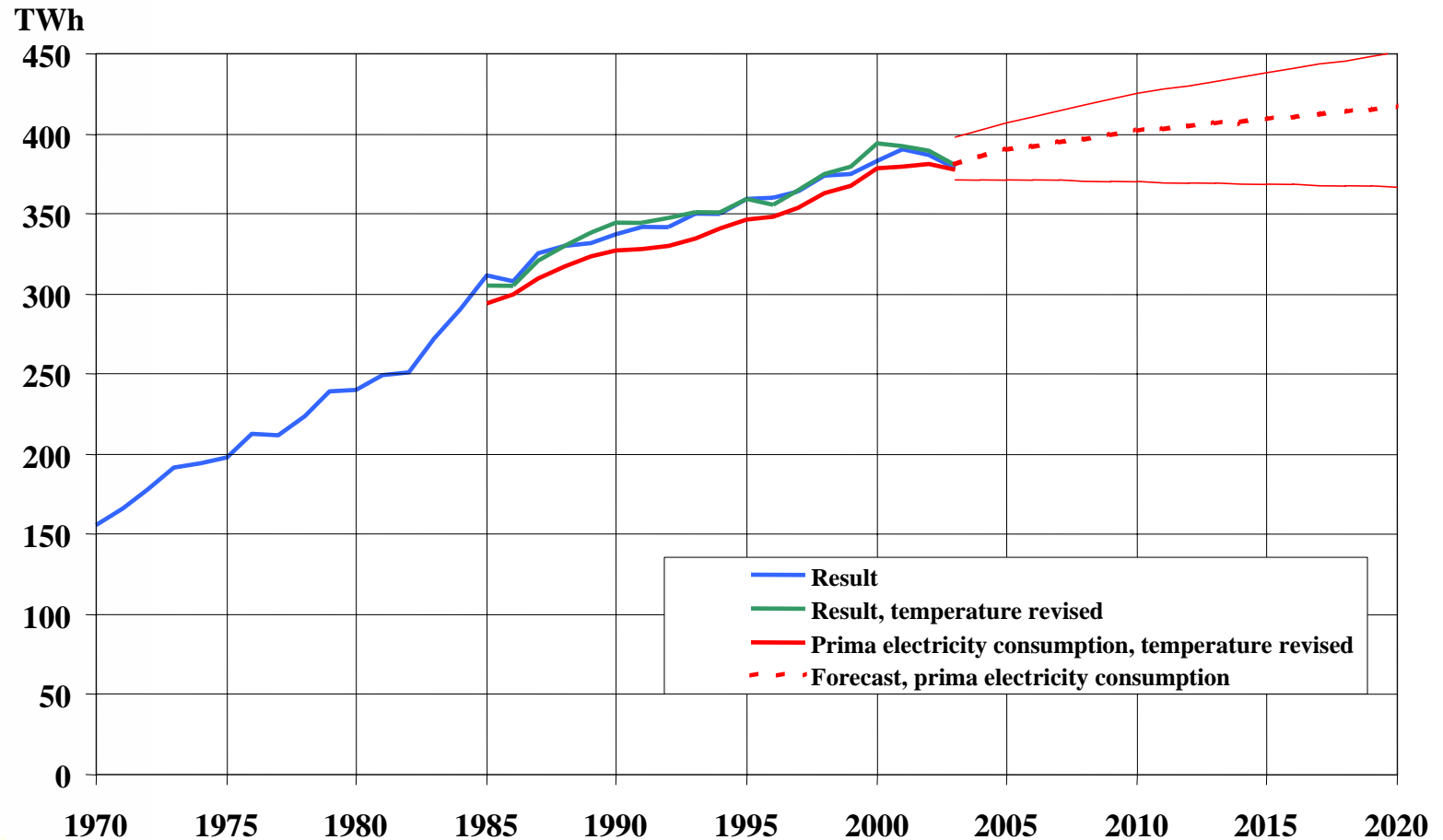


The Customer



The Economy

