

# Vattenfall Capital Markets Day 2008

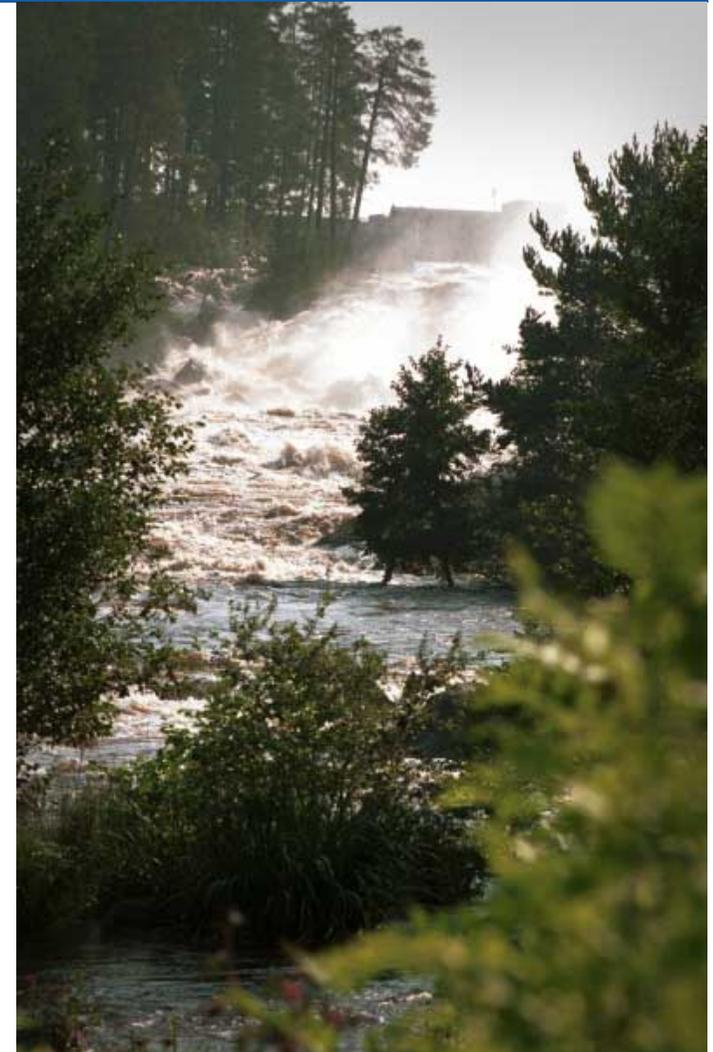
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Berlin, 8 September 2008

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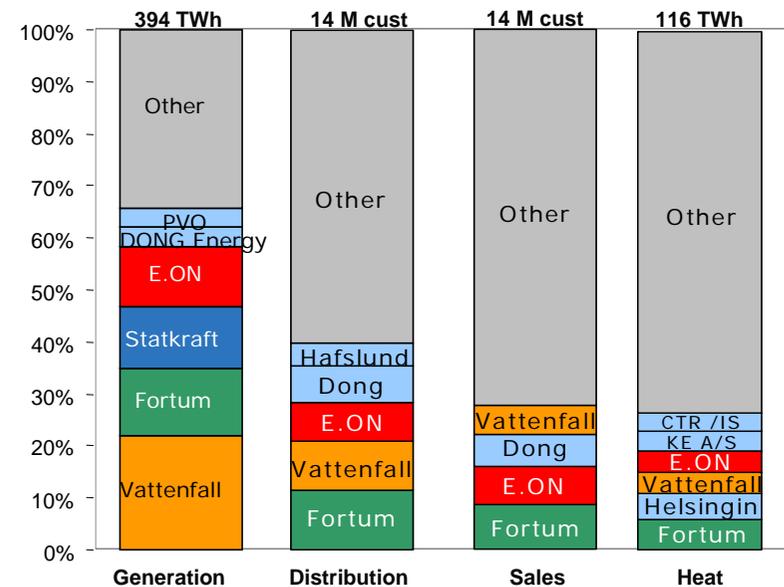
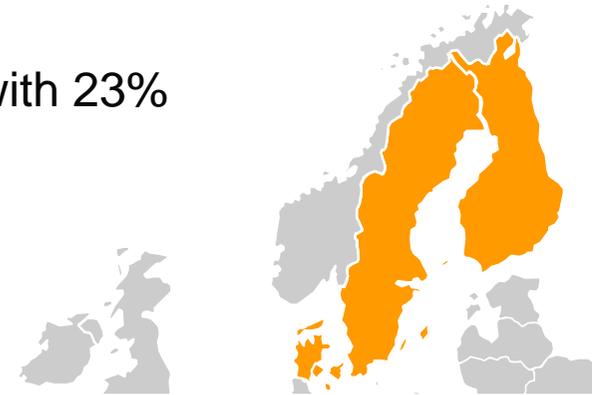


