

Coal as a raw material in a sustainable energy system – how do we make it possible?

Introduction

Supply and use of coal in an international perspective

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SVENSKA KOLINSTITUTET

The Swedish Coal Institute

Members

- Energy companies
- Industries
- Fuel traders
- Research institutions

Staff

- Board of 8 persons from member companies
- CEO on part time



The Swedish Coal Institute

Our (recent) activities:

- Monthly news letter: **Kol Nytt**  SVENSKA KOLINSTITUTET
- Seminar: CSR Guidelines for coal-buying companies
- Study Tour: Nordjyllandsværket, Aalborg
- Annual meeting: Climate work from three perspectives

The Swedish Coal Institute

- Member of Euracoal (EUROpean Association for COal And Lignite)
- Associated member of World Coal Institute
- Nordkol: Informal network of Nordic coal parties
- Home page: www.kolinstitutet.se (in Swedish)



Role of coal in world wide energy supply

	<i>Of total energy</i>	<i>Of electricity</i>
World	26 %	40 %
Europe	18 %	30 %
Sweden	5 %	0,3 %

Sweden´s share of world´s coal use: 0,05 %

Sweden´s share of world´s population: 0,15 %

Sweden´s share of worlds electricity: 0,75 %



Supply and use of hard coal from an international perspective

- China by far the biggest coal economy
 - 3 000 million tonnes (world's total 6 000 million tonnes)
 - net importer 2009 (approx. 100 million tonnes)
- Australia biggest coal exporter (250 million tonnes)
- Japan biggest coal importer (185 million tonnes)
- Only 15 % of world's coal is traded internationally
- Coking coal 12 % of world's hard coal (Sweden 75 %)



Supply and use of hard coal from an international perspective

Most important coal suppliers (2008)

- China
- USA
- India
- Australia
- Indonesia
- Russia
- South Africa



Supply and use of hard coal from an international perspective

Most important coal users (2008)

- China
- USA
- India
- Japan
- South Africa
- Russia
- South Korea



Supply and use of hard coal from an international perspective

Most important coal exporters (2008)

- Australia
- Indonesia
- Russia
- USA
- Colombia
- South Africa



Supply and use of hard coal from an international perspective

Most important coal importers (2008)

- Japan
- South Korea
- Taiwan
- India
- Germany
- United Kingdom
- (China most likely 2nd biggest 2009)



Supply of hard coal in EU

Hard coal supplies, million tonnes 2009

- Poland 77,5
- United Kingdom 17,9
- Germany 15,0
- Czech Republic 11,0
- Spain 9,4
- Romania 2,2
- Bulgaria 2,0

Total EU-supplies:

135 million tonnes

Imports 2009:

183 million tonnes

Norway 2009:

2,6 million tonnes
(Svea, Svalbard)



Supply of lignite (brown coal) in EU

Lignite supplies, million tonnes 2009

- Germany 169,9
- Greece 64,8
- Poland 57,9
- Czech Republic 45,6
- Romania 27,4
- Bulgaria 25,1
- Hungary 9,0
- Slovenia 4,4
- Slovakia 2,6

Total EU-supplies:

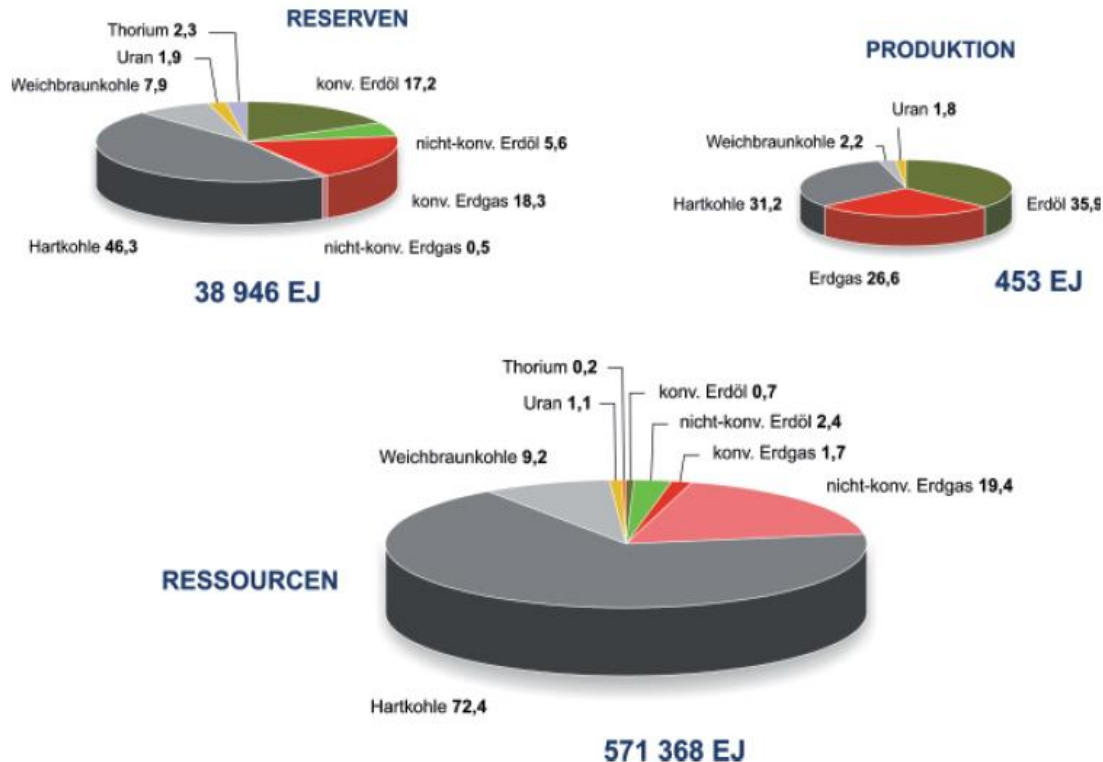
407 million tonnes
(approx. 40 % of
world supplies)

No imports

(no international
trade)



Reserves and Resources



Anteile der einzelnen Energierohstoffe an der Förderung, den Reserven und den Ressourcen der nicht-erneuerbaren Energierohstoffe Ende 2008

Source: Bundesanstalt für Geowissenschaften und Rohstoffe, December 2009



Reserves and Resources

”Remaining life times” (calculated from previous slide).

- Today's technologies and today's consumption
- Rough figures to give an overall view of non renewables

<u>Fuel</u>	<u>R/P-ratio (years)</u>	<u>R+R/P-ratio (years)</u>
Oil (conv.)	40	65
Coal	130	3050
Lignite	300	5600
Natural gas (conv.)	60	140
Uranium	90	850

Source: Bundesanstalt für Geowissenschaften und Rohstoffe, December 2009



Conclusions

- Coal is today used more than ever
 - Coal resources are (almost) abundant
 - Coal will still be used for centuries
 - Coal and Climate need to coexist
- Sweden though will remain a low-coal economy

