

ENERGY IN SWEDEN 2007

OH-pictures, figure 1-64

Figure 1: Change in carbon dioxide emissions within the EU and OECD states, 1990-2004

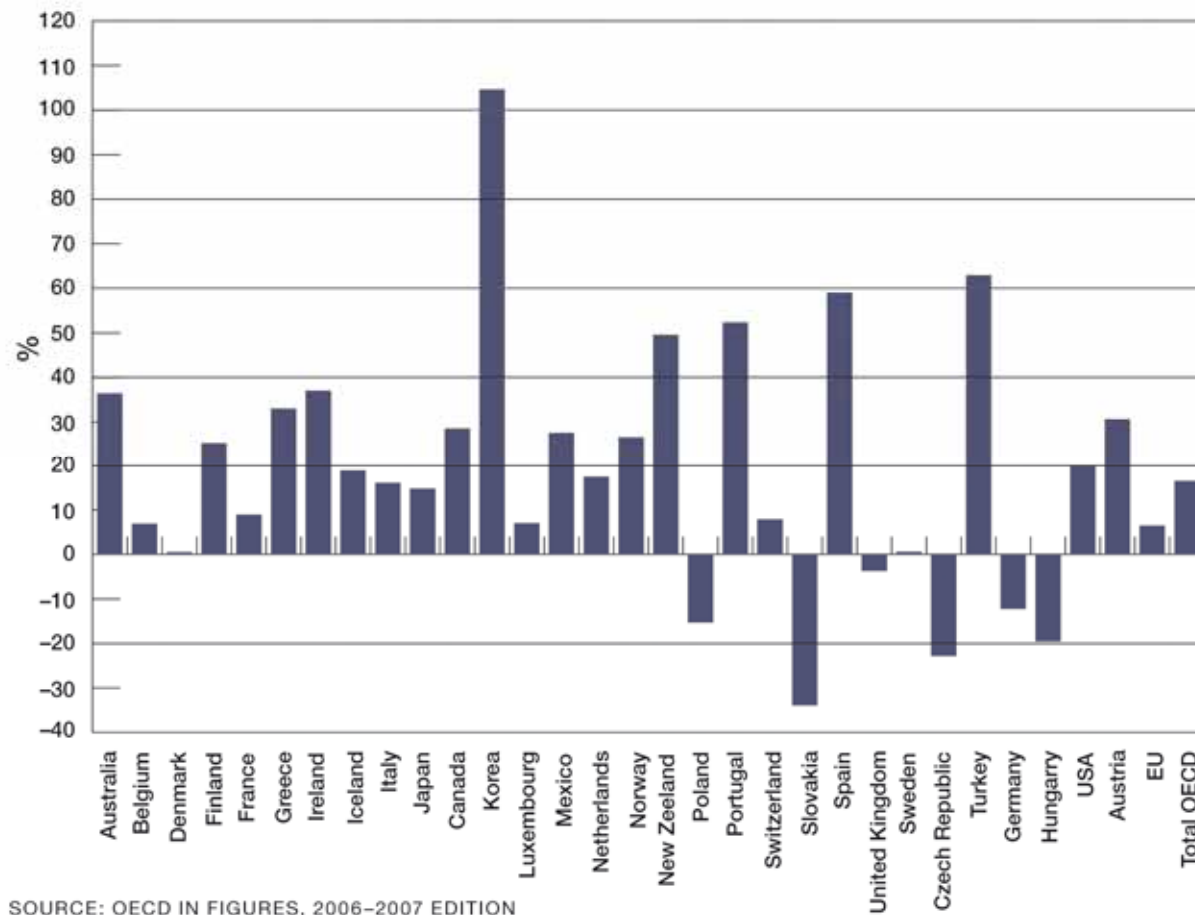
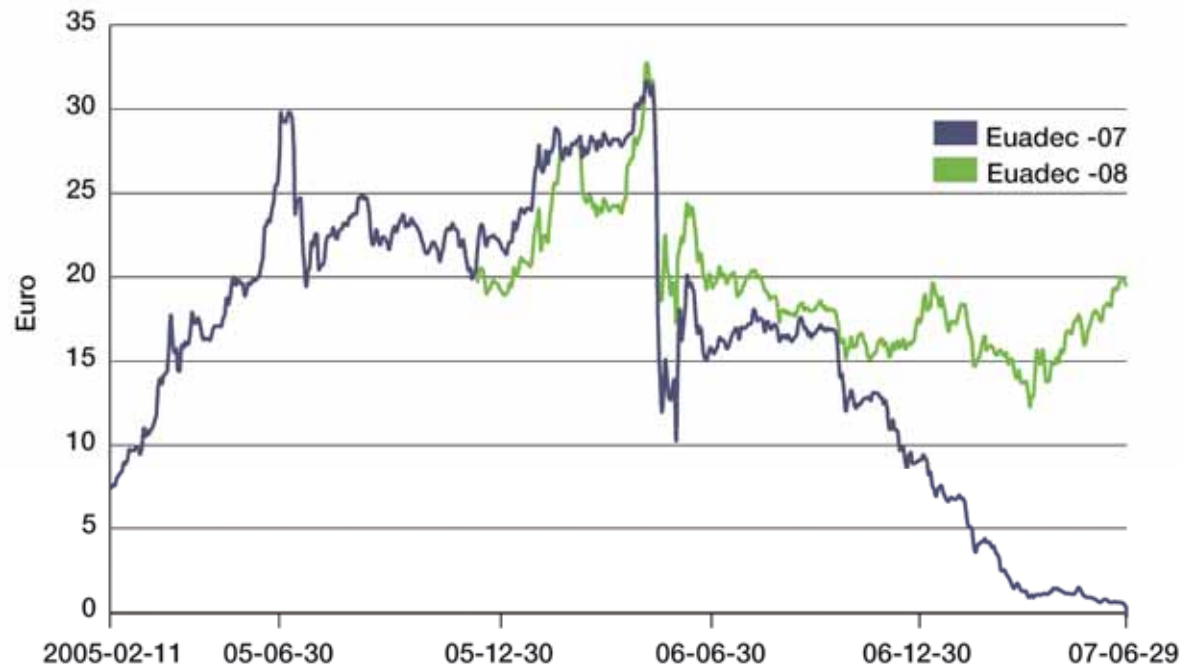


Figure 2: Prices of EU emission allowance units, 2005-2007



SOURCE: NORD POOL'S FTP SERVER. PRICES FOR EUADec-07 AND EUADec-08

Figure 3: Carbon dioxide emissions in Sweden, 1980, 1990-2005

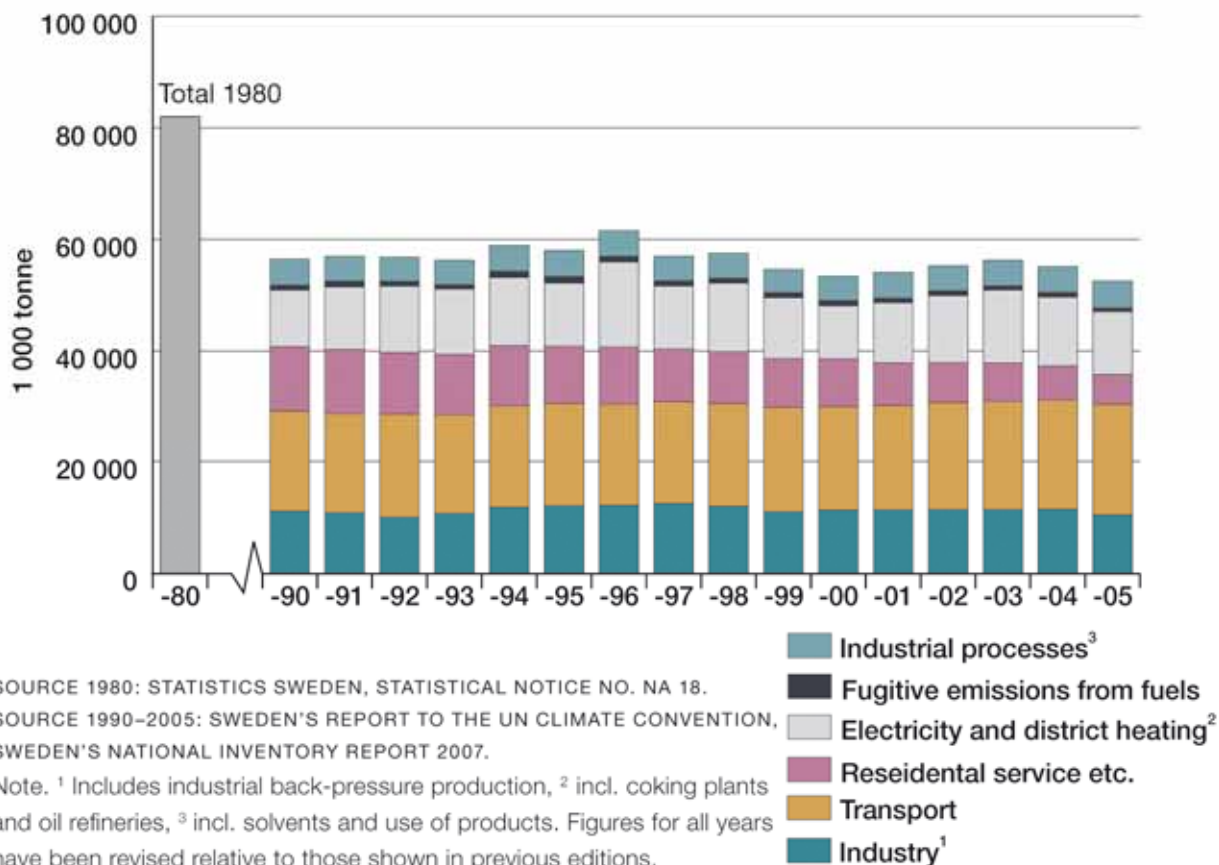
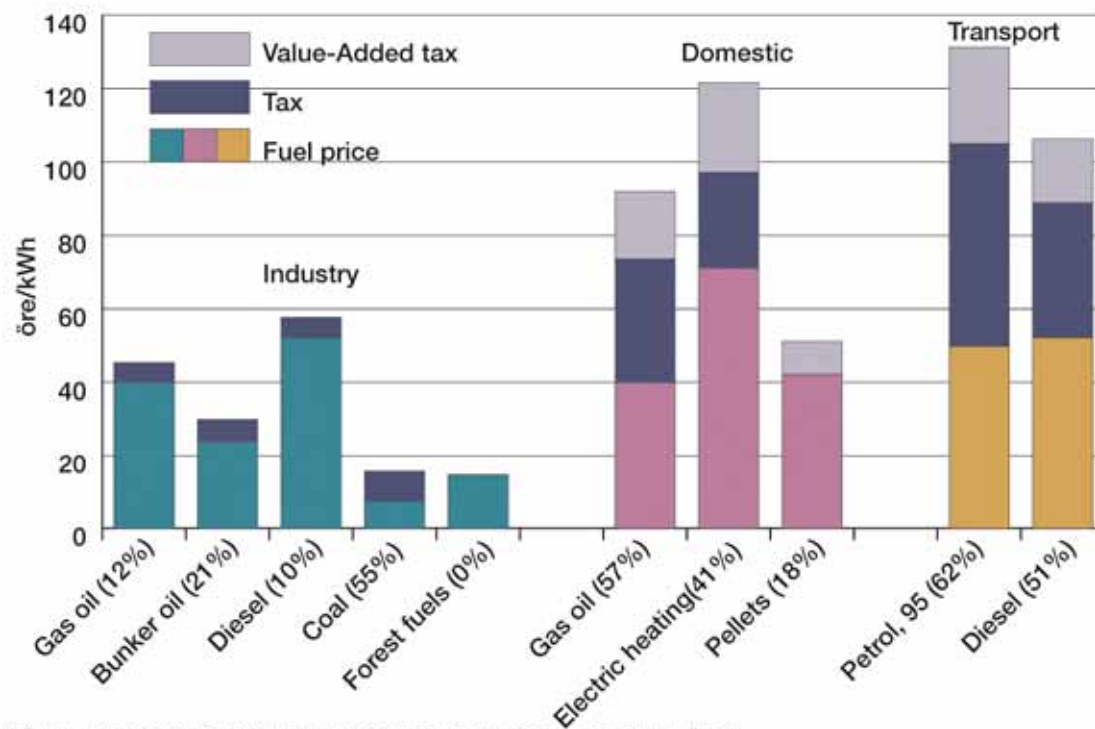