# Overview – Business Group Nordic

## Nordic market:

Vattenfall is the largest electricity generator with 23% market share

- Sweden:**  
 82.3 TWh electricity generation  
 4.8 TWh heat generation  
 0.7 million electricity sales customers
- Finland:**  
 0.8 TWh electricity generation  
 1.6 TWh heat generation  
 0.3 million electricity sales customers
- Denmark:**  
 8.0 TWh electricity generation  
 4.3 TWh heat generation



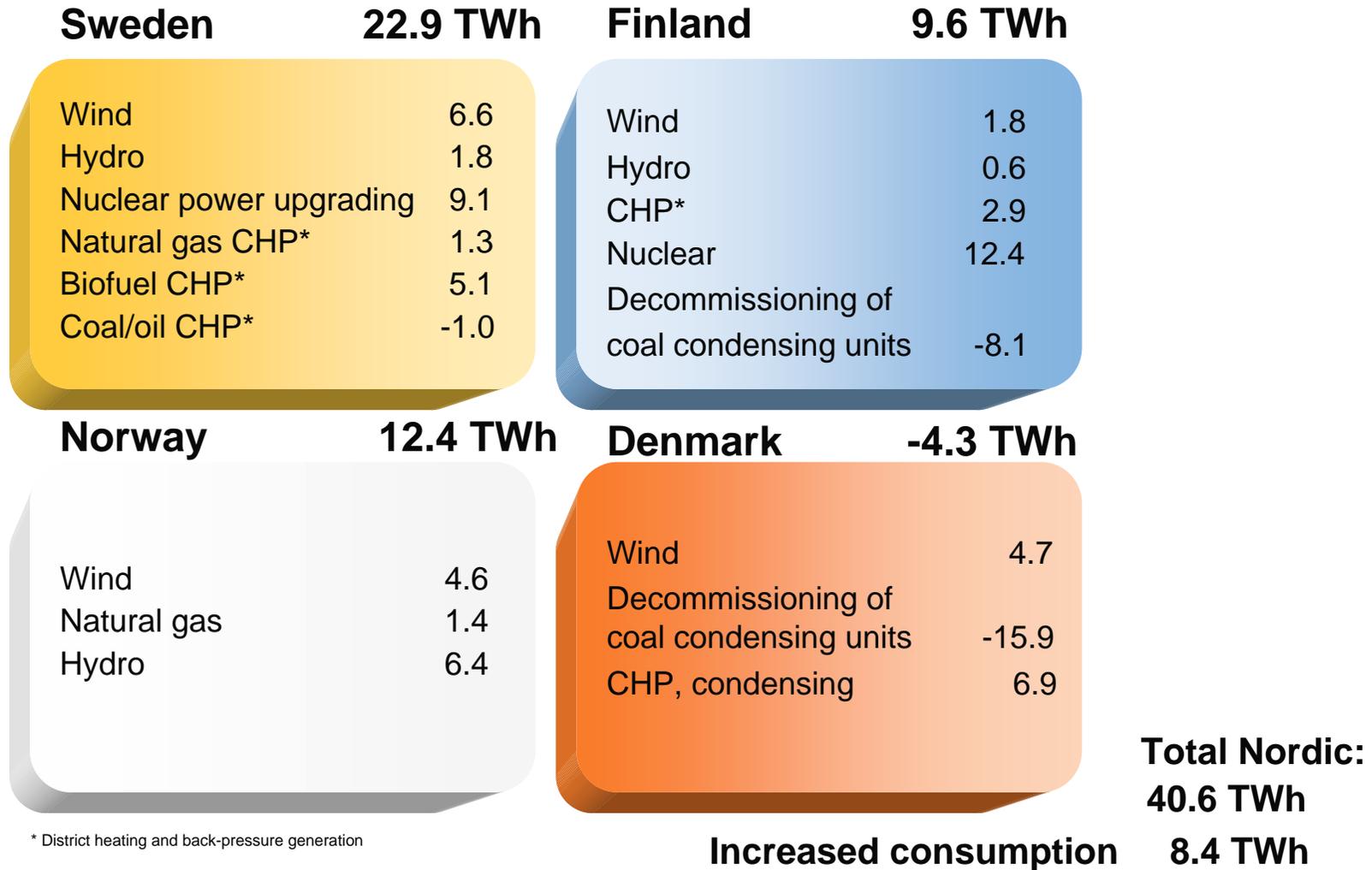
# The generation portfolio

# Our electricity generation portfolio

- **7 Nuclear reactors (~54 TWh/a)**
- **53 Large hydro power stations (~33 TWh/a)**
- **47 Small hydro power stations (~0.2 TWh/a)**
- **5 CHP-plants (~7 TWh/a)**
- **On- and off-shore wind power (~1.5 TWh/a)**
- **7 Condensing plants (reserve power ~0.5 TWh/a)**
- Most units are certified according to ISO environmental management system (international standard) or EMAS (European Management Audit Scheme)
- Vattenfall was one of the first energy companies in the world to analyse the electricity generation in a life-cycle perspective – LCA
