

Sweden

SAFE, GREEN & COOL

your next datacenter location



Investing in your future



Top conditions for datacenter operations

Sweden

1. Low and reliable electricity prices
2. Favorable climate, free cooling at least 8-10 months
3. Excellent communications infrastructure
4. World-leading in heating & cooling systems
5. Green electricity, 60% from renewable sources
6. Green thinking – GDP growth with reduced environmental impact
7. Attractive corporate, real estate and investment tax schemes
8. Inexpensive greenfield and brownfield sites
9. Outstanding ICT skills
10. Security & stability – political, economical, physical

Benefits from locating in Sweden

1. Among the absolutely lowest electricity prices in Europe, today and in the foreseeable future
2. Investment schemes making it possible to lower electricity prices an additional 50%
3. Electricity grid built for heavy, mission critical industries
4. Energy generation mix with the highest renewable profile in Europe
5. A robust national fibre infrastructure with excellent connections to main geographies in Europe including Russia

International investments

- Sweden is one of the most globalized countries in the world, with a foreign direct investment stock accounting to 75% of the country's GDP. The EU average is 46%
- Between 2005 and 2009, foreign companies invested US\$ 108.8 Billion in Sweden
- There are **1,280 US** companies operating in Sweden, employing **99,000** people



Attractive business environment

In global competitiveness elite

Ranking	Country
1.	Switzerland
2.	Sweden
3.	Singapoare
4.	US
5.	Germany
33.	Estonia
36.	Czech Republic
39.	Poland
60.	Slovak Republic
70.	Latvia

Source: Global Competitiveness Index; World Economic Forum, 2010-2011. 133 countries

Technology Readiness

Ranking	Country
1.	Sweden
2.	Luxemburg
3.	Netherlands
4.	Iceland
10.	Germany
24.	Estonia
32.	Czech Republic
34.	Slovak Republic
47.	Poland
51.	Latvia

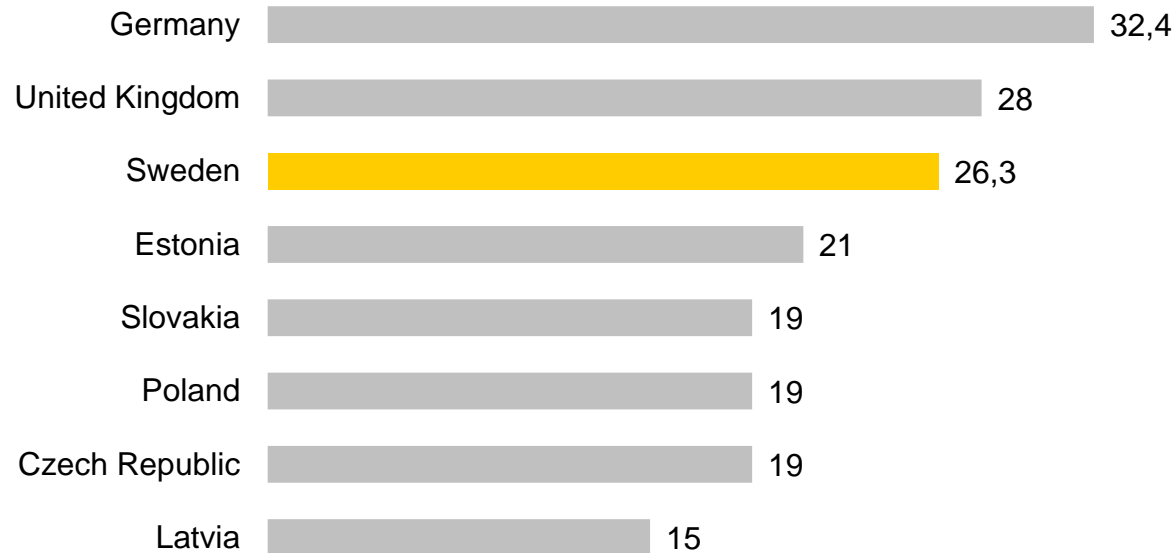
Source: Global Competitiveness Index; World Economic Forum, 2010-2011. 133 countries





Competitive corporate tax legislation

2010, percent



Source: Deloitte, 2010

According to Swedish tax rules, no tax on a datacenter investment is payable until year 7 (based on certain assumptions).