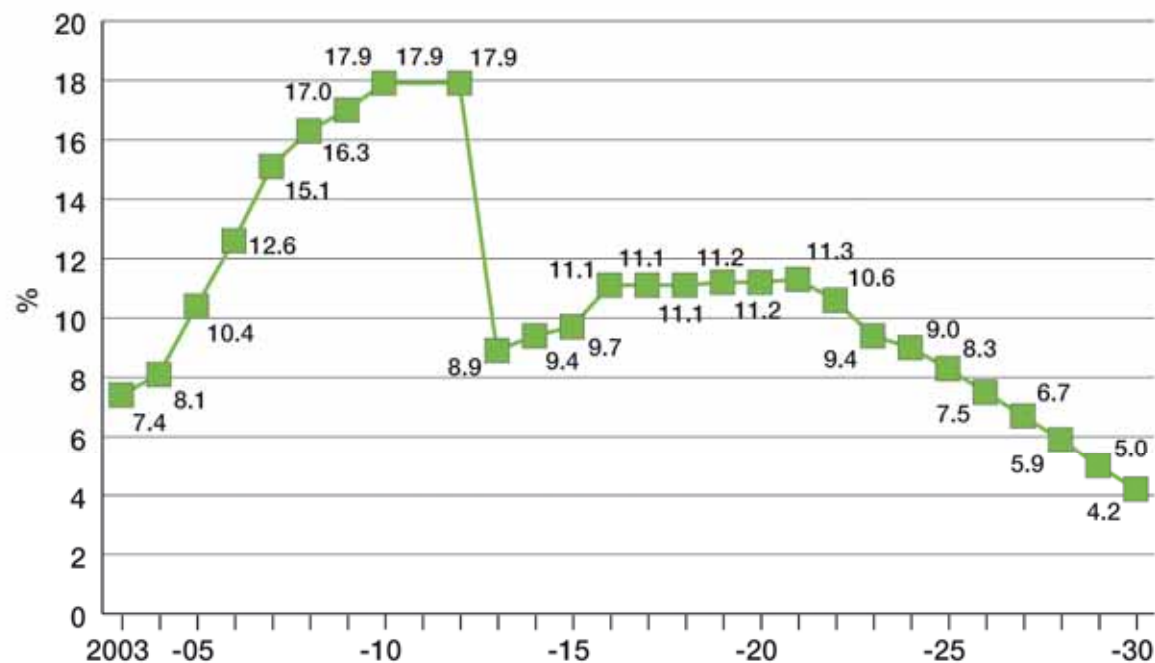
Figure 4: Total energy prices for various user categories , 2006



KÄLLA: SWEDISH PETROLEUM INSTITUTE, STATISTICS SWEDEN, ÅFAB, NATIONAL TAX BOARD

Note. Prices shown for industry do not include any large-user discounts.
The share of taxes are given within brackets.

Figure 5: Required quota proportions for the electricity certificate system, 2003-2030



SOURCE: THE ACT (2003:113) CONCERNING ELECTRICITY CERTIFICATES

Figure 6: Funding for research, development and demonstration activities

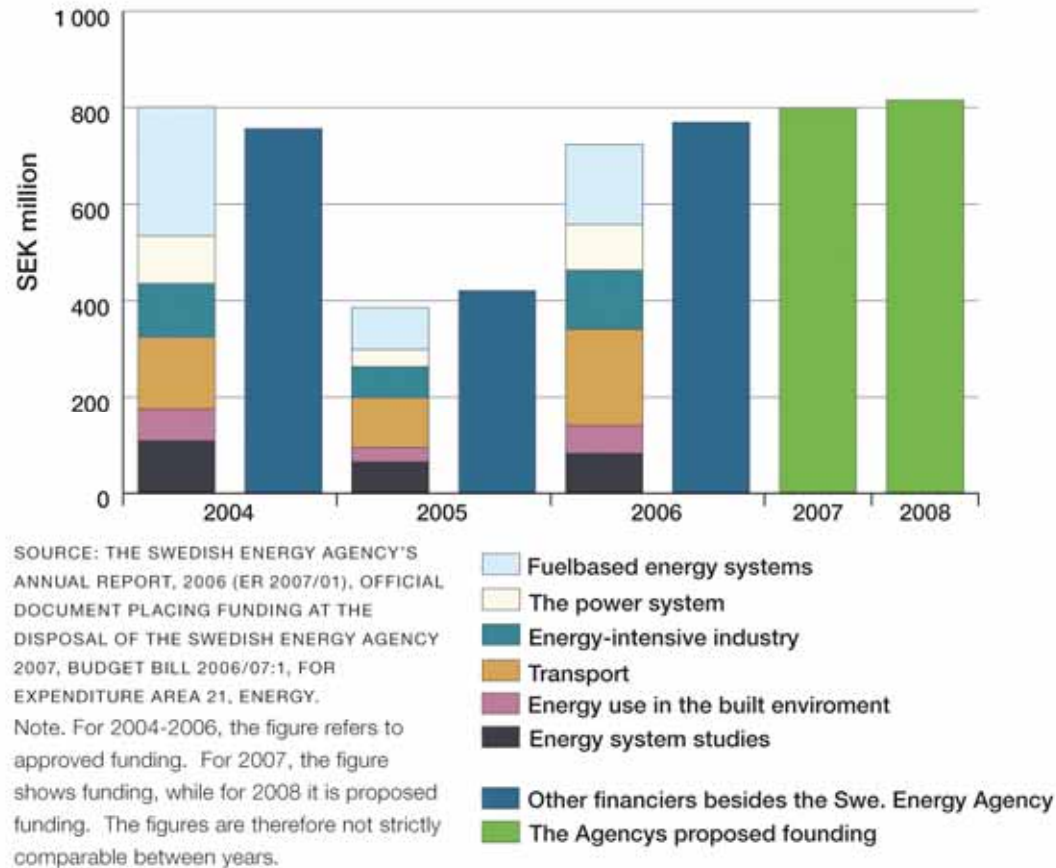


Figure 7: Energy supply and use in Sweden, 2006, TWh¹

Crude oil and oil products Natural gas and town gas Coal and coke Biofuels, peat etc. Heat pumps² Hydro power Nuclear power³ Wind power Net import of electricity⁴

Total energy supply in Sweden by 2006 energy carriers, 624 TWh¹



Conversion in power and heating plants, refineries, gasworks, coking plants, blast furnaces, distribution of electricity and district heating, international bunkering and transfer of raw energy materials to applications such as the paint and chemical industry.