  - LCA shows the environmental impact on resource use, emissions and waste.
- About 90 % of the generation is environmentally declared according to EPD (Environmental Product Declaration)



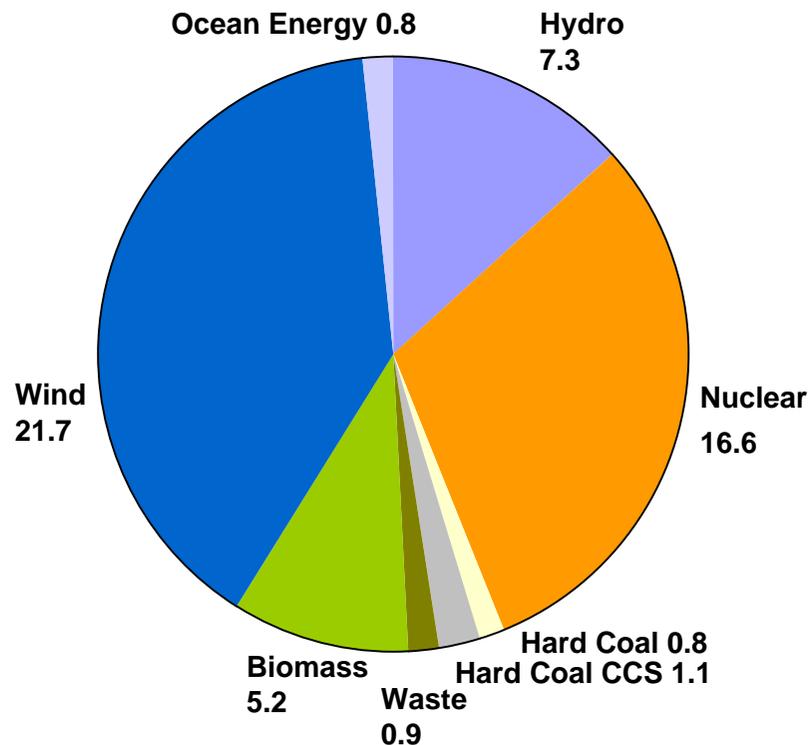
# Estimated changes in Base Power 2008 – 2020



\* District heating and back-pressure generation

# Planned capex for electricity generation 2008-2012

Business Group Vattenfall Nordic:  
(SEK billion)



SEK/EUR 9.378



- Total capex: SEK 55 billion
- Whereof growth investments: SEK 29 billion

# Growth in renewable energy

- Vattenfall Nordic aims to establishing a further 10 TWh of power generation capacity from renewable sources by 2016

– **Hydropower**      approx. 2 TWh



– **Biofuels**      approx. 0.5 TWh



– **Wind power**      approx. 7-8 TWh



# Nuclear

# Vattenfall's nuclear strategy

## Target

- Keep nuclear position in Germany and Sweden
- Expansion of nuclear energy-based generation portfolio in other markets, especially UK
- Reduce CO<sub>2</sub> exposure