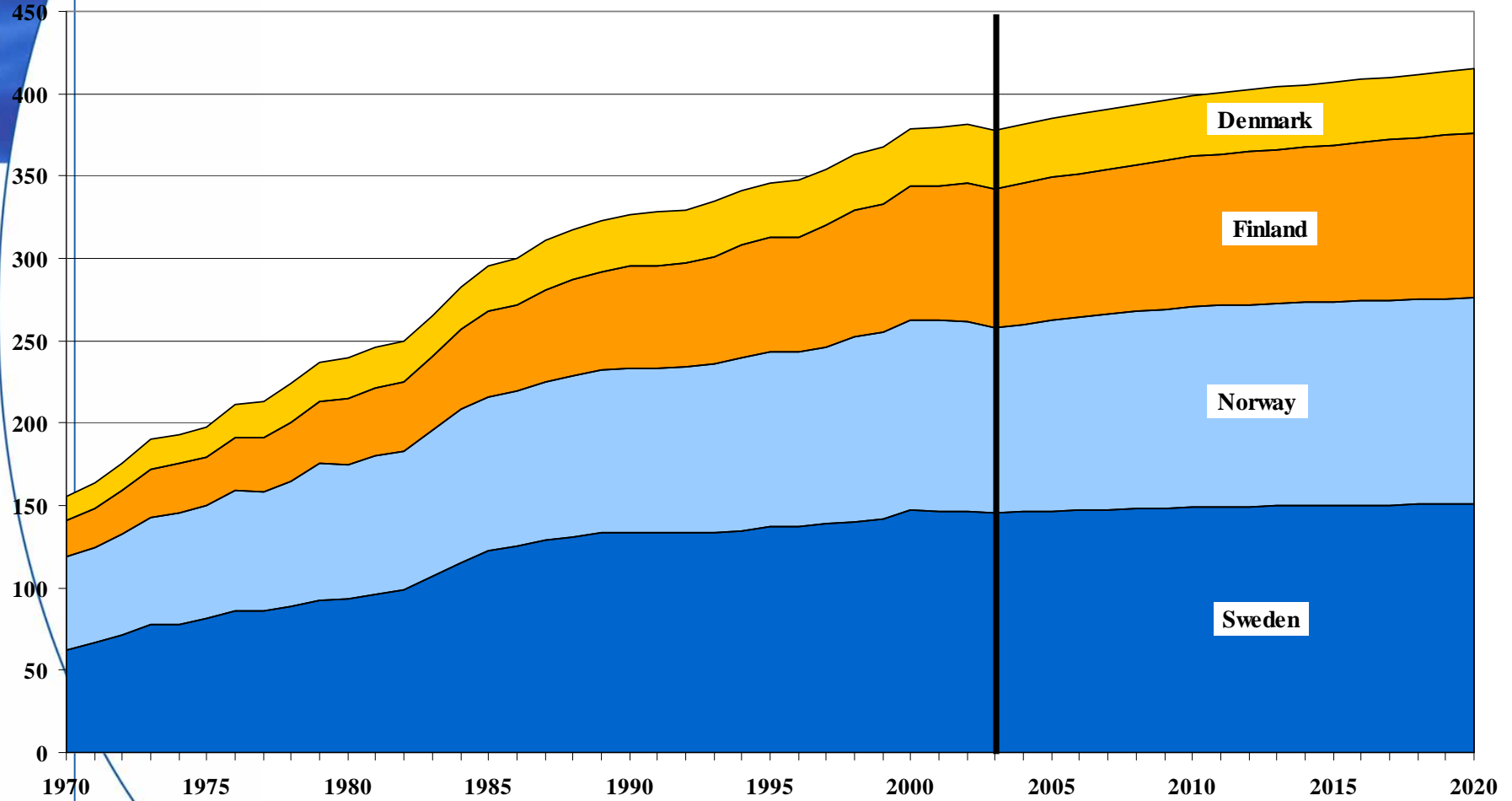
Electricity consumption in the Nordic region