Electricity District heating Ethanol

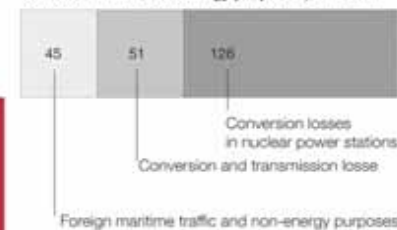
Total final use 2006 by energy carriers, 403 TWh



Total final use by sectors (and energy carriers), 403 TWh



Total losses and non-energy purposes, 222 TWh



SOURCE: Statistics Sweden and the Swedish Energy Agency

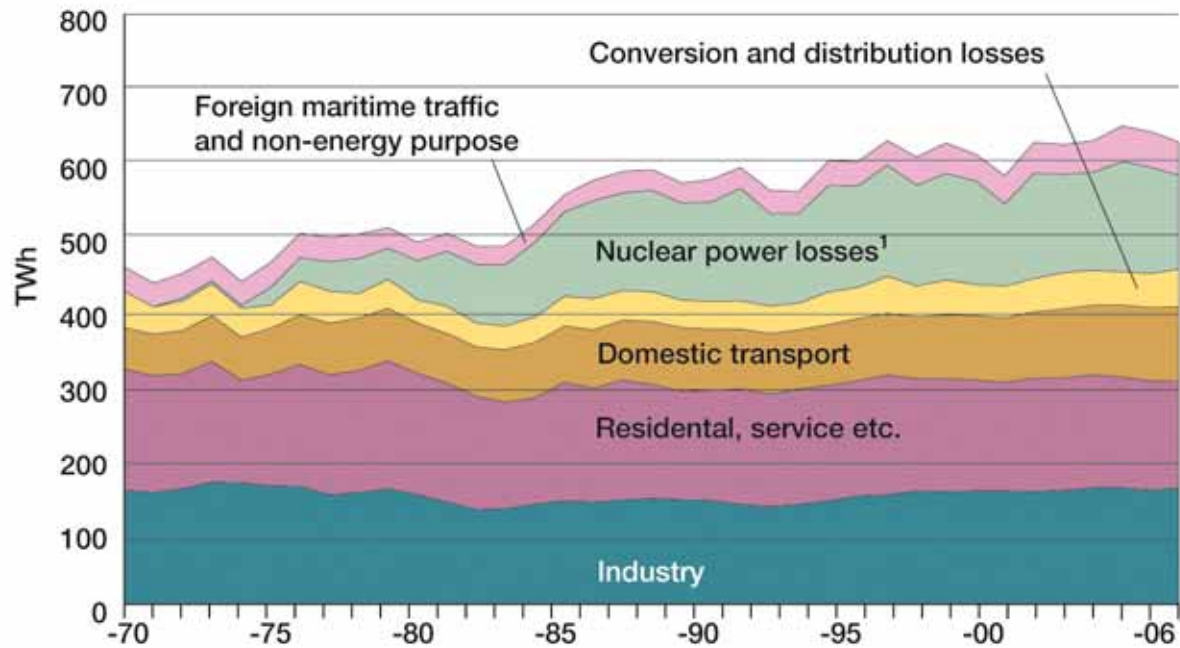
¹ Preliminary statistics. Due to rounding of figures, there may be differences in the totals.

² These are large heat pumps in the energy sector. Energy delivered to the energy system as heat produced, 5.6 TWh. Heat collected from the surroundings was about 4 TWh and input drive energy from electricity 1.6 TWh

³ Nuclear power is shown as gross power, i.e. as the nuclear fuel energy input, in accordance with the UN/ECE guidelines.

⁴ Net import of electricity is treated as supply.

Figure 8: Sweden's total energy use, 1970–2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Note. ¹ Calculated in accordance with the UN/ECE method for energy supply from nuclear power.

Figur 9: Total energy use in Sweden, 1970-2006. Conversion losses in the production sector are allocated to end users.

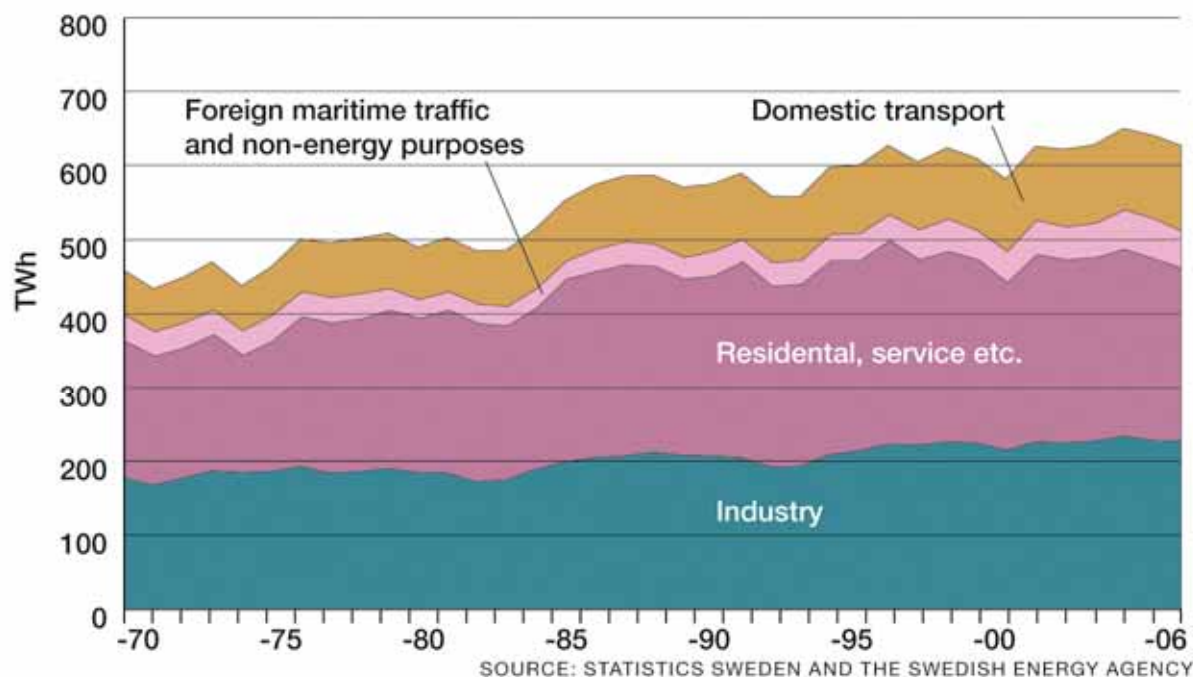
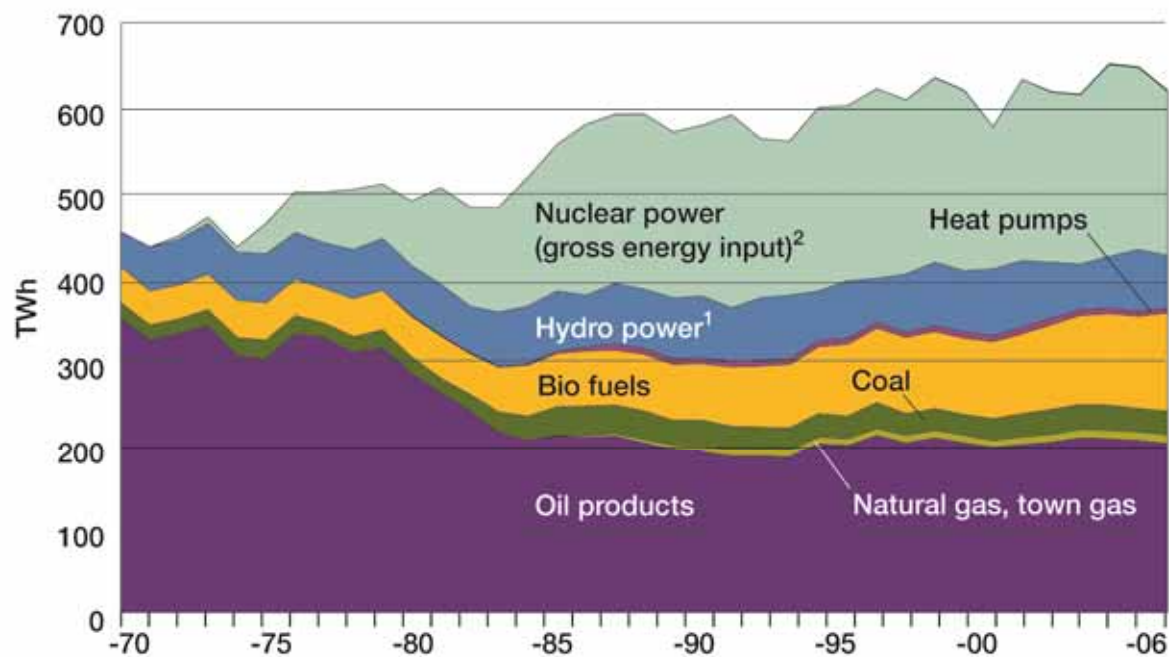


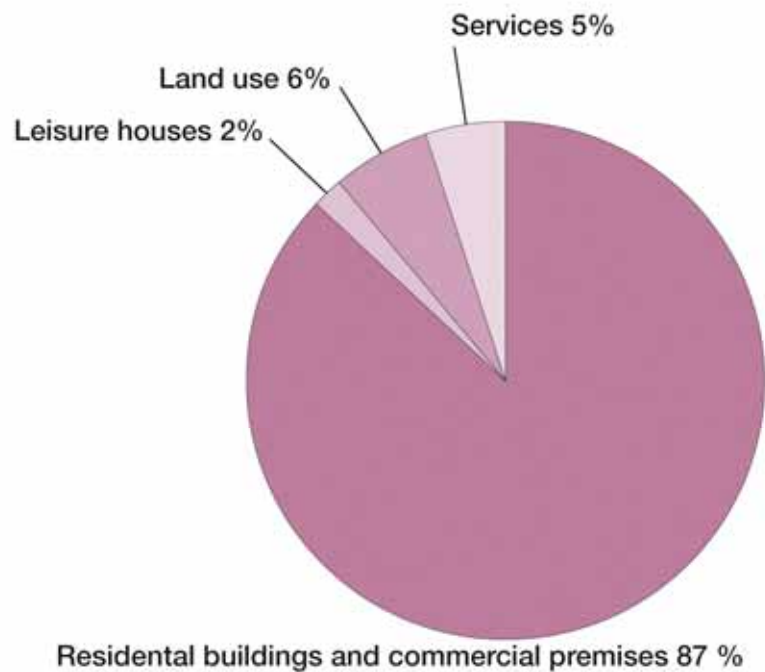
Figure 10: Total energy use in Sweden, 1970-2006, excluding net electricity exports.