## Prerequisites

- World class safety standard
- Lifetime extension of existing nuclear plants
- Securing sites for future expansion
- Planning, competence and resources for new nuclear

## Opportunities

- Public awareness of nuclear as CO<sub>2</sub>-neutral
- Germany to postpone nuclear phase out?
- Replacement of nuclear in Sweden

# Ongoing nuclear capex programme in Sweden

- **Programme for renewal**
  - Fulfil new security regulations and expected EU harmonisation
  - Modernise power plants for continuously high availability and safety
  - Improved efficiency (→ ~1.6 TWh)
- **Programme for power increase**
  - Increase the thermal power on 5 of 7 units (→ ~6.4 TWh)
- **Physical protection**
  - Fulfilment of SKIFS 2005:1 with substantially increased level of ambition for the physical protection



# Short-term issues Swedish nuclear

There have been four (May-Aug) deviations from the requirements in the Safety Analysis Report, and/or the Technical Specifications:

- Ringhals 2, capacity problem in auxiliary feed water pumps, May (INES 1)
- Forsmark 2, external grid disturbance that resulted in exceeding the thermal limits of the reactor fuel, June (INES 0)
- Forsmark 2, closed valve in one train of the core cooling system, Aug (INES 1)
- Ringhals 3, fuel elements not corresponding to design spec, Aug (INES 1)