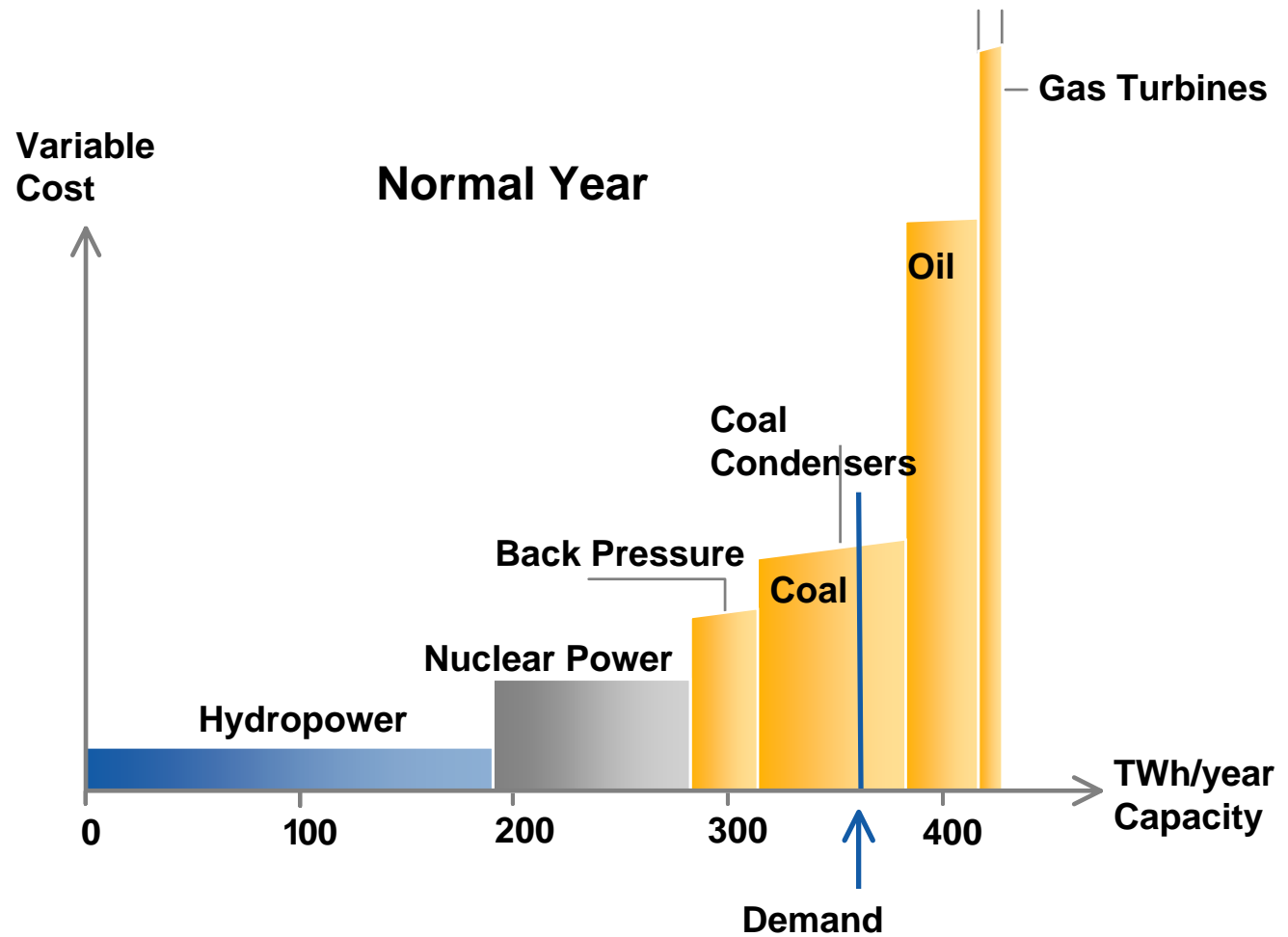
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Electricity consumption per country