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

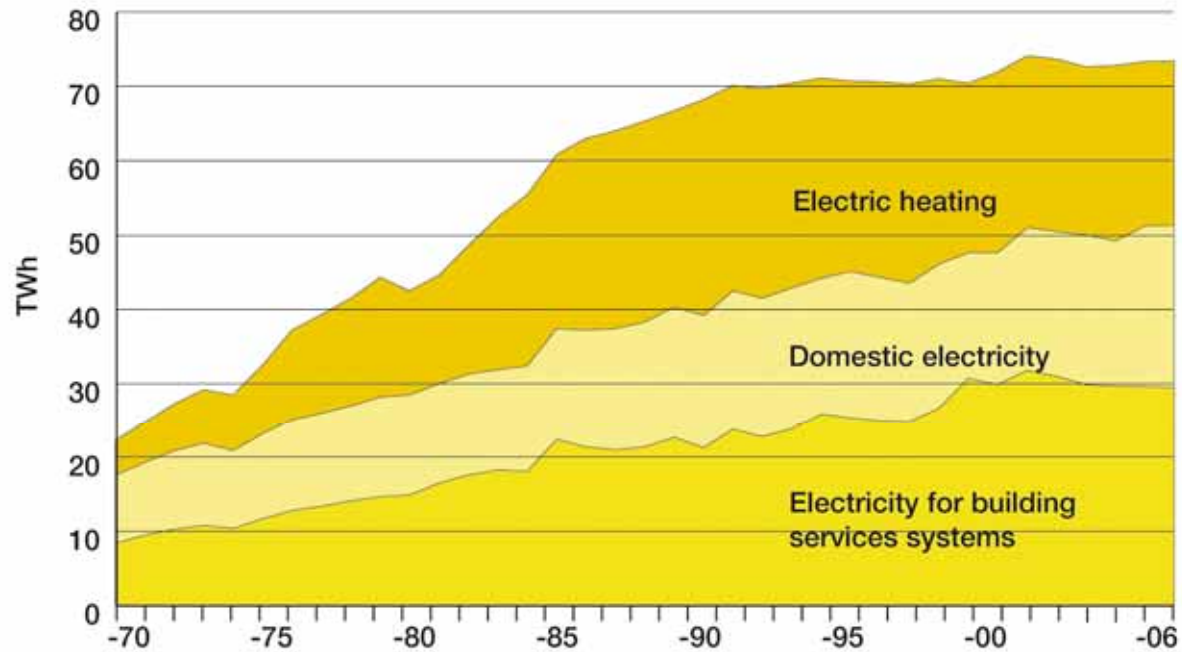
Note. ¹ Including wind power up to and including 1996. ² Calculated in accordance with the UN/ECE method for energy supply from nuclear power.

Figur 11: Energy use in the residential and service sector, 2005



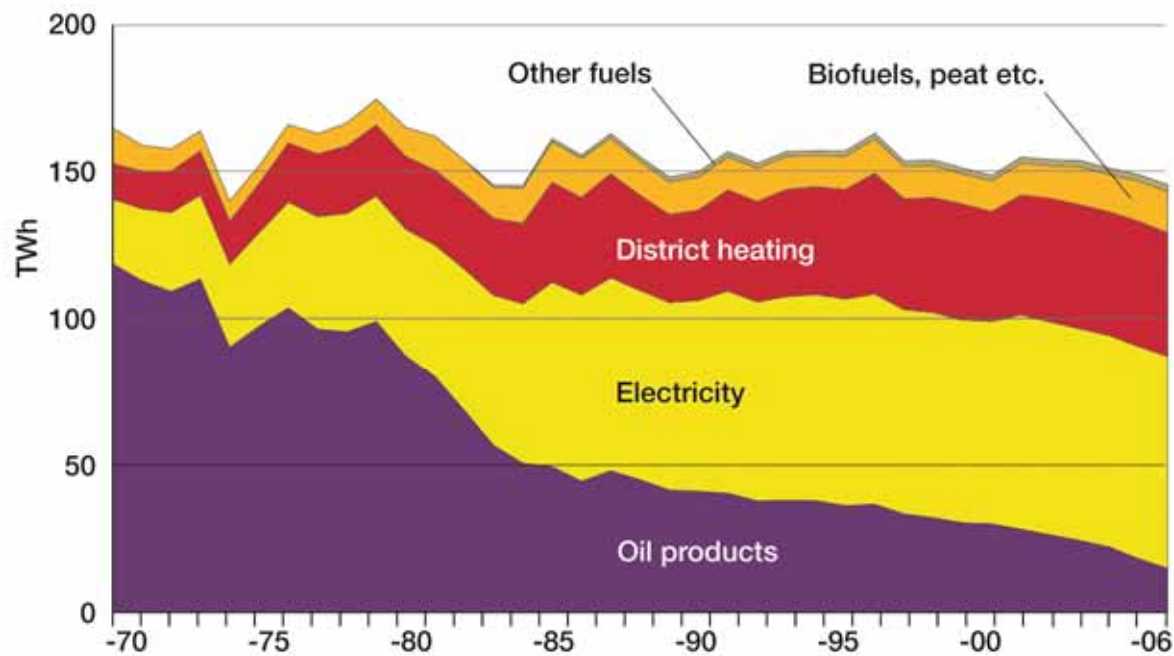
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 12: Electricity use in the residential and service sector, 1970–2006, statistically corrected for weather conditions.



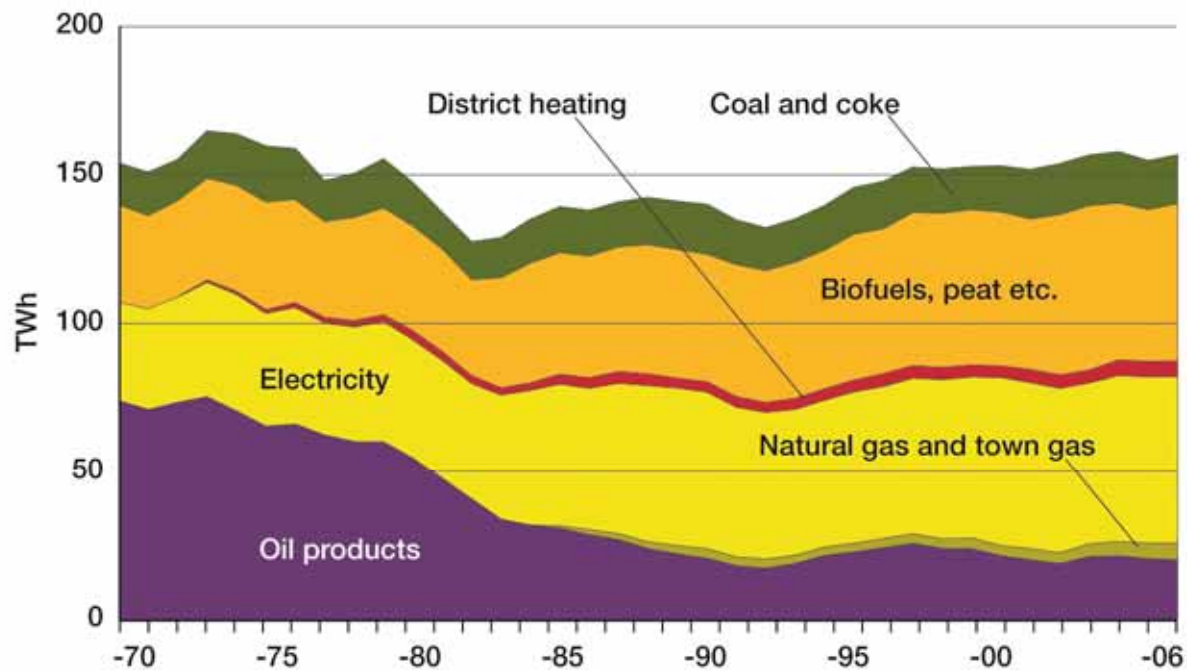
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 13: Final energy use in the residential and service sector, 1970–2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 14: Final energy use in industry, 1970-2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 15: Energy use in industry, by sectors, 1990-2006.