Swedish society is built upon advanced IT usage

Computers per capita

1.	Sweden
2.	US
3.	Norway
4.	Denmark
5.	Switzerland
6.	Netherlands
7.	Canada
8.	Iceland
9.	Finland
10.	Australia

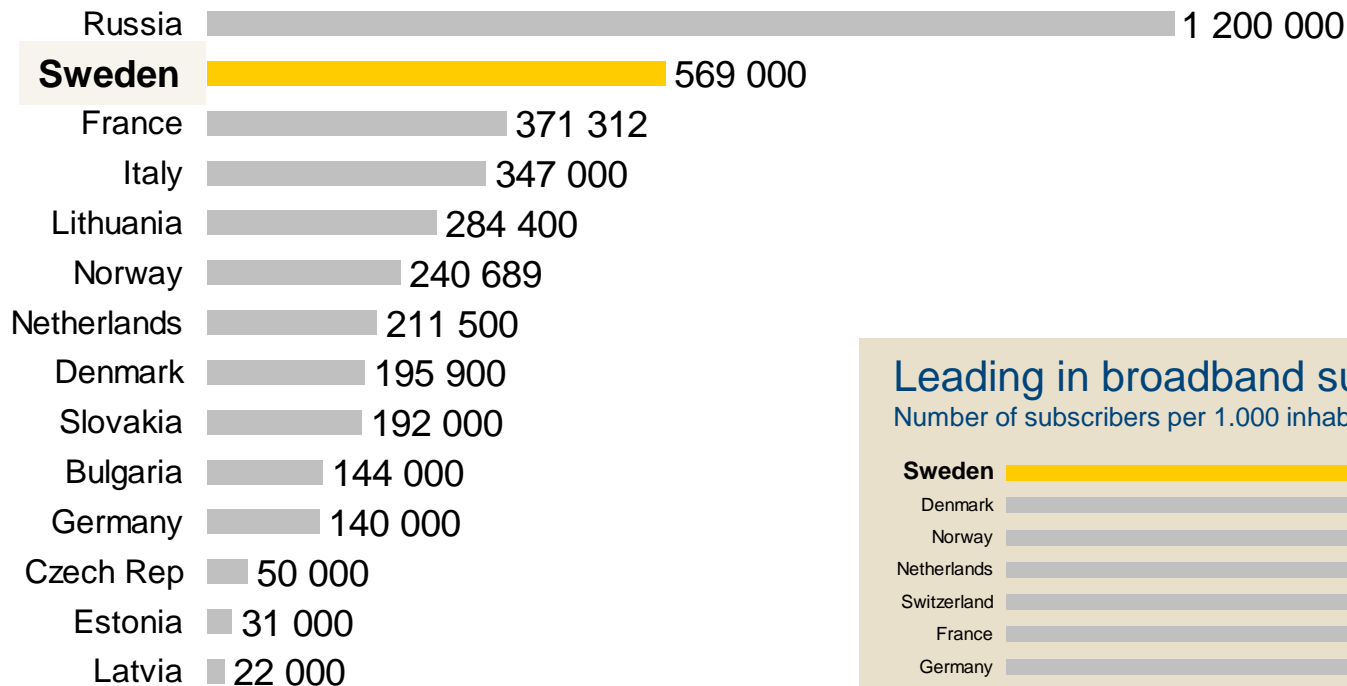
Internet users

1.	Iceland
2.	Sweden
3.	Norway
4.	Denmark
5.	Luxembourg
6.	Singapore
7.	Canada
8.	Australia
9.	Japan
10.	Hong Kong

Source:IMD World Competitiveness yearbook 2010

Top adopter of fiber-to-the-home

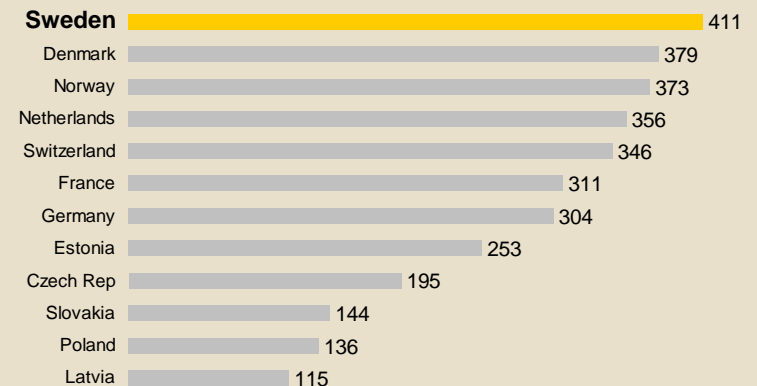
Ranking June 2010, Absolute numbers of subscribers



Source: FFTH Council Europe, 2010

Leading in broadband subscribers

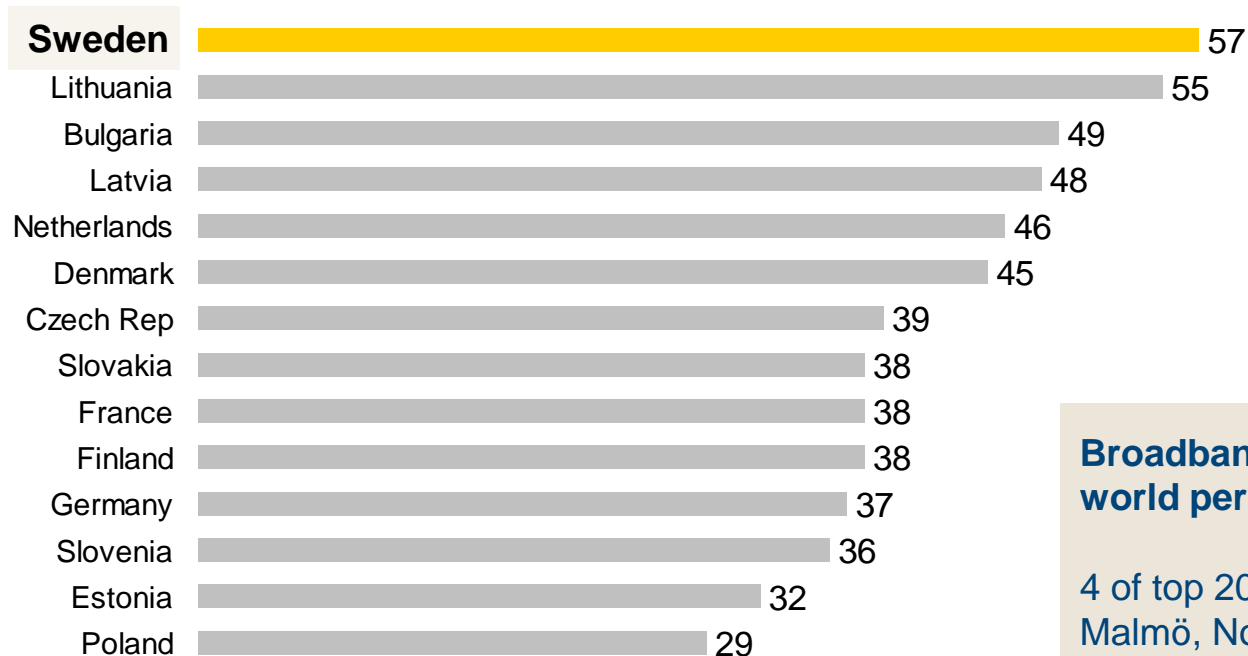
Number of subscribers per 1.000 inhabitants



Source: Global Competitiveness Index; World Economic Forum, 2010-2011.