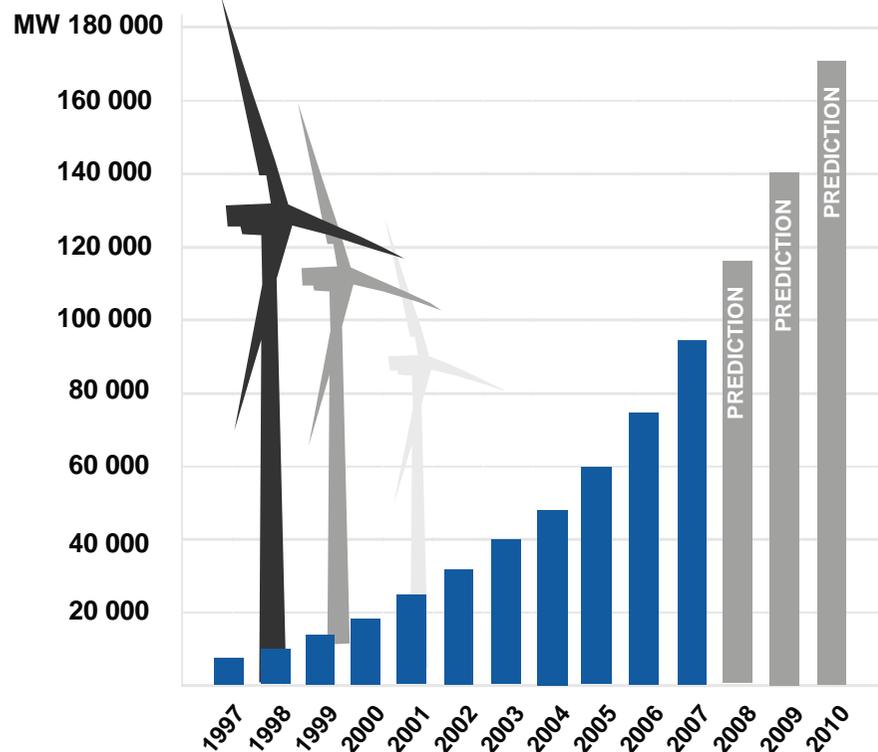


# Wind

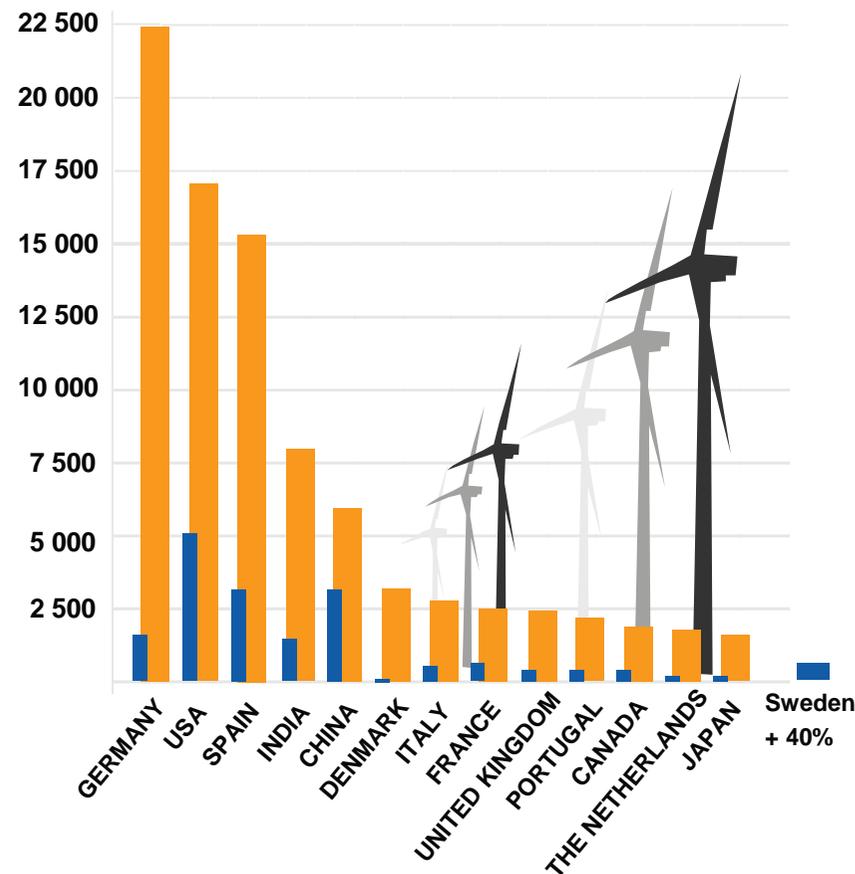
# The global wind power revolution is already here...

## World wind energy

- total installed capacity and estimate until 2010



■ New capacity installed 2007 (Diff 2007-2006)  
■ Total capacity installed at the end of 2007