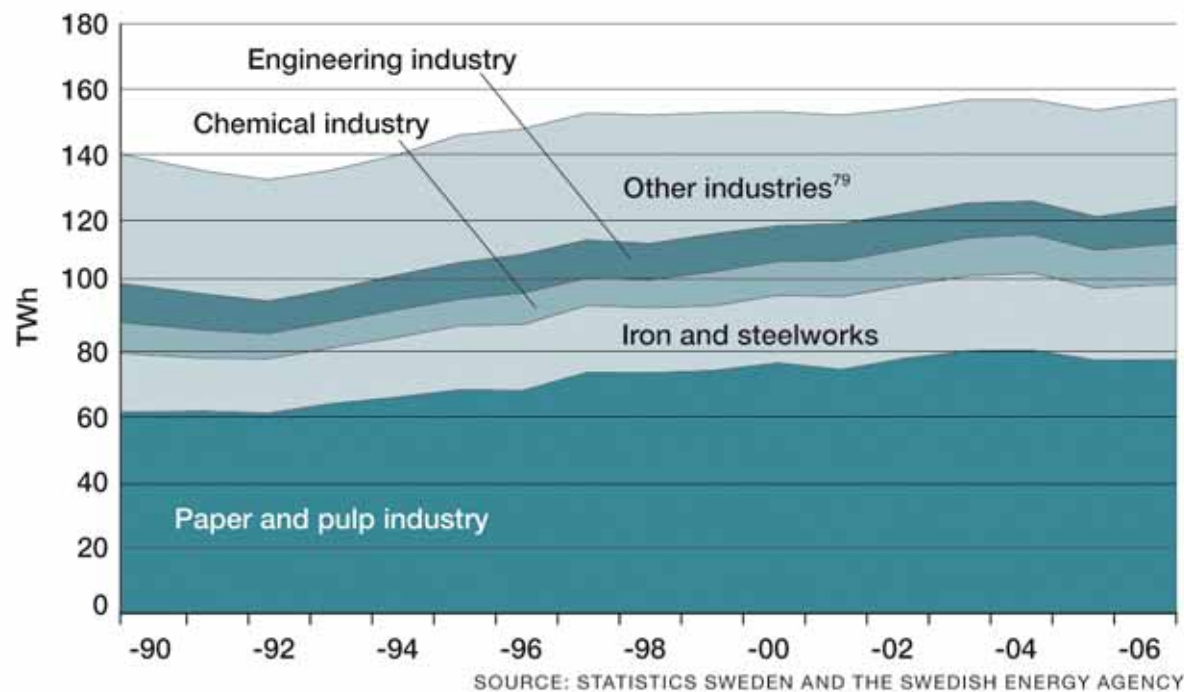
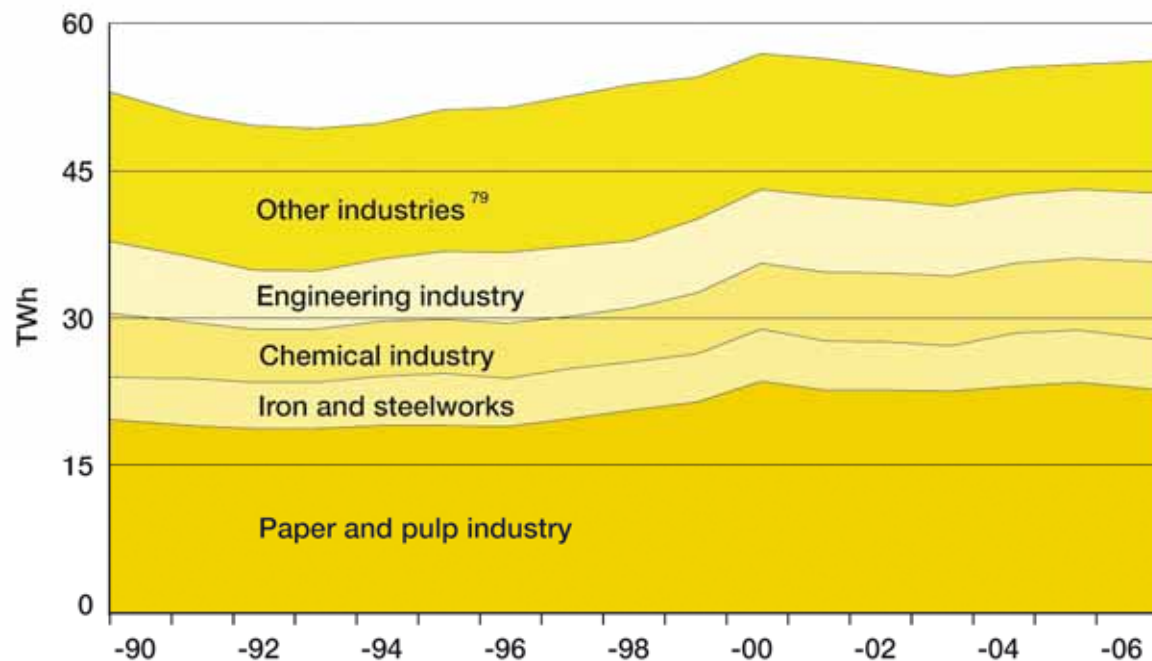
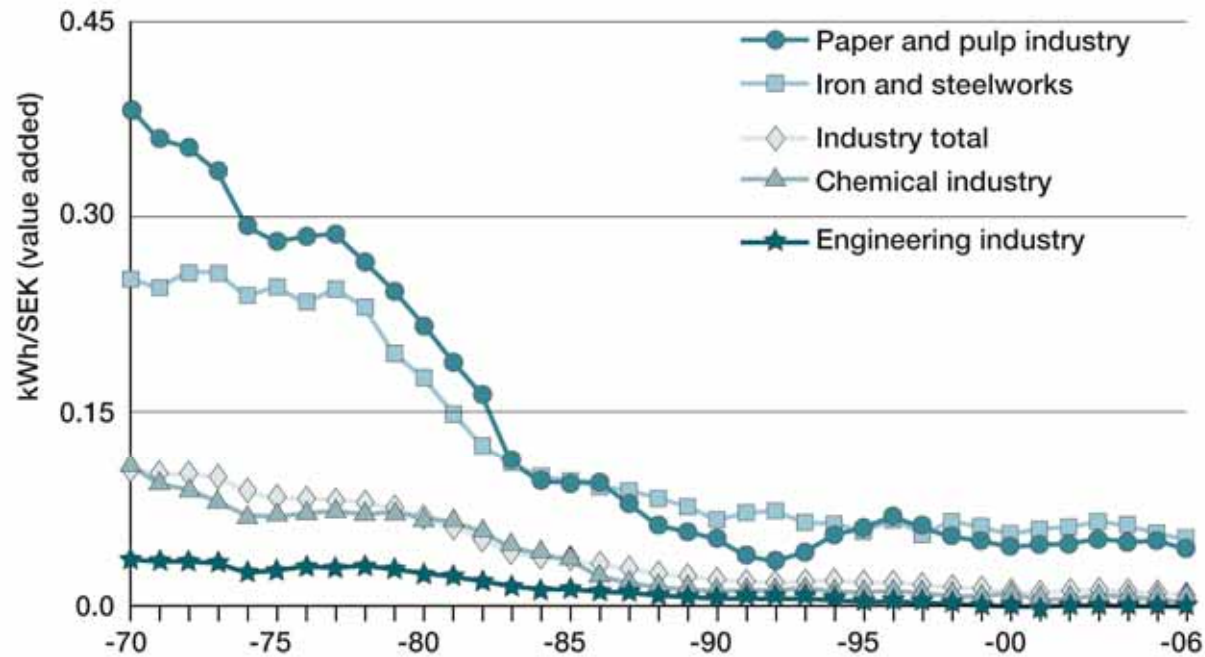


Figure 16: Electricity use in industry, by sectors, 1990-2006.



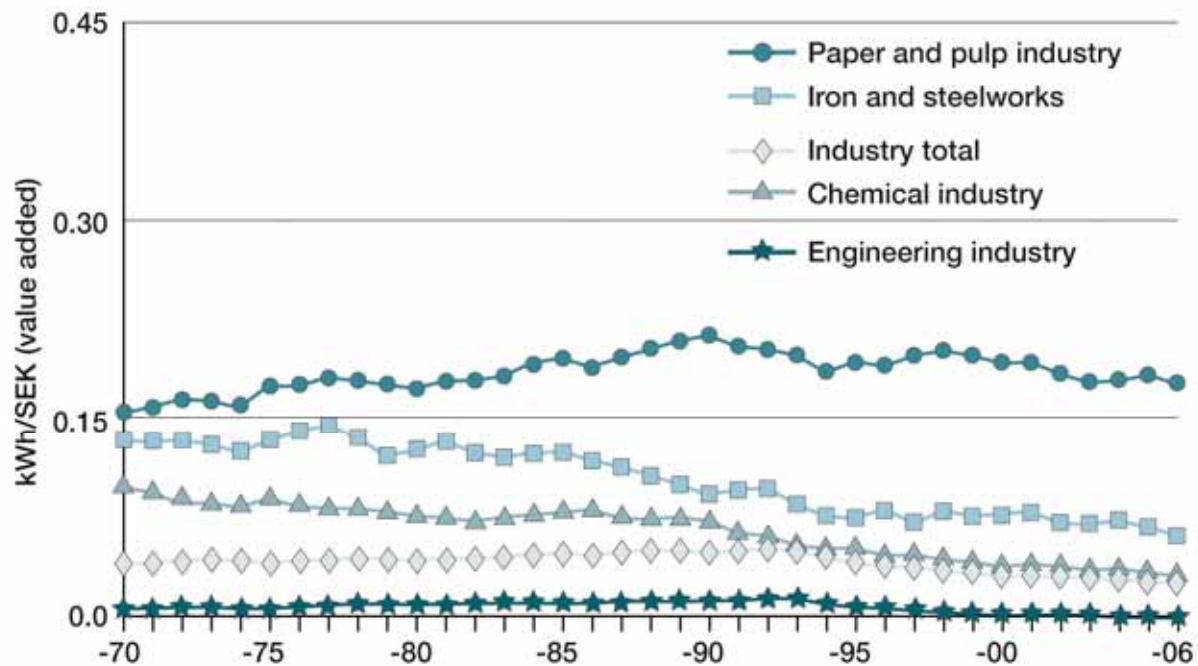
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 17: Specific use of oil in industry, 1970-2006, (2000 price level)



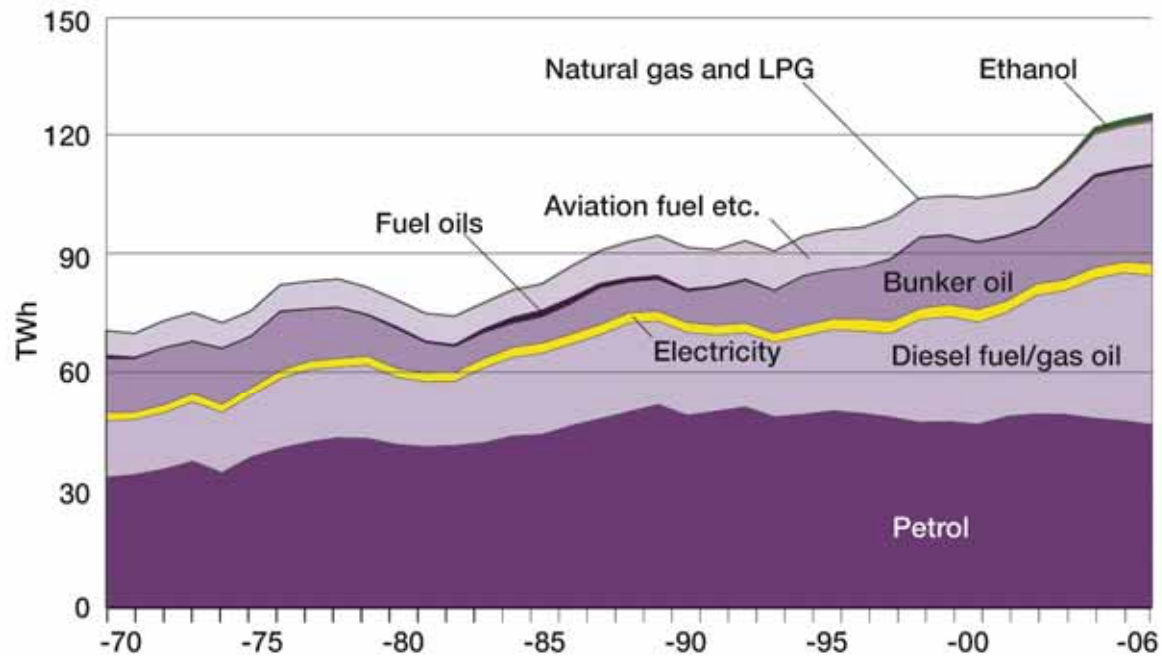
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 18: Specific use of electricity in industry, 1970-2006, (2000 price level)