Best Broadband Quality in Europe

Broadband Quality Score (based on normalized values of download and upload throughput and latency)



Broadband Quality Score in the world per City

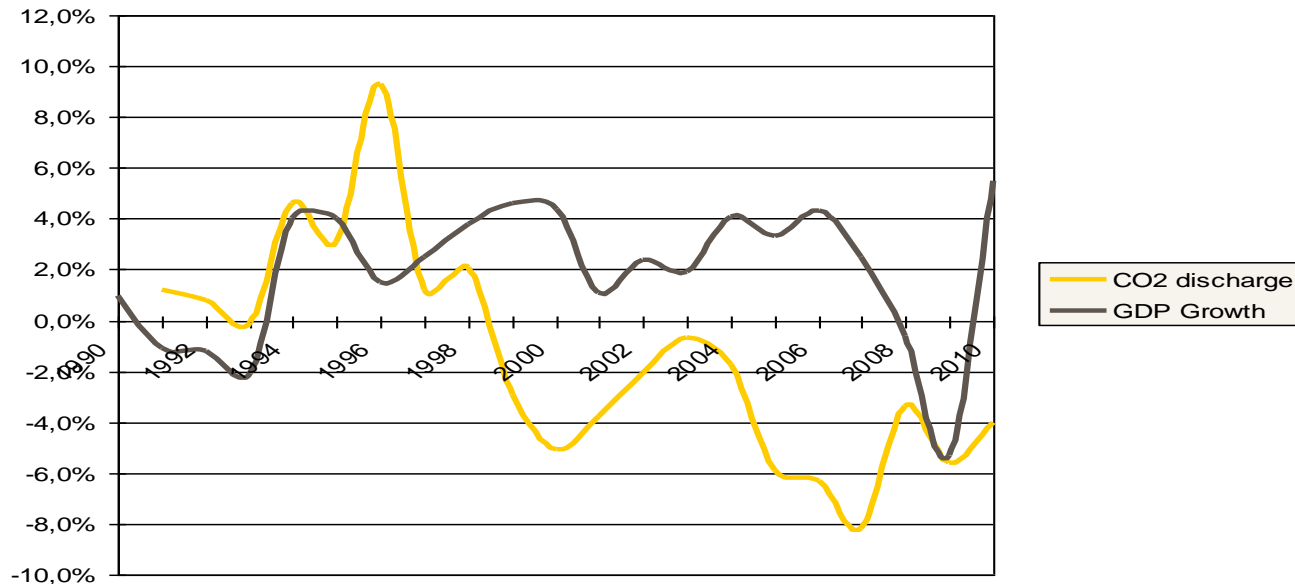
4 of top 20 cities are Swedish;
Malmö, No. 6
Uppsala, No. 8
Stockholm, No. 14
Gothenburg, No 17

Source: Cisco, University of Oxford and Universidad de Oviedo, 2009

Unique position: Economic growth with reduced environmental impact

- 1990 - 2009 GDP grew by 42% while CO₂ emissions were reduced by 17%
- Energy production has nearly doubled. Bioenergy up to 28% of total energy demand.

CO₂ discharge in relation to GDP growth for Sweden



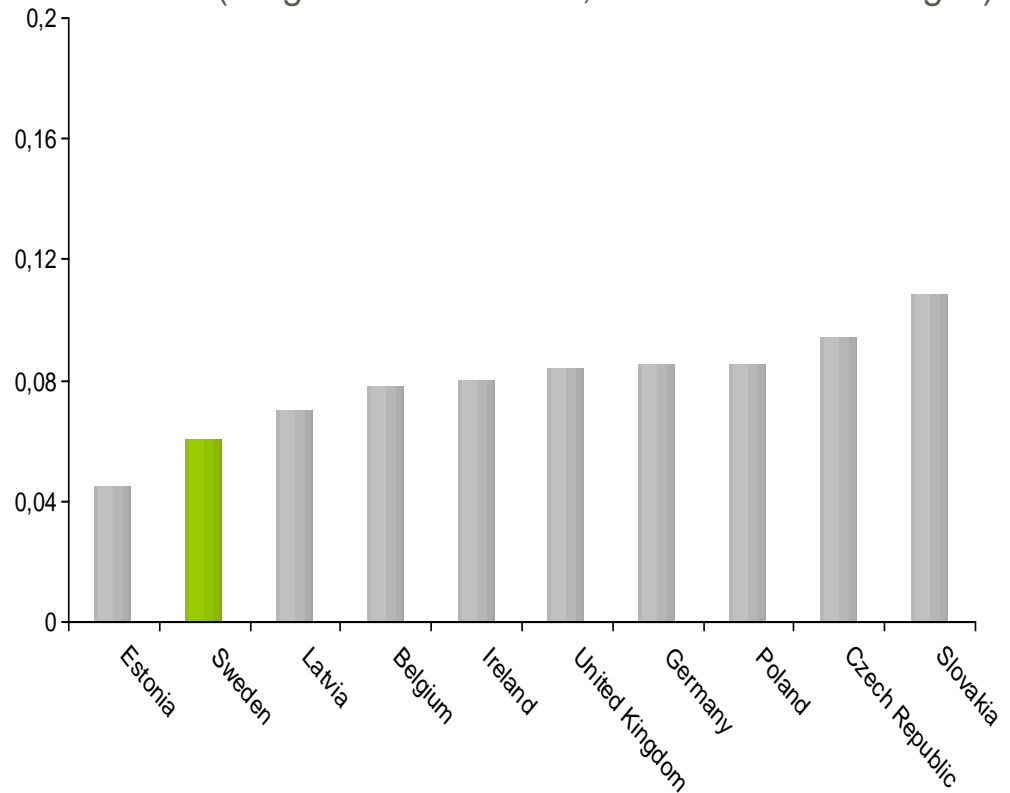
Source: Statistics Sweden 2010 and Swedish Board of Agriculture 2010