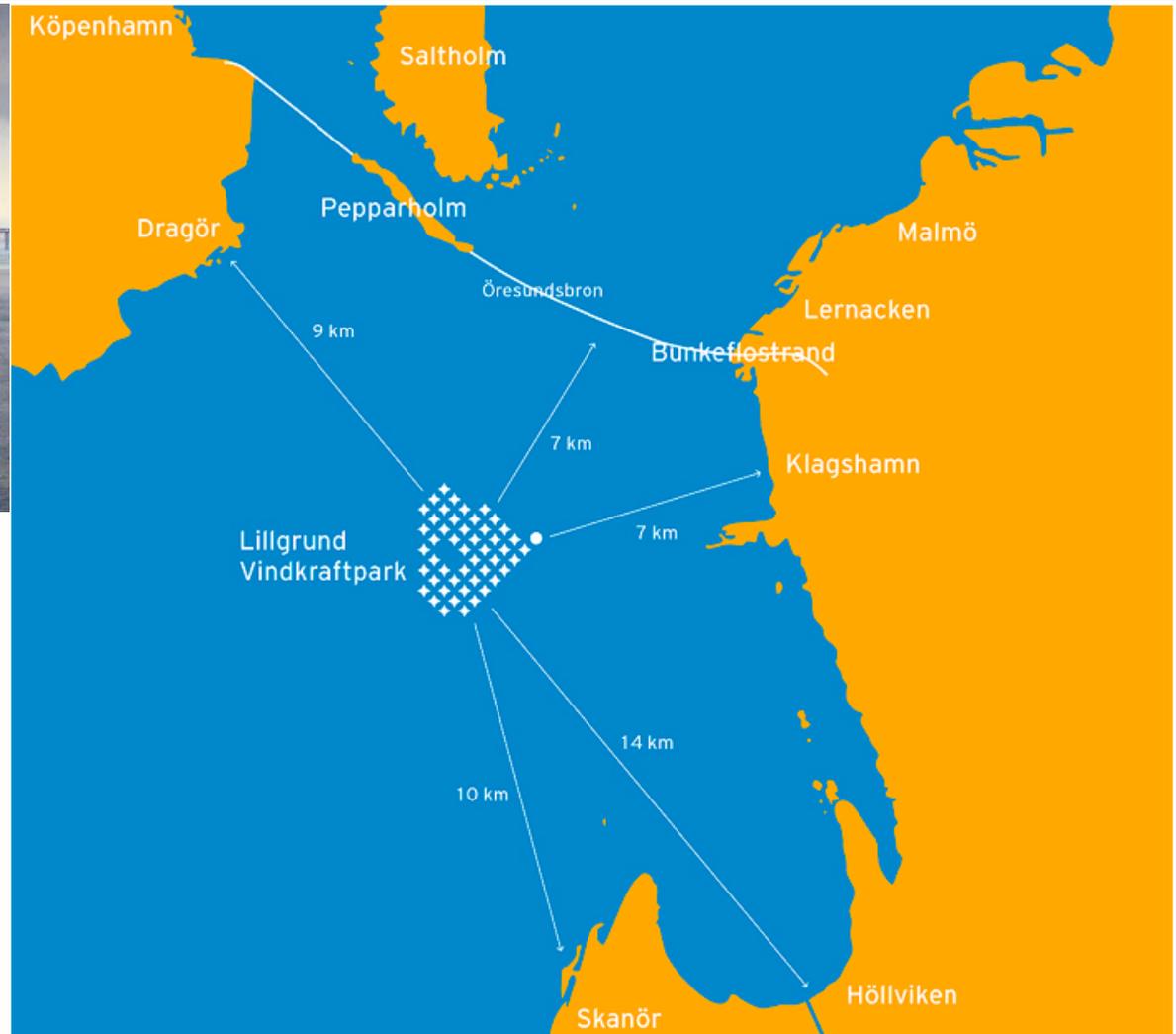


# Lillgrund in operation



## Facts:

- 110 MW - 48 units, 2.3 MW each
- 330 GWh / year
- Investment of SEK 1.8 billion
- Turbine supplier: Siemens
- Foundations supplier: Pihl Hochtief JV



# Vattenfall large scale offshore development

316 MW in operation and more than 2,000 MW in pipeline