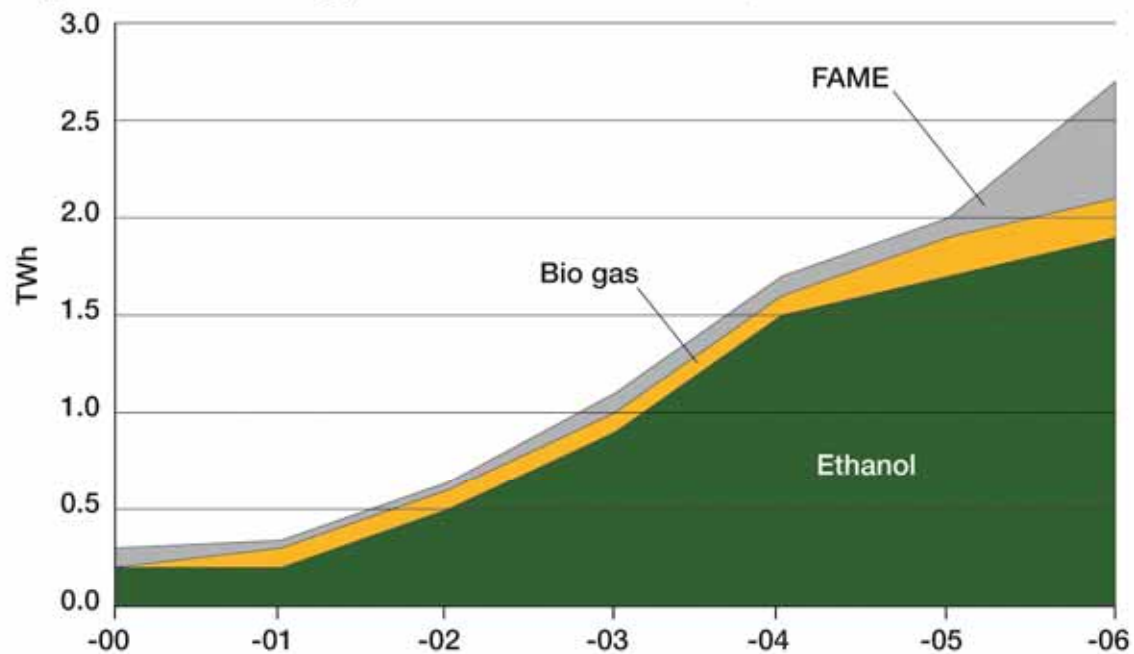
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 19: Final energy use in the transport sector, 1970–2006, including foreign maritime traffic



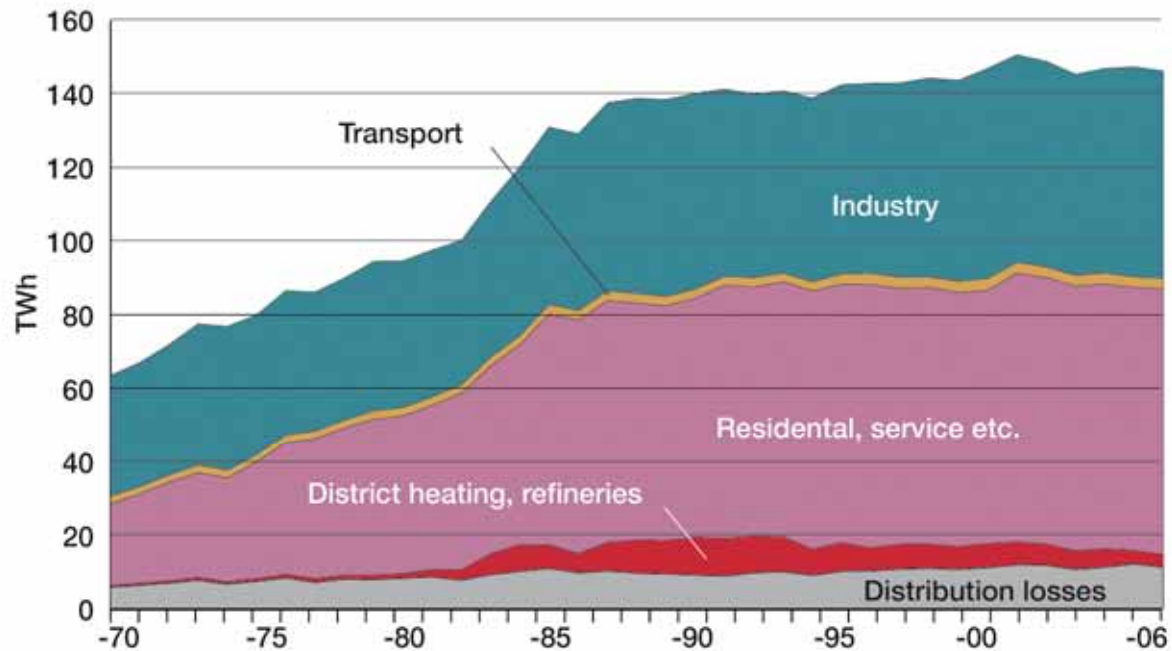
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 20: Final energy use of renewable motor fuels, 2000–2006



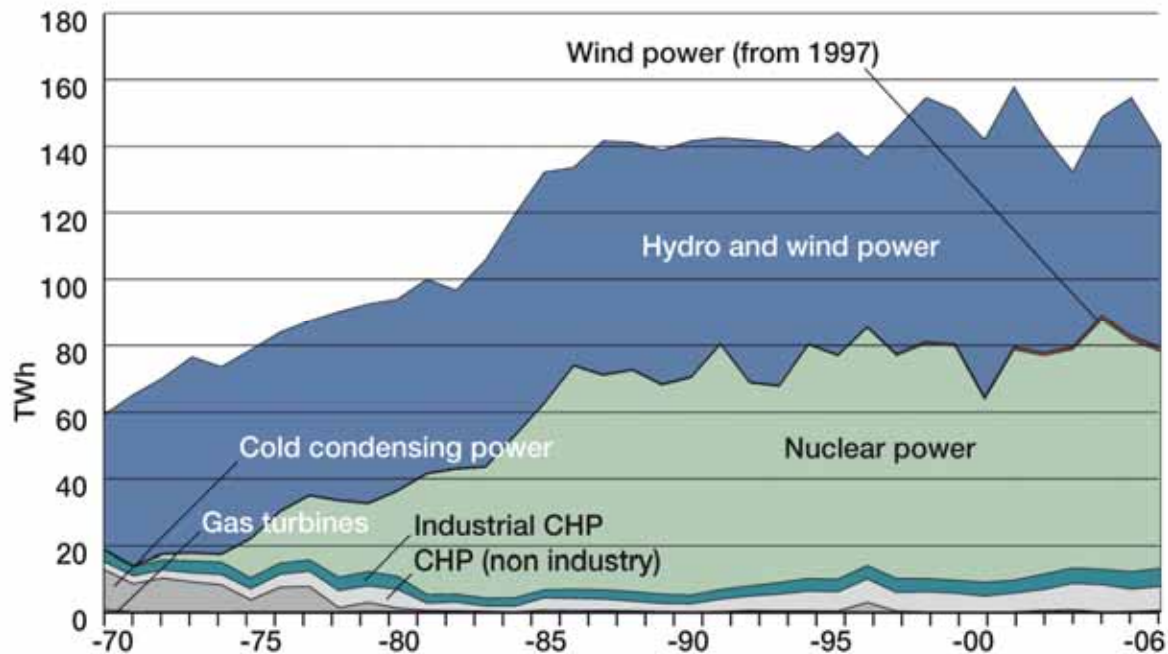
SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY AND THE SWEDISH GAS ASSOCIATION

Figure 21: Electricity use in Sweden, by sectors, 1970–2006



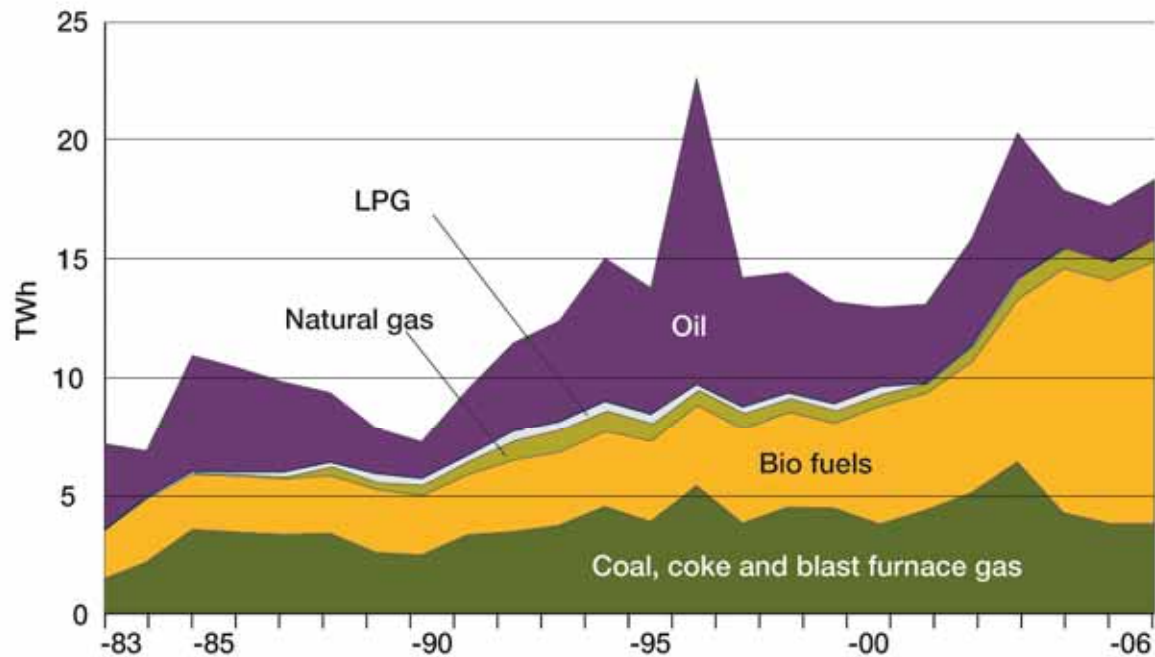
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 22: Sweden's electricity production, by types of energy source, 1970–2006