Reliable, green & cost-competitive electricity

- Market-driven and deregulated energy production since 1996
- High reliability – redundancy
- Low energy cost for industry

Electricity cost in €/KWh

(Large industrial users, incl. taxes and charges)

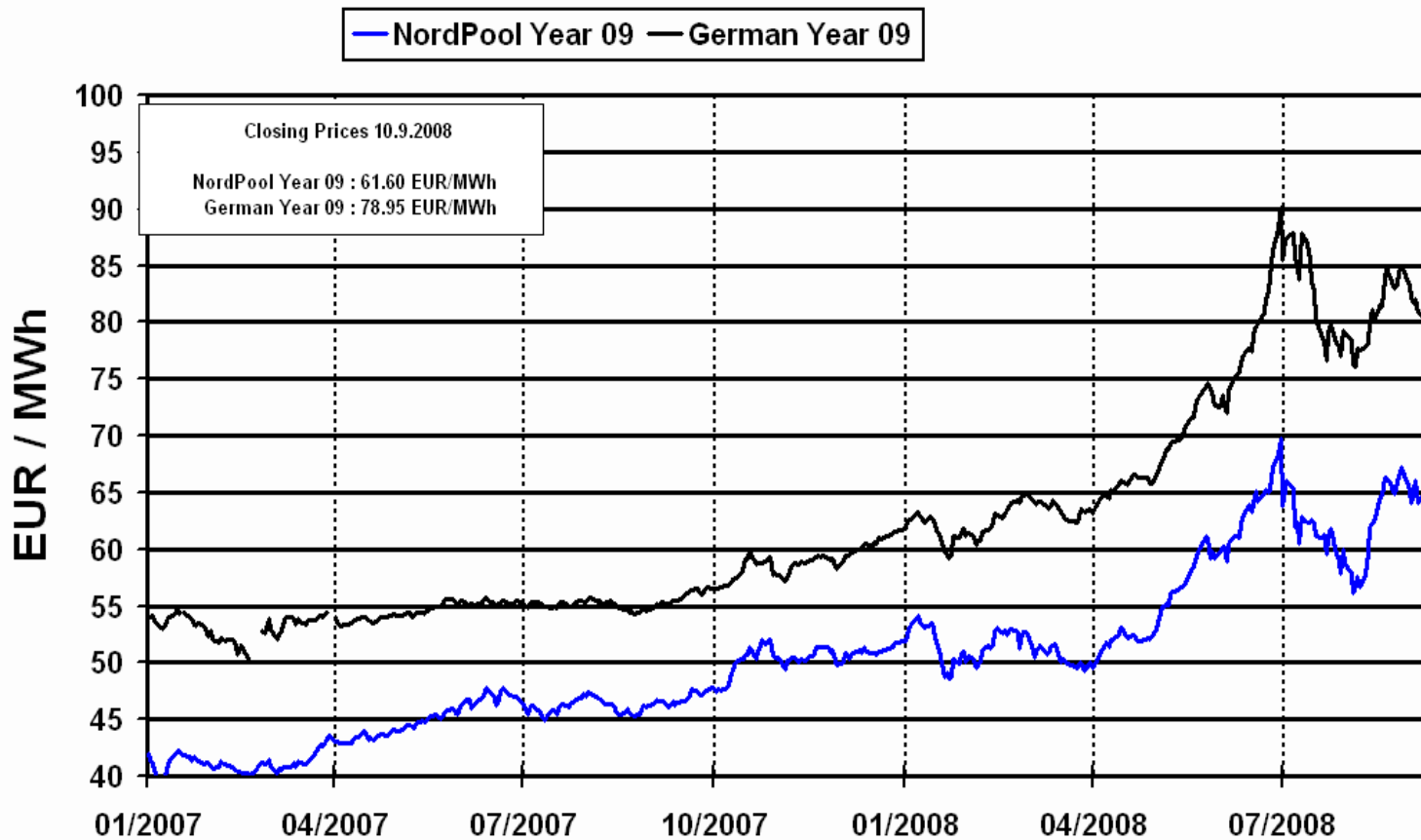


Source: www.energy.eu 2011



Nordic prices will remain low in comparison

Year 2009 Forwards – Nordics vs Germany



Source: Nord Pool 2008

Harmonized and efficient Nordic electricity market

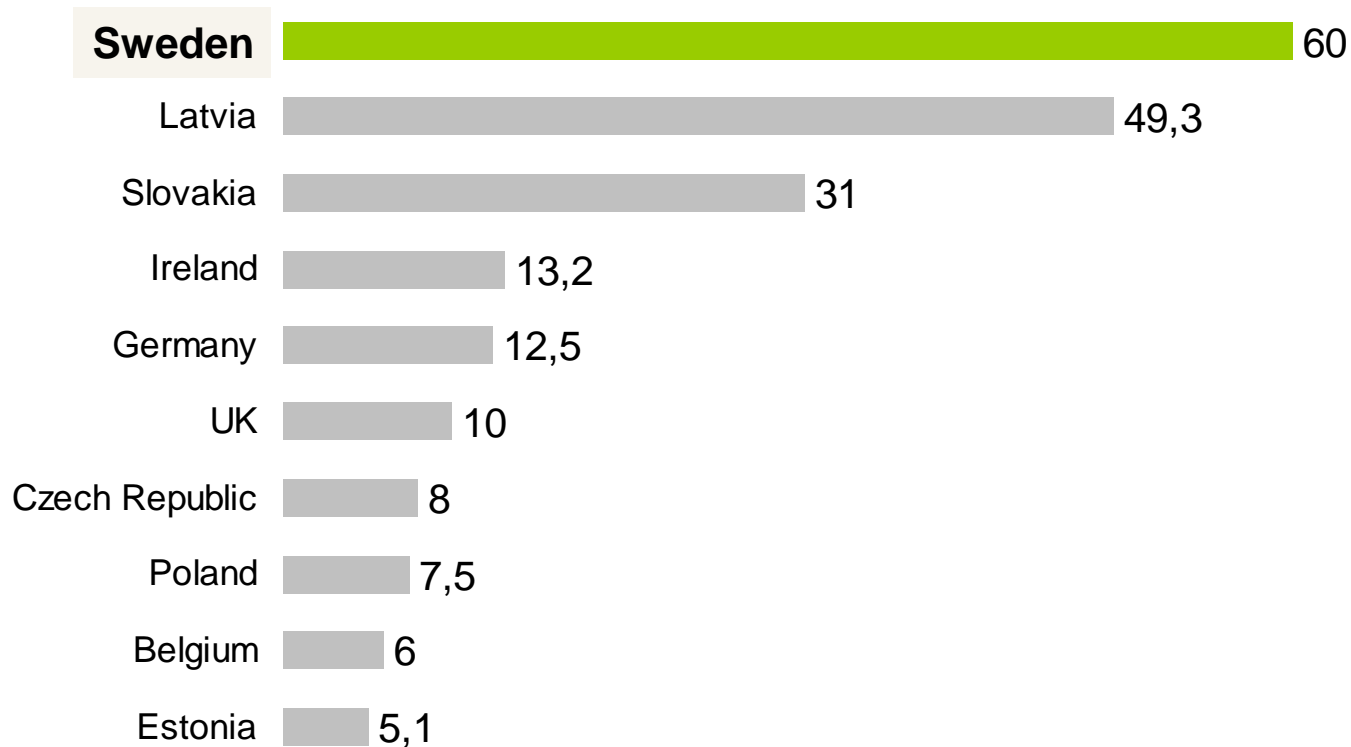
- **Totally deregulated electricity market**
 - Nord Pool – the harmonized Nordic energy exchange
 - Europe's largest market place for physical and financial power contracts. Partly owned by Nasdaq OMX.
- **Energy-intensive companies in Sweden**
 - 10 largest paper & pulp companies consume 25TWh/year