TWh



Capacity and Demand in the Nordic Region



Changes in base generation 2003 – 2015

Sweden 17,1 TWh **Finland 13,4 TWh**

Wind	4,9
Hydro	1,3
Nuclear uprating	7,4
Natural gas CHP*	2,0
Biofuel CHP*	2,0
Stenungsund	3,6
Barsebäck 2	- 4,3

Wind	0,9
Hydro	0,3
CHP*	5,5
Nuclear power	10,0
Decommissioning of coal condense units	-3,3

Norway 6,8 TWh

Wind	3,9
Natural gas	0,0
Hydro	2,9

Denmark -1,2 TWh

Wind	0,8
Decentralized CHP	0,1
Avedøre 2**	1,3
Decommissioning of coal condense units	-3,4

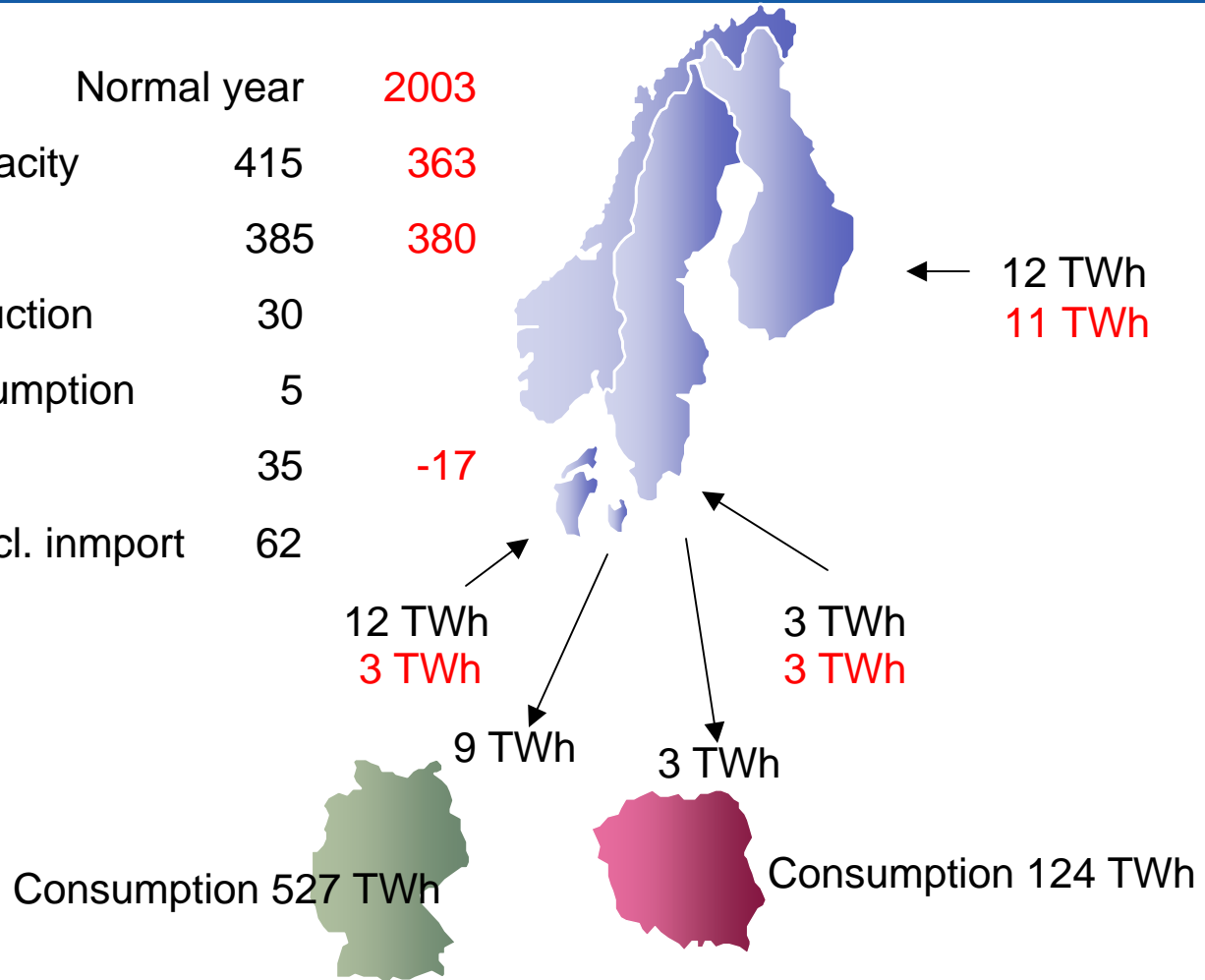
36,1 TWh

* CHP and back-pressure generation

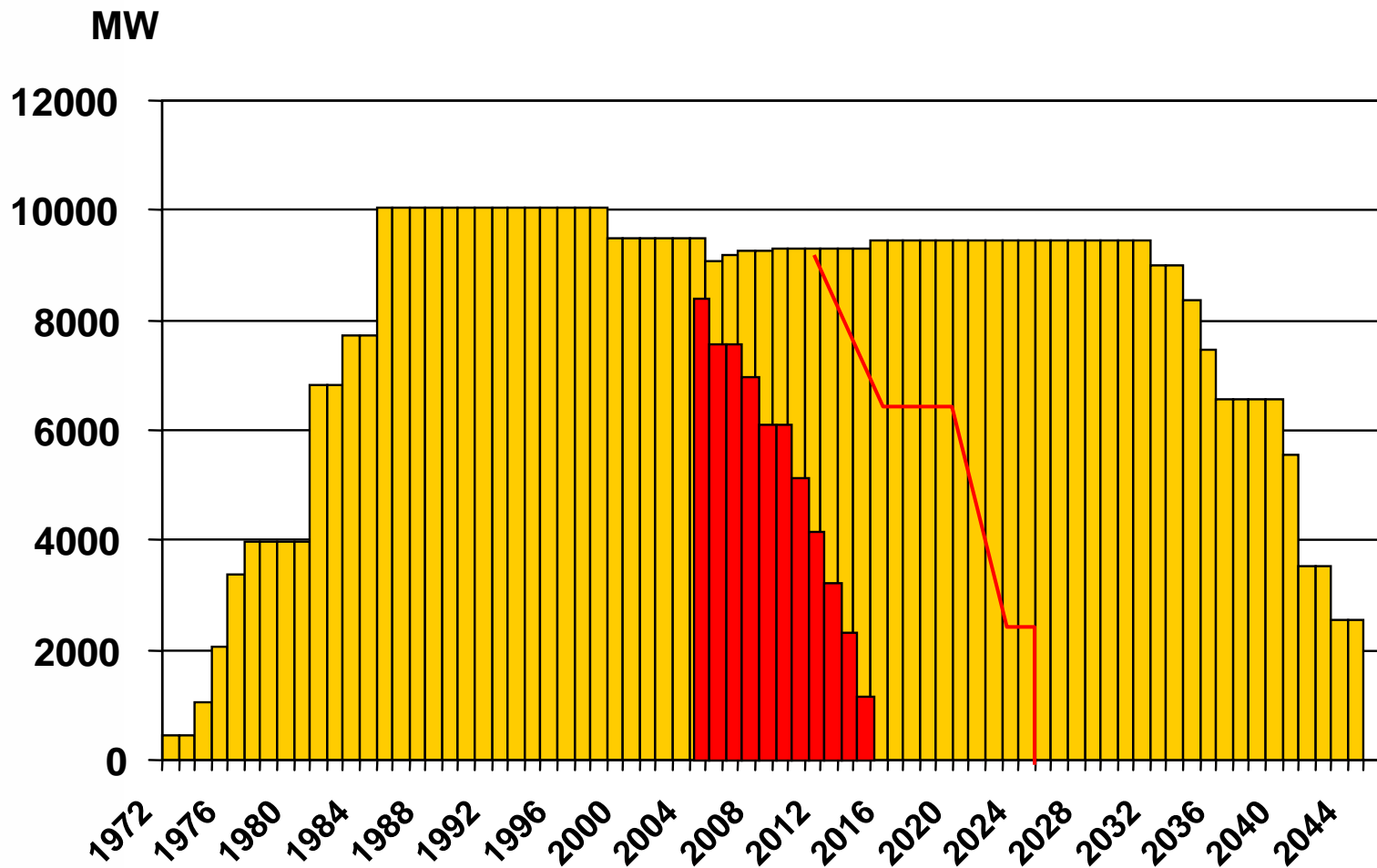
** Can be run both as CHP och condensing