## UK Offshore

- UK Government is planning for 30,000 MW offshore by 2020
- Vattenfall Nordic is preparing to take part in the site award process for 3,000 MW

## German Offshore

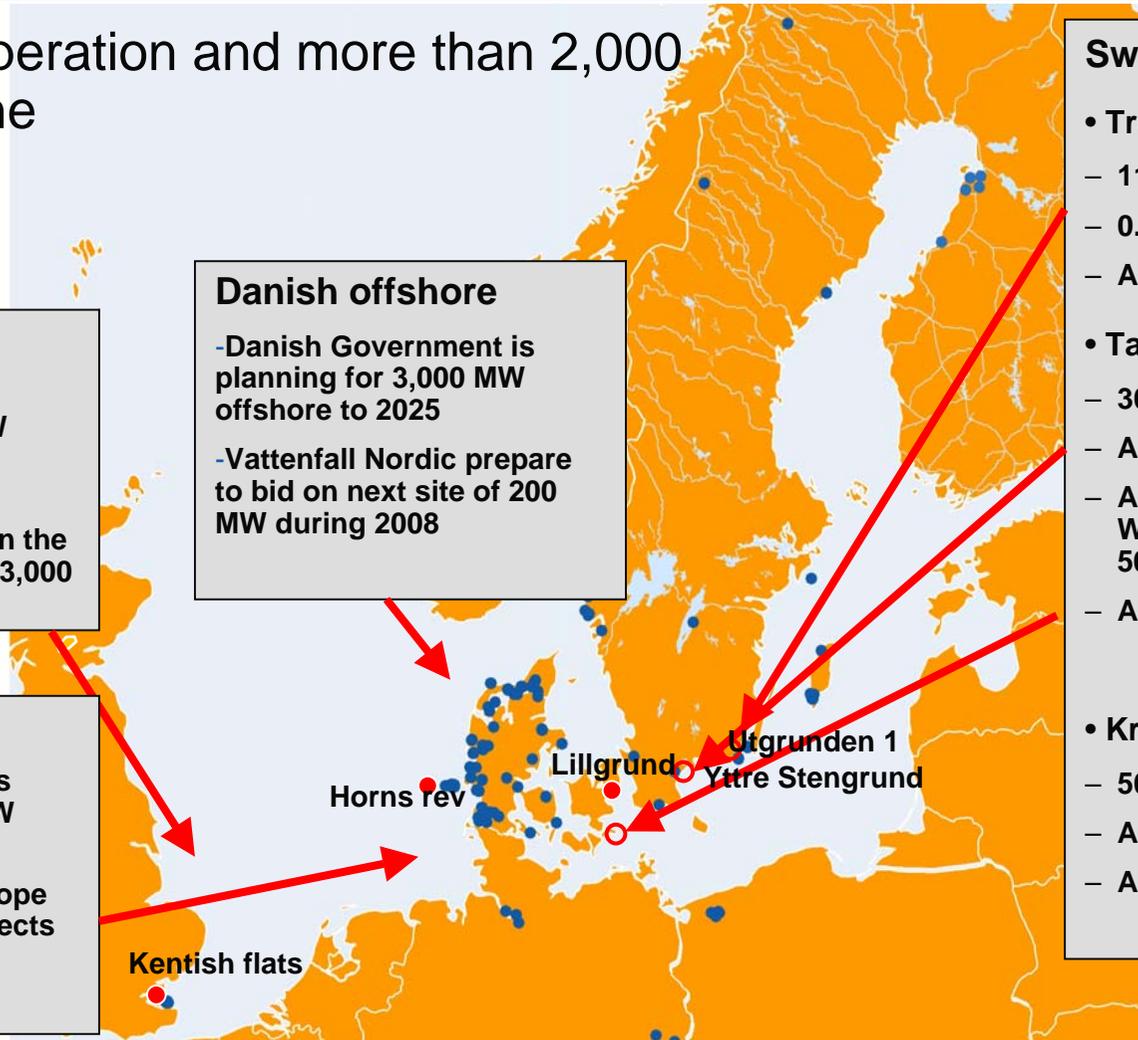
- German Government is planning for 20,000 MW offshore by 2020.
- Vattenfall Central Europe is developing two projects of totally 500 MW