- **Cost-effective energy**
 - Sweden benefits from cost-effective use of hydro electric power plants with low electricity production costs.
 - Nord Pool creates a cost-competitive environment for high intensive energy consumers and puts a pressure on the electricity producers to provide a cost-effective energy production.



Leaders in green electricity

2010, Electricity generated from renewable sources

Percentage of renewable energy in gross electricity consumption

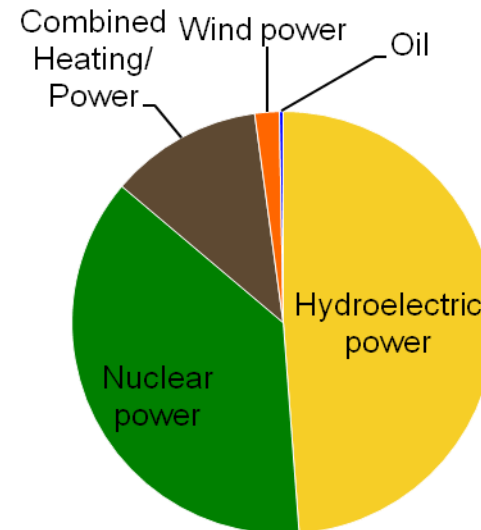


Source: Eurostat

Entirely green electricity production

Production of electricity in Sweden

	2009 (TWh)	2012 (TWh)
Total production	133.4	147.6
Hydroelectric power	65.3	67.2
Nuclear power	50.0	70.3
Combined heating/power	15.6	16.1
Wind power	2.5	5.5
Oil	0.4	0.1
Net export	-2.0	14.2



