

Saxony

Inhabitants: 4,192,801 Area: 18,415 km²

Energy & CO₂ figures

Primary energy consumption: 175 TWh/y

Resulting in: 47.9 Mt CO₂/y¹ or 11.4 t CO₂/y per capita (2008)



Energy profile & situation

Lignite main energy carrier: large natural resources

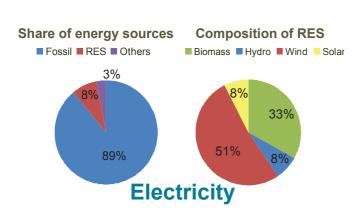
Large lignite power plants (exports 1/3)

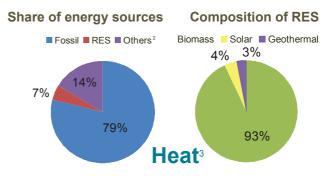
RES play increasing role, 2008 14.4% of electricity

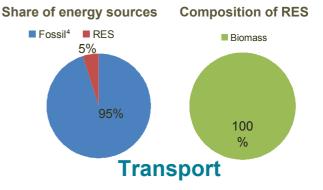
Share of district heating higher than in Germany

Extension of high voltage grids for distribution of decentralised

produced energy







Energy goals & challenges⁵

23,4% less CO_2 emissions (2006 \leftrightarrow 2020) Share of RES in electricity to 24% 2020 (2008: 14.4%)

Increase CHP in electricity from 20% to 30 % in 2020

Implement the 300 measures from Action Plan Climate & Energy

Affected by population decrease (some areas >20%)

Energy policies

Renewable energy sources act / EEG (DE) Saxon Climate Protection Programme (2001) Saxon Action Plan Climate & Energy Saxon Directive Energy & Climate Protection/ **RL EuK2007**

⁵ Saxony's climate and energy goals are currently unde revision and will be updated beginning of 2012. More information here: www.smul.sachsen.de









Source: LfULG Saxony

² District heating and electricity ³ Figures for Germany 2008, source: <u>www.unendlich-viel-</u>



Kronoberg (Smaland)

Inhabitants: 180,000 Area: 9,430 km²

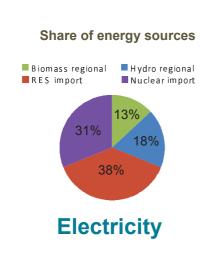
Energy & CO₂ figures

Primary energy consumption: 6.4 TWh/y Resulting in: 596 kt CO₂/y or 3.3 t CO₂/y per capita (all figures from Kropoberg county 2008)

(all figures from Kronoberg county 2008)

Energy profile & situation

- Biggest part of energy from RES, i.e. 54% or 3.6 TWh/y mainly biomass (heat) and hydro (electricity)
- · Many nearby district heating plants with small grids
- · Two of the main district heat plants have CHP and district cooling



Share of energy sources **Composition of RES** ■ Biomass ■ Others Fossil RES 91% 91% Heat Share of energy sources **Composition of RES** ■ Fossil ■ RES Biomass 5% 100% 95% **Transport**

Energy goals & challenges

Targets for 2010:

- 10% less electricity use (1995 ↔ 2010)
- Reduce CO₂ emissions to 3.5 t/y per capita
- Biomass contribution at least 2 TWh/y
- Reduction of emission in transport stays a challenge
- Increase CHP in the medium size DH
- · Big wind and hydro potentials

- · NO OIL! Fossil free region
- 2030 Kalmar,
- 2050 Kronoberg
- · Regional Energy Strategy in Kronoberg











Emilia-Romagna

Inhabitants: 4,395,569 Area: 22.123km²

Energy & CO₂ figures

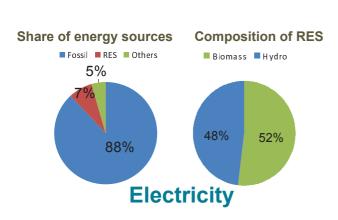
Primary energy consumption: 160 TWh/y Resulting in: 40,580 kt CO₂/y