The Nordic market and cross border capacity

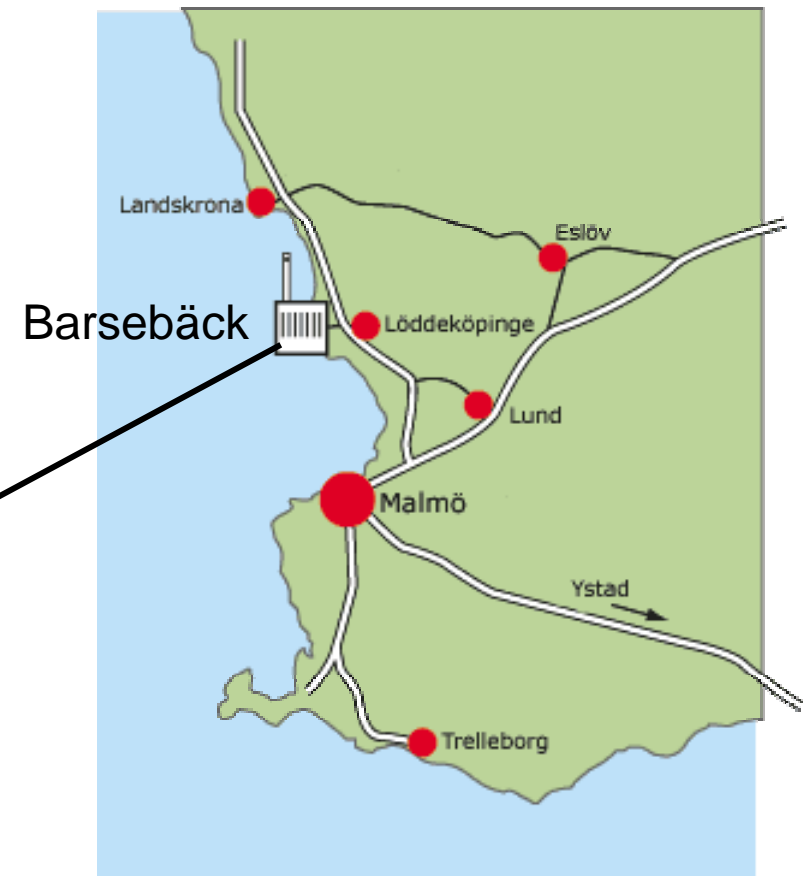
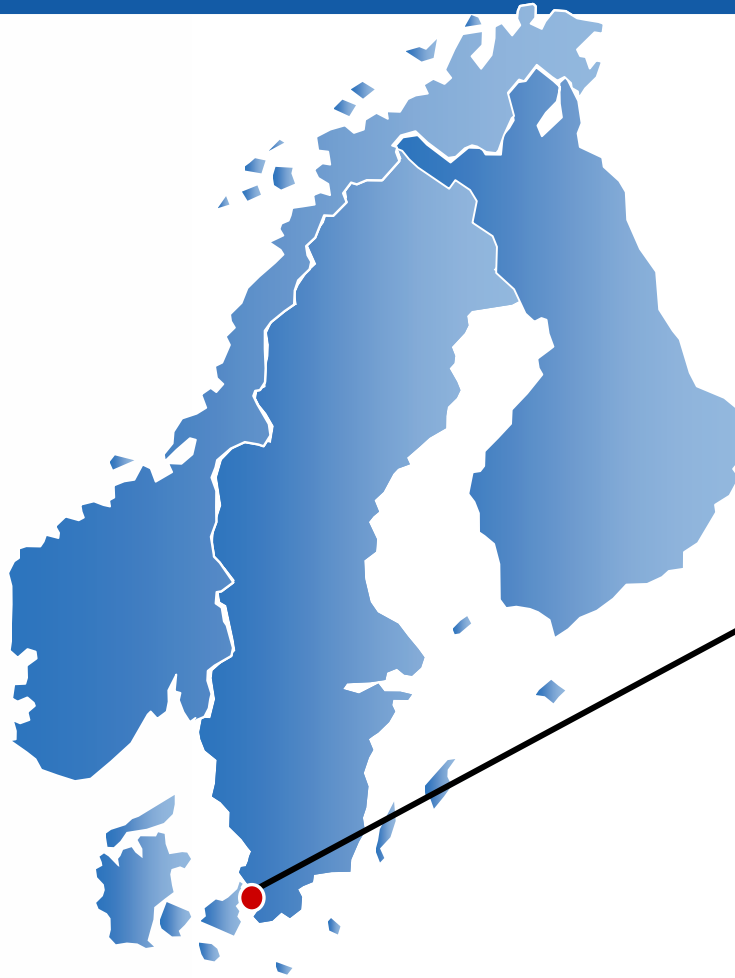
TWh	Normal year	2003
Production capacity	415	363
Consumption	385	380
Margin in production	30	
Margin in consumption	5	
Total margin	35	-17
Total margin incl. import	62	