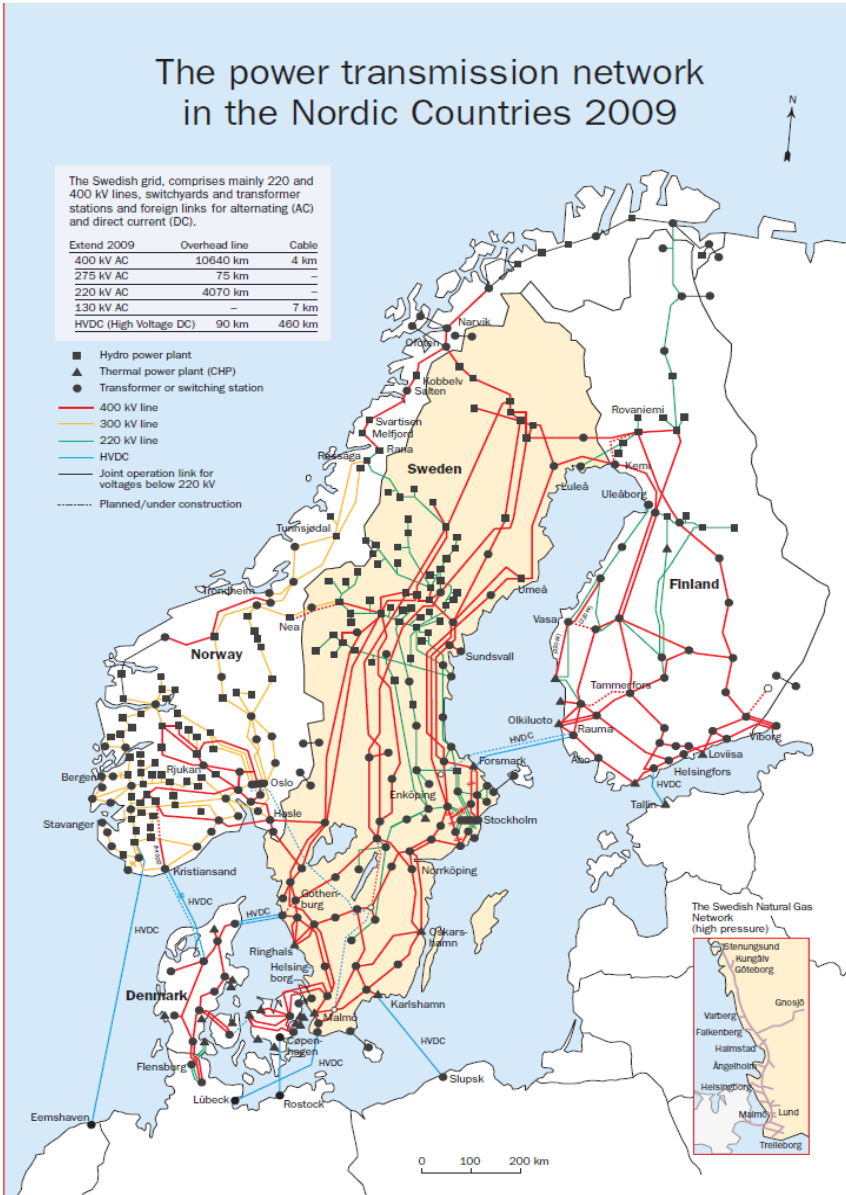
Source: Swedish Energy Agency Fall 2010 "Korttidsprognos"

The power transmission network in the Nordic Countries 2009

The Swedish grid, comprises mainly 220 and 400 kV lines, switchyards and transformer stations and foreign links for alternating (AC) and direct current (DC).

Extend 2009	Overhead line	Cable
400 kV AC	10640 km	4 km
275 kV AC	75 km	-
220 kV AC	4070 km	-
130 kV AC	-	7 km
HVDC (High Voltage DC)	90 km	460 km

- Hydro power plant
- ▲ Thermal power plant (CHP)
- Transformer or switching station
- 400 kV line
- 300 kV line
- 220 kV line
- HVDC
- Joint operation link for voltages below 220 kV
- Planned/under construction



- Sweden, Norway, Finland and Denmark are connected together in the Nordic grid

Electrical grids in Sweden

- National grid
 - 400 kV, 220 kV
 - Svenska Kraftnät
(The Swedish Transmission System Operator appointed by the Swedish Government)
- Regional grid
 - 130 kV, 70 kV, 40 kV
 - 10 different companies
- Local grid
 - 20 kV, 10 kV, 0,4 kV
 - 180 different companies

Continuous investments in future energy

- US\$40 billion committed to investments over the next 10 years
 - Development of electricity production facilities US\$28 billion
 - Investments in the electricity grids US\$14billion
- 2008: investments amounted to nearly US\$5 billion, i.e. 300% increase since 1999

Source: Svensk Energi, SCB



Cost-efficient cooling

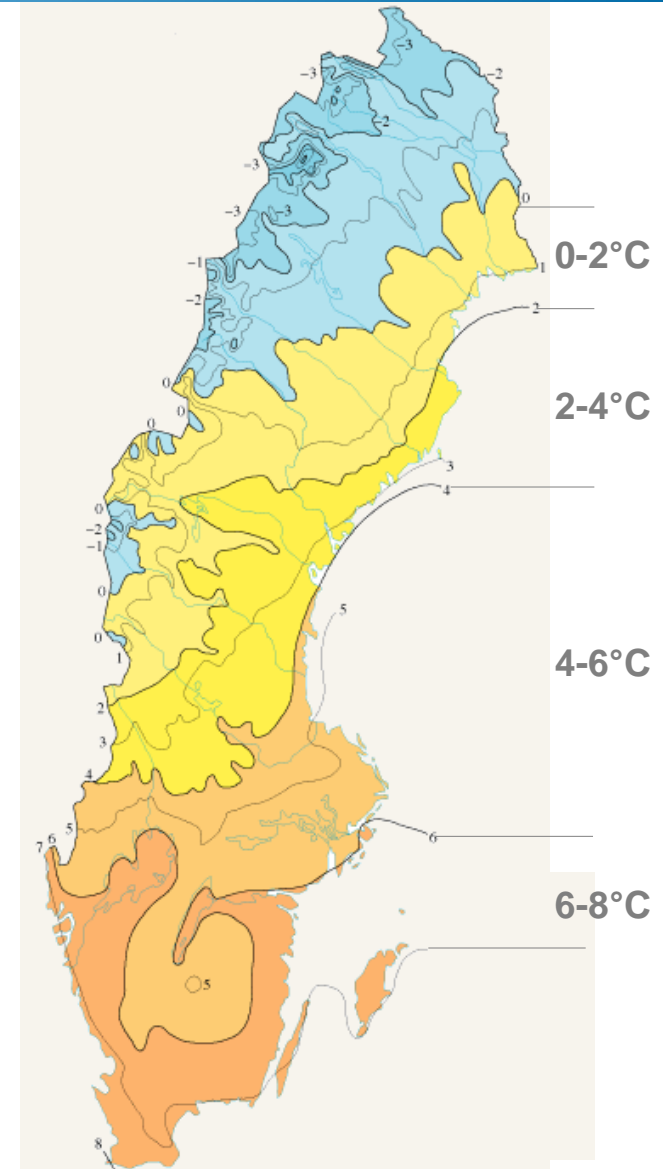
- Climate offers free cooling 8-10 months of the year (below 8°C)
- Inexpensive water, reliably available year round
- Extensive district cooling nets exists
- Innovative cooling by snow and geogeneity stores already in use

*”We have turned off our free cooling system
- reselling & reusing excess heat is greener.”*

Heat recycling since 1978.