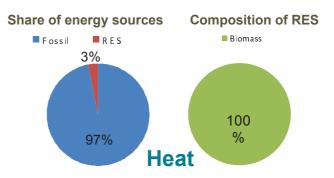
or 9.2 t CO₂/y per capita

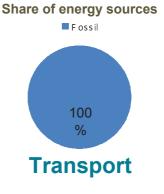


Energy profile & situation

- RER is using around 160 TWh/a mainly produced from oil (31%) and natural gas (62%), 6% from RES
- Natural gas infrastructure is very well developed
- · Reconversion of thermal electric power plants
- CHP is growing since 2006







Energy goals & challenges

- CO₂ emissions reduction is the challenge, focus on transport, existing buildings and EE in industry
- Upgrading of energy net for distributed generation
- Development of infrastructure for electric vehicles
- Internal production of natural gas decreasing
- Research in CCS
- Achieve social acceptance for RES and grid extension

- · Energy Framework Law
- Regional Energy Plan (REP)
- · Currently new objectives are elaborated and upgrading of REP











Haute-Savoie

Energy & CO₂ figures

Primary energy consumption: 134 TWh/a

Resulting in: 41,000 kt CO₂/y or 6.8 t CO₂/y per capita

(2006, all figures from Rhone-Alpes)

Inhabitants: 706,708 (HSA)

6m (Rhone-Alpes)

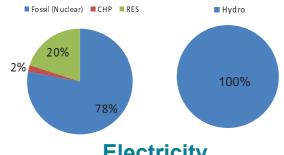
Area: 4,388 km²

43,698 km² (Rhone-Alpes)

Energy profile & situation

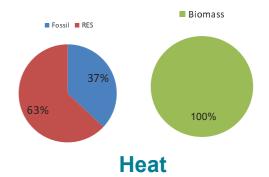
- · Many figures are just available for the Rhone-Alpes region
- In Rhone-Alpes 110 TWh/y of electricity (3/4 from nuclear energy) ca. 20% is coming from RES (hydro), 2% from CHP
- Heat is produced with electricity, just minor production in the region based on RES (wood, solar, biogas)
- · Mountainous region with limited potential for: public mobility infrastructure such as trains
- developing wind energy
- Increasing (urban) population

Share of energy sources **Composition of RES**



Electricity

Share of energy sources Composition of RES



Energy goals & challenges

- Two main energy developments are supported:
- → energy from wood and
- → biogas from cheese factories
- → Training of decision makers on urbanisation and energy planning
- Rhone-Alpes regional goals:

2020: -20% CO₂; +20%EE; 23% RES

- Haute-Savoie Energy Programme
- Haute-Savoie Climate Plan
- Policies are developed to reduce the greenhouse gas emissions by reducing energy consumption and development of RES









Lower Silesia

Inhabitants: 2,884,248 Area: 19.946 km²

Energy & CO₂ figures

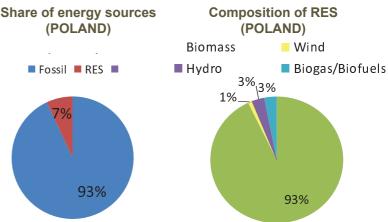
Primary energy consumption: 1,149 TWh/y resulting in 402.000 kt CO₂/y or 10.3 t CO₂/y per capita

(National Figures for Poland 2007/8)



Energy profile & situation

- · No detailed figures are available
- Main energy source is coal (lignite, coke and coke gas)
- Mainly traditional heat / power plants, but also small CHP plants (export 1/3)
- Primary energy consumption 40% lower than EU-15



Potentials & ideas

- 56 wind power plants of a total of 2500 MW power and 200 smaller plants
- Upgrade existing and build more efficient coal heat/power plants
- Huge potential for geothermal energy
- EE in Poland 3 times lower than in old EU-MS

Challenges

- · Currently the large deposits of brown coal do not encourage wider use of RES
- Investment in wind energy is difficult for formal reasons:
 - Complex documentation
 - Agreement with energy supply provider needed beforehand
 - Money deposit demanded

National goals & policies

- · Energy policy of Poland up to 2025 with main goals:
 - **Energy security**
 - Competiveness and EE
 - Reduction of CO₂ by increasing
 - Share of RES (mainly biomass)
- RES share of 15% by 2020, 20% by 2030
- 10% RES in transport: biofuels

- Regional Development Strategy
- Sustainable Development and Environmental Protection Programme
- Energy Strategy