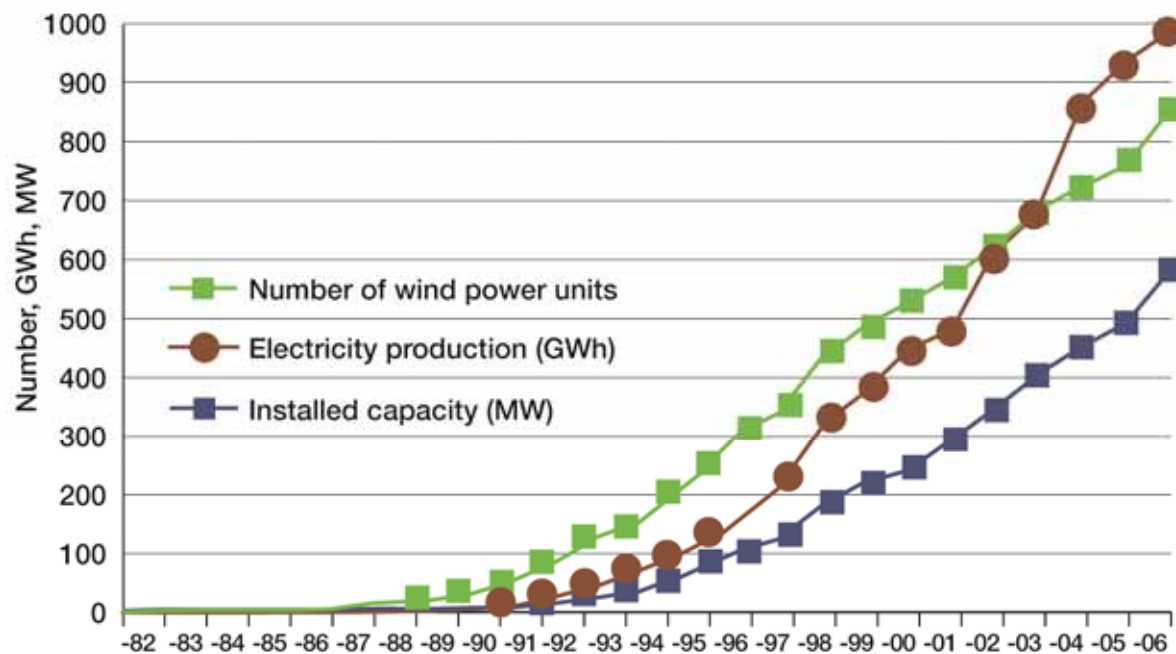
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 23: Fuel input for electricity production (excluding nuclear fuel), 1983-2006



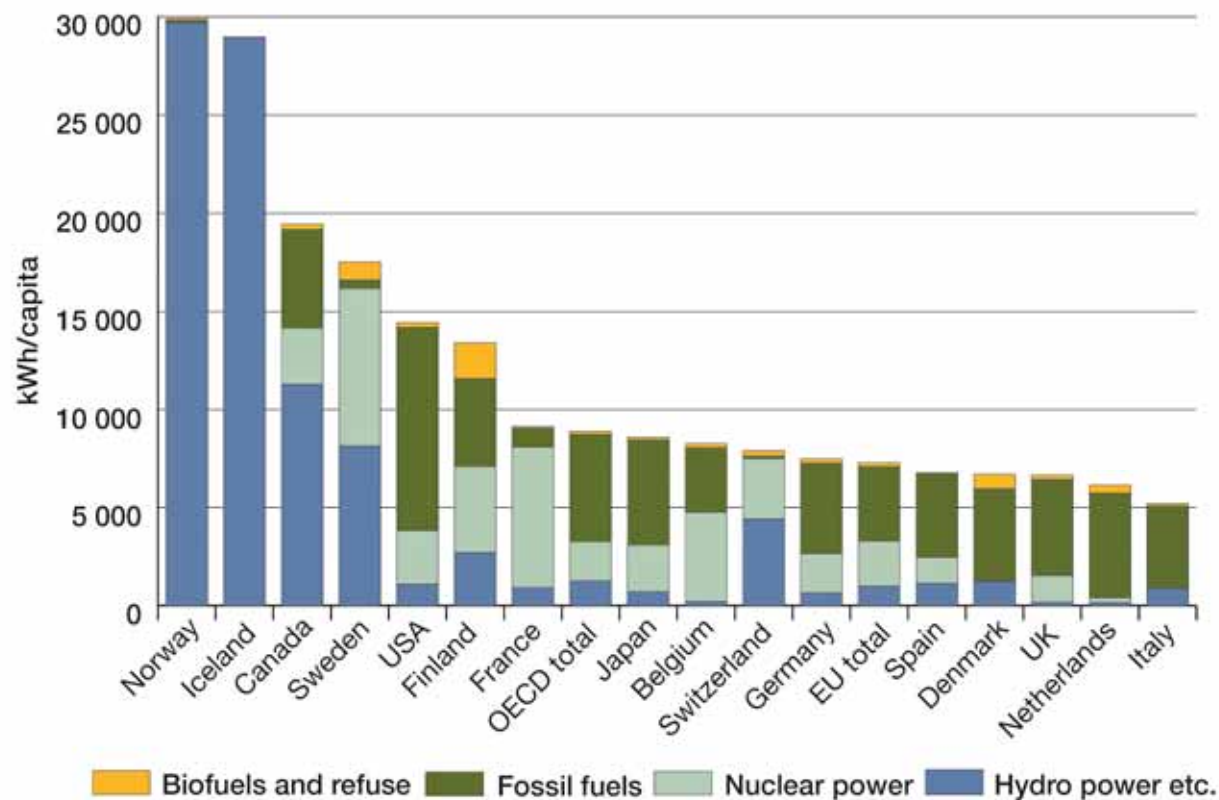
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 24: Wind power production, 1982–2006



SOURCE: SWEDISH ASSOCIATION OF ELECTRICAL UTILITIES AND THE SWEDISH ENERGY AGENCY'S ANNUAL REPORT ON THE ELECTRICITY CERTIFICATE SYSTEM

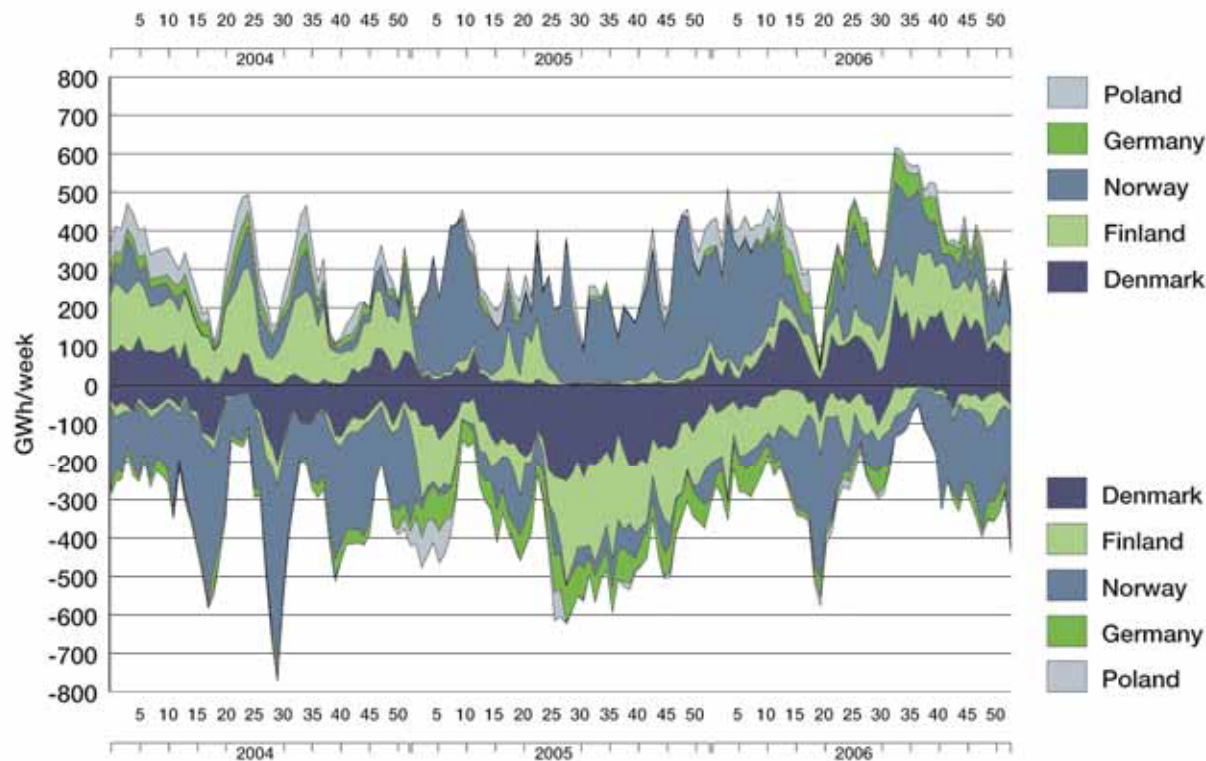
Figure 25: Per-capita electricity production, by types of production, 2005