Carbon footprint savings 2008: 3,857,000 KWh, 25-30% of total power usage, 167 tons of CO2.

Tieto





TIP 2 – Nordic Region Air-Side Economizer Hour Potential

Outside Air Drybulb Bin °C (°F)	Supply Air Temp °C (°F)	% Time Under Dry Bulb with Favorable Dew Point*						
		Bergen	Goteborg	Helsinki	Oslo	Stockholm	Turku	Uppsala
17,2 (63)	17,8 (64)	80	69	77	76	76	78	77
20,5 (69)	21,1 (70)	94	85	89	89	88	89	89
22,8 (73)	23,3 (74)	98	93	95	96	95	96	96
26,0 (79)	26,7 (80)	99,9	99,7	99,7	99,6	99,7	99,8	99,8
Highest Recorded Dry Bulb Temperature °C (°F)		30,7 (87,3)	31,9 (89,5)	33,1 (91,6)	35,2 (95,3)	34,8 (94,7)	32,4 (90,3)	33,1 (91,6)

*Favorable dew point means no dehumidification would be required to operate at the desired supply temperature. Humidification may be required, depending on design requirements.

ASHRAE Recommended: 18 - 27°C

ASHRAE Allowable: 15 - 32°C

Pioneering district cooling

- already a world leader in district heating



Stockholm

- The world's largest district cooling system – 7,000,000 sqm connected
- 80% free cooling from seawater
- 60 % of all district cooling energy in Wireless Valley (Kista) is used to cool data centers

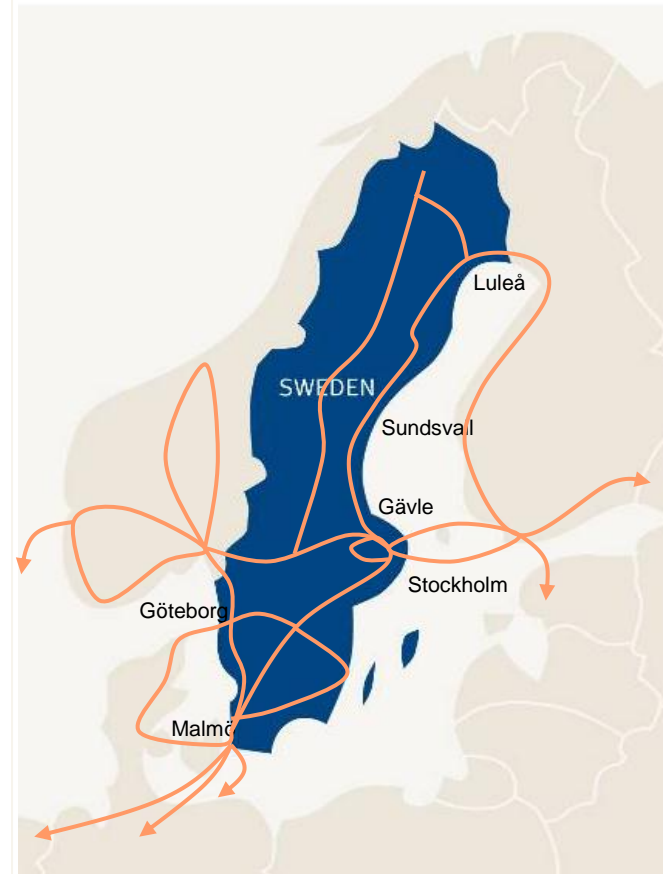
Sweden

- 1992, the first district cooling plant went operational. Today, 30 district cooling plants produce cooling equivalent of 700 GWh
- Trading mechanisms for excess heat and cooling – maximum energy reused
- A number of data centers already operational



Advanced communications infrastructure

- Redundant national coverage through multiple network owners (Teliasonera, TDC, Tele 2, IP-Only, Swedish Rail Authority)
- Total 150,000+ km of fiber optic networks
- 100 dark fiber suppliers
- 12 Swedish IXPs from North to South
- Home of TeliaSonera, the only Tier-1 carrier in Europe
- Up to 80% of all Internet traffic from Russia goes through cables on Swedish territory
 - More than 50 international carriers and service providers
 - Sweden has Europe's fifth highest aggr. peak traffic
 - High capacity network - Stockholm has IXP with Europe's sixth highest aggr peak. traffic with 134 Gbps
- Latency to Amix (Amsterdam): Malmö 7-9 ms, Stockholm 14-16 ms, Luleå 24-26 ms



Broad variety of data centers in Sweden

Enterprise

- IBM
- HP
- Logica
- Ericsson
- Fujitsu Services
- VolvoIT
- Tieto

Intl operators

- Verizon
- AT&T
- BT
- Orange
- Colt Telecom
- Cable & Wireless
- VSNL International
- Global Crossing
- Equanet
- Tripnet