The Swedish nuclear programme



Location of Barsebäck



SCENARIO I

Base scenario with an increase in electricity consumption of 36 TWh until 2020.

Additional base generation amounting to 36 TWh

SCENARIO II

Same as I including emissions trading

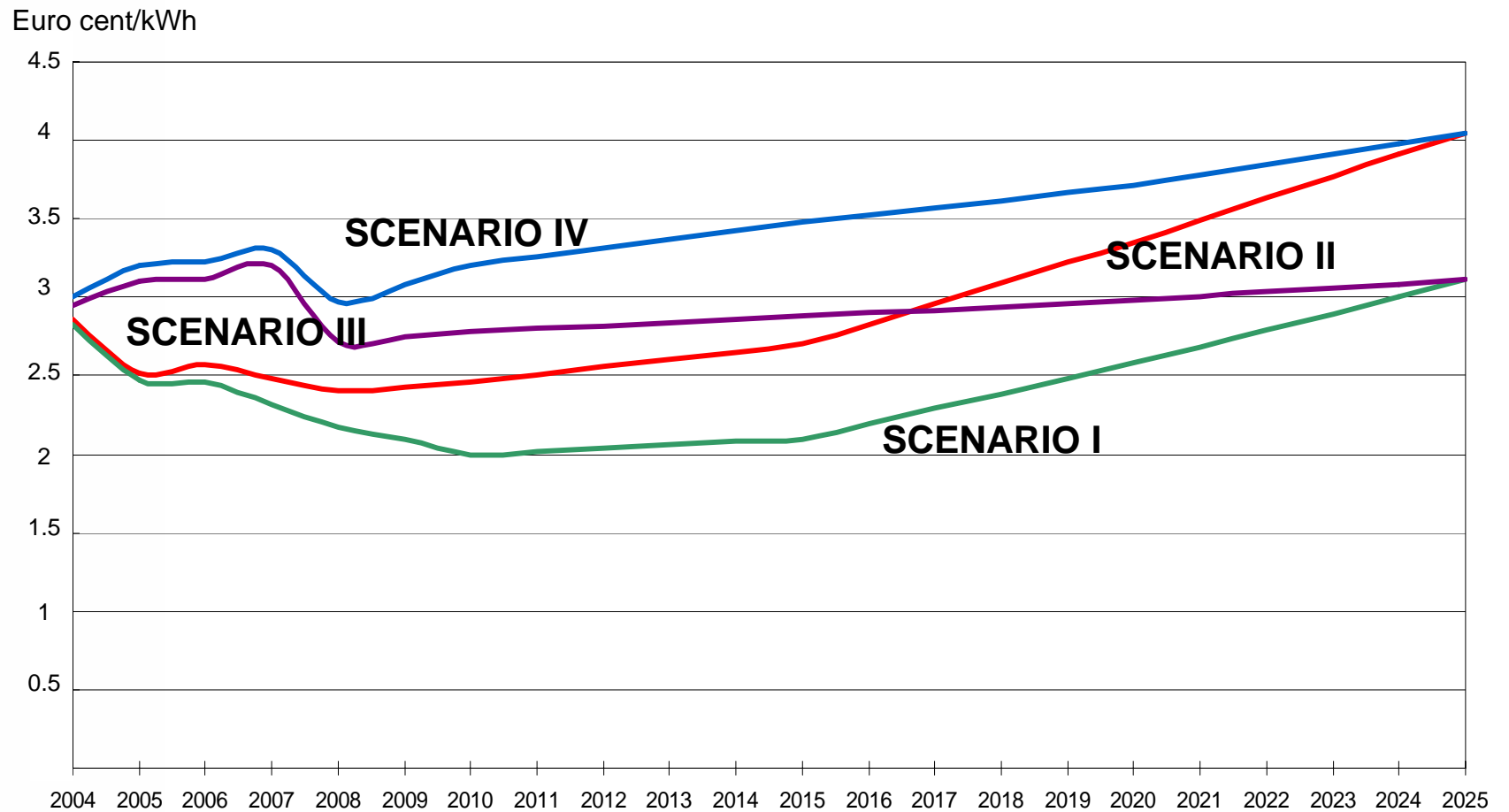
SCENARIO III:

Quick decommissioning in Sweden according to a proposal from the Green Party. Electricity consumption according to scenario I.

SCENARIO IV:

Same as III including emissions trading

Electricity prices in the Nordic region - premature decommissioning of nuclear power



Summary

	Price 2015 Euro cent/kWh	Add. cost 2004-2025 GEUR
I: Base scenario	2.3	
II: Base with emissions trading	3.0	
III: Quick decommissioning	3.2	
IV: III with emissions trading	3.8	
I-III		49.0
II-IV		47.7
I-IV		97.7

- The approach to nuclear and emissions trading will have a large effect on the price formation on the Nordic market
- Nuclear power is assessed to have technical and economic lifetime of at least 60 years. The remaining production volume represents a substantial financial value
- With the introduction of emissions trading, the financial value of the remaining nuclear production will increase
- A quick nuclear decommissioning will lead to increased electricity prices on the entire market until investments in new production is needed anyway (ca 2025)
- From around 2025, nuclear decommissioning is deemed to have a limited effect on the price formation since the short time marginal cost is estimated to coincide with the long term marginal cost by that time
- Measures taken in Sweden will affect the determination of prices on the entire Nordic market. Should new production not be allowed in Sweden, it will be built in the neighbouring countries.