## Danish offshore

- Danish Government is planning for 3,000 MW offshore to 2025
- Vattenfall Nordic prepare to bid on next site of 200 MW during 2008

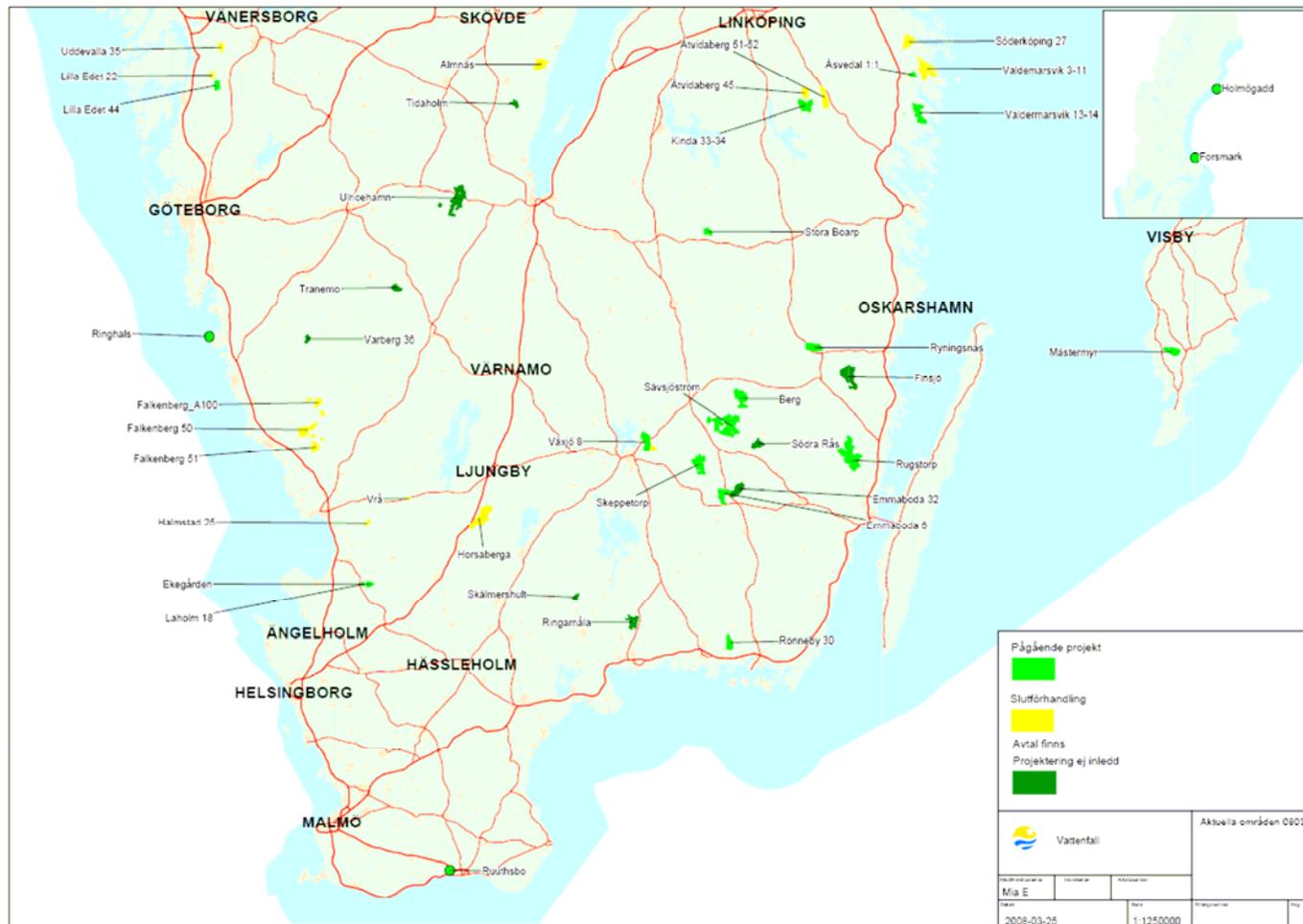
## Swedish Offshore

- Trolleboda
  - 110-150 MW
  - 0.3-0.5 TWh
  - All permits 2008
- Taggen
  - 300 MW
  - Approx. 1 TWh
  - Agreement with Wallenstam regarding 50/50 ownership
  - All permits 2009
- Kriegers flak
  - 500 MW
  - Approx. 1.5 TWh
  - All permits 2009



# Onshore development mainly in Sweden

Currently more than 2,000 MW in pipeline



# Sales activities

# 153 TWh contracted with power intensive industry

During the last year 33 TWh have been signed in new long-term contracts with industrial customers in order to support their capacity requirements and offer stable and competitive electricity prices. Latest large deals:

- Boliden
- Stora Enso
- Smurfit Kappa
- Vargön Alloy
- Outokumpu



# BG Nordic is increasing its retail market share

- Several attractive offers to retail customers
- Strong improvement in CSI for all segments 2008
- The net growth during last 12 months is 70,000 retail customers



Thank you!



# Back-up

## Key data – BG Nordic

<i>Amounts in SEK billion</i>	H1 2008	H1 2007	% Change	LTM	FY 2007	FY 2006
<b>Net sales</b>	26.3	24.6	6.9	48.4	46.7	40.1
<b>External net sales *</b>	26.8	21.8	22.9	49.4	44.4	48.2
<b>EBIT *</b>	10.3	7.0	47.1	15.9	12.4	13.2
<b>Net assets **</b>	92.7	83.7	10.8	n.a.	91.1	81.7
<b>Electr. generation, TWh</b>	50.0	48.1	4.0	93.1	91.1	85.8
<b>Heat generation, TWh</b>	5.9	6.4	-7.8	10.2	10.7	8.5
<b>Employees ***</b>	9 508	9 458	0.5	n.a.	9 489	9 158

\* Excl. intra group transactions

\*\* At the end of the period

\*\*\* Full time equivalents (FTE)

# Key figures - renewable energy generation

<b>Actual June 2008</b>	<b>Wind</b>	<b>Hydro*</b>	<b>Heat</b>	<b>Total</b>
Operating Profit (MSEK)	234.2	109.3	252.5	596.0
Investments (MSEK)	418.3	10.3	609.3	1 038.0
Tangible fixed assets (MSEK)	6 228.8	311.4	5 275.5	11 815.7
Return on tangible fixed assets (%)	7.4	68.6	8.9	9.6
Sold Volume Electricity (GWh)	763	201	263	1 227
Sold Volume Heat (GWh)			2 152	2 152

\* pertains to hydro power that qualifies for electricity certificates in Sweden