Communications

- TeliaSonera
- TDCSong
- Telenor
- Tele2
- IP-Only
- Bredband2
- Phoneria
- Bahnhof
- Interoute

Co-location

- Telecity
- Interxion
- Sungard
- TeleFortress
- Dataphone Sweden
- DCS.net
- DGC Solutions
- Stokab
- Portlane

Research & education

- National Supercomputer Center in Linköping
- High Performance Computing Center North in Umeå

Grants Possible To Apply For

- **Tax relief for foreign key staff**
 - Sweden offers a special income tax relief to encourage highly skilled people, such as international executives, experts, researchers and others with special skills
 - Taxed on only 75% of income in their first three years

- **Reduced social security contribution**
 - 50% lower rate for people under 26 years

- **Recruitment services**
 - Swedish Public Employment Service offers recruitment services for free



Regional Investment Grants

- Investment subsidies may be granted for investments such as new properties, equipment, and expansion of existing property
- Size of grant is defined as a percentage of total investment cost eligible for investment grants
- Three determining factors:
 - Type of investment and result of the investment
 - Size of company
 - The RDA in which the company invest
- Each application is individually assessed

	Maximum financing share
Type of investment	Large company groups
Machinery, equipment, buildings, etc.	*RDA A 15 %** *RDA B 10 %**

*Regional Development Area

**For investments above 50 million €, certain grants levels applies. Investments between 50 million € and 100 million € applicable to regional investment grants are subject to a grant size of up to 50% of the ordinary levels for regional investment grants for the certain investment.

DEVELOPMENT AREAS IN SWEDEN



Fees, taxes and customs duties

Imports of servers and other electronic equipment

- Sweden does not levy any customs duties on servers or other electronic equipment when imported to Sweden

Recycling fee on electronic equipment

- Sweden does not levy any recycling fee on servers or other electronic equipment

Personal property tax

- No personal property tax in Sweden

Depreciation of servers

- According to Swedish legislation, the accounted value of servers can be fully depreciated within three years where the cost can be off-set to lower the profit subject to corporate tax

VAT

- Swedish VAT is based on an input/output system, generally granting full credit in every line until (but not including) the final consumer
 - There is no sales tax in Sweden
 - Swedish VAT should not be compared to US sales tax

Low property taxes

- 0.5% in property tax
 - National level – No regional or local property tax
- Based on the property's assessment value
 - Supposed to correspond to 75% of fair market value of the property
 - Based on historic data of sales of properties
 - 3 determining factors for calculating assessment value
 - Value zone where the land property is located
 - Interior allocation of the building (office, server room, maintenance, etc)
 - Size of land and interior allocations building
- Actual building value and equipment inside building is not relevant
- There is no personal property tax in Sweden

Construction costs

Sweden has significantly lower construction costs than its neighboring countries.

Example: a high-standard warehouse/factory (Norway: 244\$/Sqf, Sweden: 127\$/Sqf).

Example of datacenter property taxes



Verizon data center

- Central location in Stockholm
- Annual property tax: SEK 435,000

Greenfield data center site

- Northern Sweden close to larger city
- Annual property tax: SEK 56,000 - 200,000
- Calculations
 - Building size: 130,000 sqf
 - Land size: 75 Acres

Low Effective Tax Rate

- The effective cash tax rate for a Swedish datacenter may be substantially lower than 26.3% (nominal corporate income tax)
 - Accelerated tax depreciation
 - Any asset will therefore be fully depreciated within 5 years for tax purposes
 - Tax allocation reserves
 - 25% of the taxable income for 6 years
 - Loss carry forward
 - Companies may carry forward losses indefinitely to offset future profits in the business



Other Swedish tax benefits

- Favorable holding regime: Income from dividends and capital gains on shares are generally tax exempt
- Practically no withholding tax on dividends, interest and royalties
- Sweden has an extensive network of unilateral tax treaties which is essential to avoid double taxation for international businesses
- The Swedish Ruling Board provides binding advance tax rulings on companies' tax strategies

Attractive corporate tax package

	Sweden	The Netherlands	Belgium	Finland	France	United Kingdom	Germany
Tax rate	26.3 %	25.5/23/20 %	24.98/ 33.99 %	26 %	34.4 %	28 %	App. 30 %
Effective Corporate Tax rate (source: AGN)	25.02 %	24.92 %	38.22 %	26.59 %	41.17 %	36.03 %	31.75 %
No tax on dividends	Yes	Yes	"Yes", 1.7 %	Yes	Yes	Yes	"Yes", App. 1.5 %
Tax free capital gains	Yes	Yes	Yes	Yes	Yes, App 1.7%	Yes (for substantial holding)**	"Yes", App. 1.5 %
Group consolidation	Yes	Yes	No	Yes	Yes	No	Yes
Deductibility of interests	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No thin cap rules	Yes	No	No	Yes	No	No	No
No or low withholding taxes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No capital duty	Yes	Yes	No	Yes/No (depends)	Yes	Yes	Yes
Extensive tax treaty network	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Fact check: DLA Nordic



Available site offerings

- Information about existing sites on request
- Twenty greenfield sites available with short notice, more can be generated on demand
- Data center facilities ready to use
- For extra high security, former military rock shelters for sale or long term lease

www.investsweden.se/datacenters



Reference data centers

- IBM – district cooling, trading excess heat, heating offices
- Sungard – PUE 1.3 on commercial terms, 100% wind power
- Phonera – 65% lower energy consumption using ground-based cooling
- Volvo IT – sea water cooling
- Tieto Cave – former underground air base, ultra secure
- Bahnhof – “fit for a James Bond villain” rock shelter
- European Spallation Source (ESS) - planned 40 MW facility for scientific research, world’s most powerful and climate neutral neutron source.