SOURCE: ELECTRICITY INFORMATION 2006 IEA/OECD

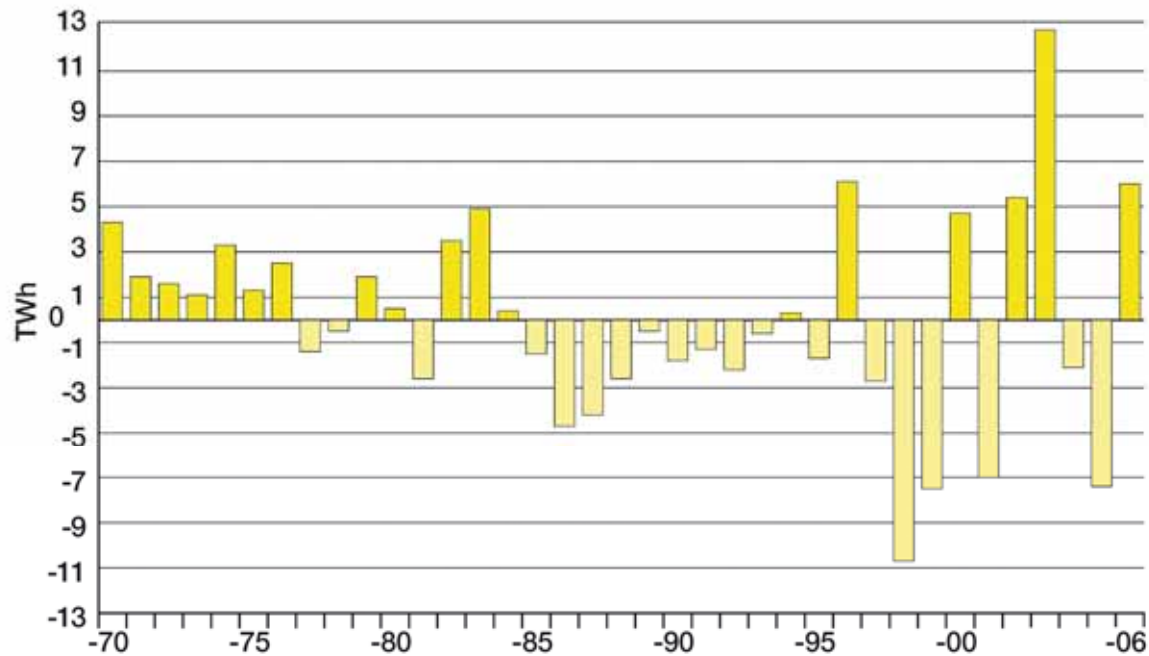
Note. 'Hydro power etc.' includes wind power, solar electricity and geothermal electricity.

Figure 26: Sweden's electricity imports (+) and exports (-), January 2004 -December 2006



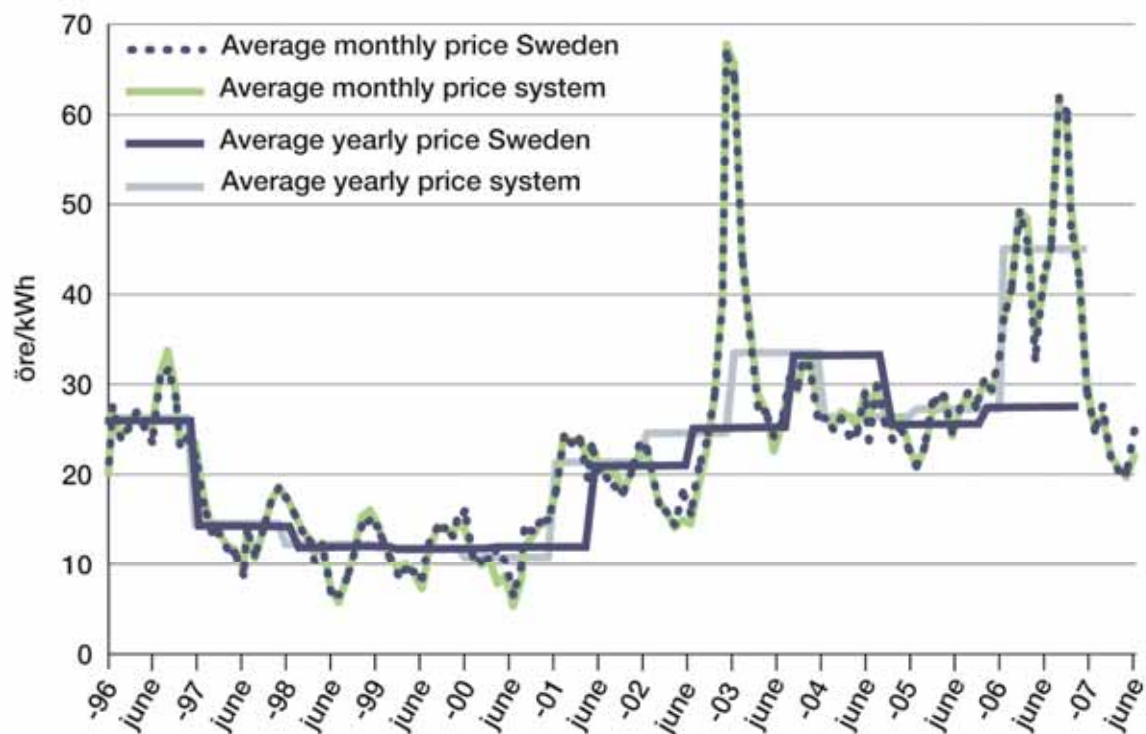
SOURCE: SWEDENERGY AND THE SWEDISH ENERGY AGENCY

Figure 27: Sweden's net import (+) and export (-) of electricity, 1970-2006



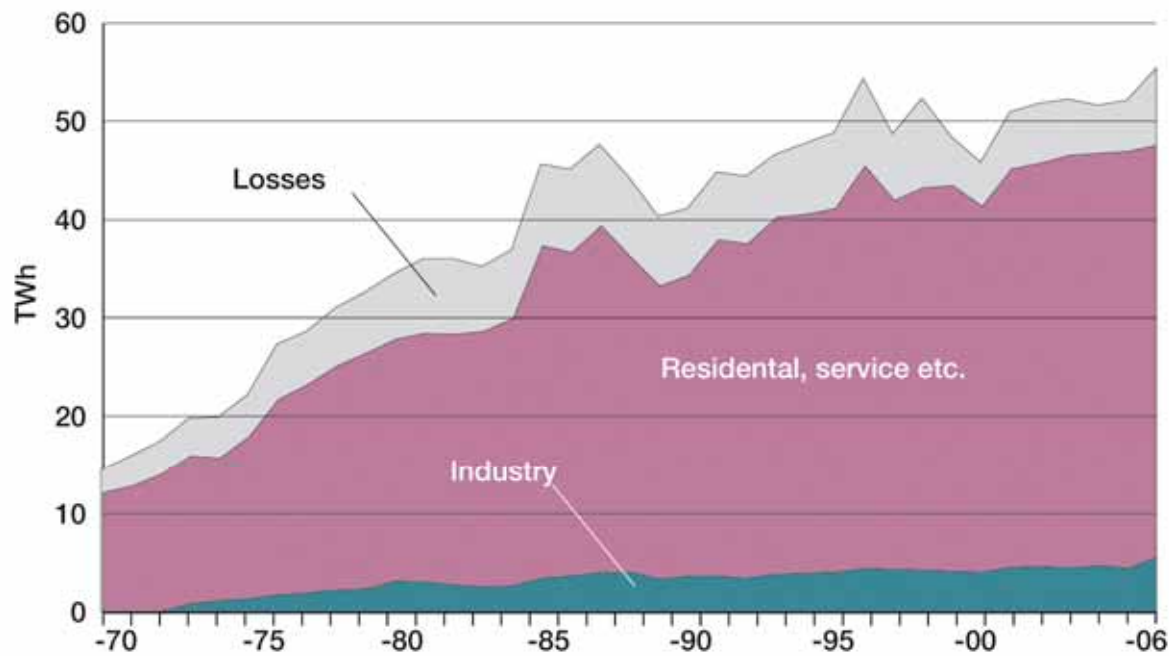
SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 28: Spot prices on Nord Pool. Monthly and annual average prices for the system and for Sweden, January 1996-June 2007



SOURCE: NORD POOL, FTP SERVER

Figure 29: District heating use, 1970–2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 30: Energy Input for district heating, 1970-2006

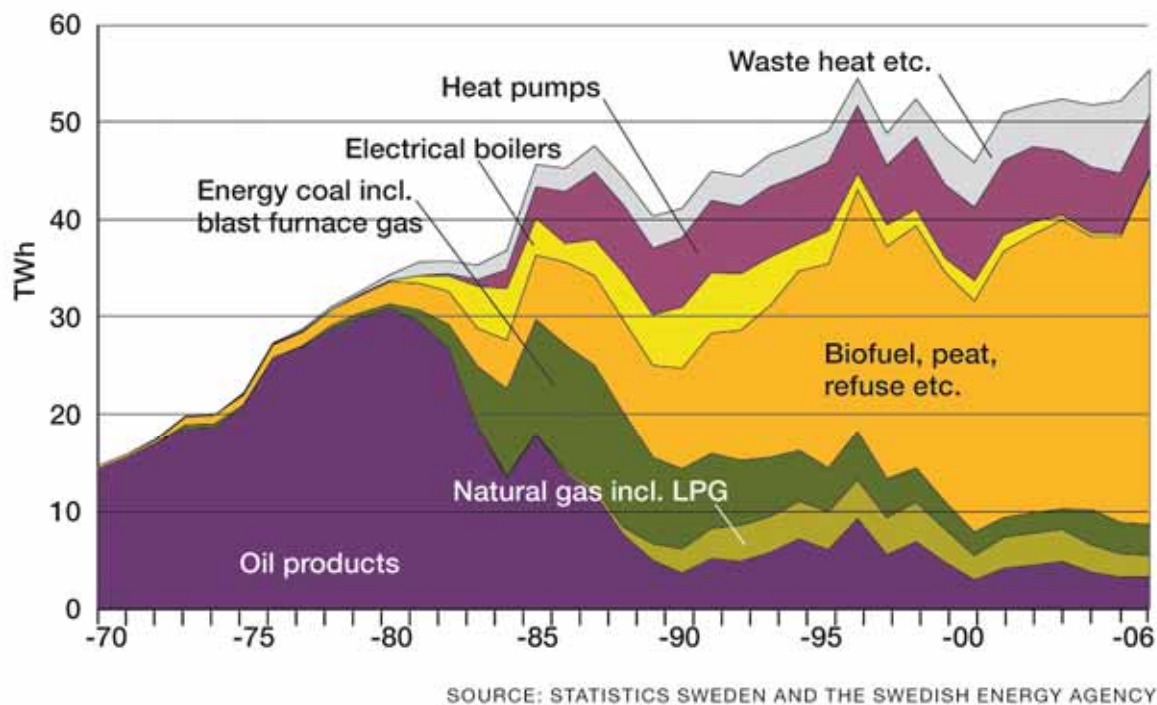
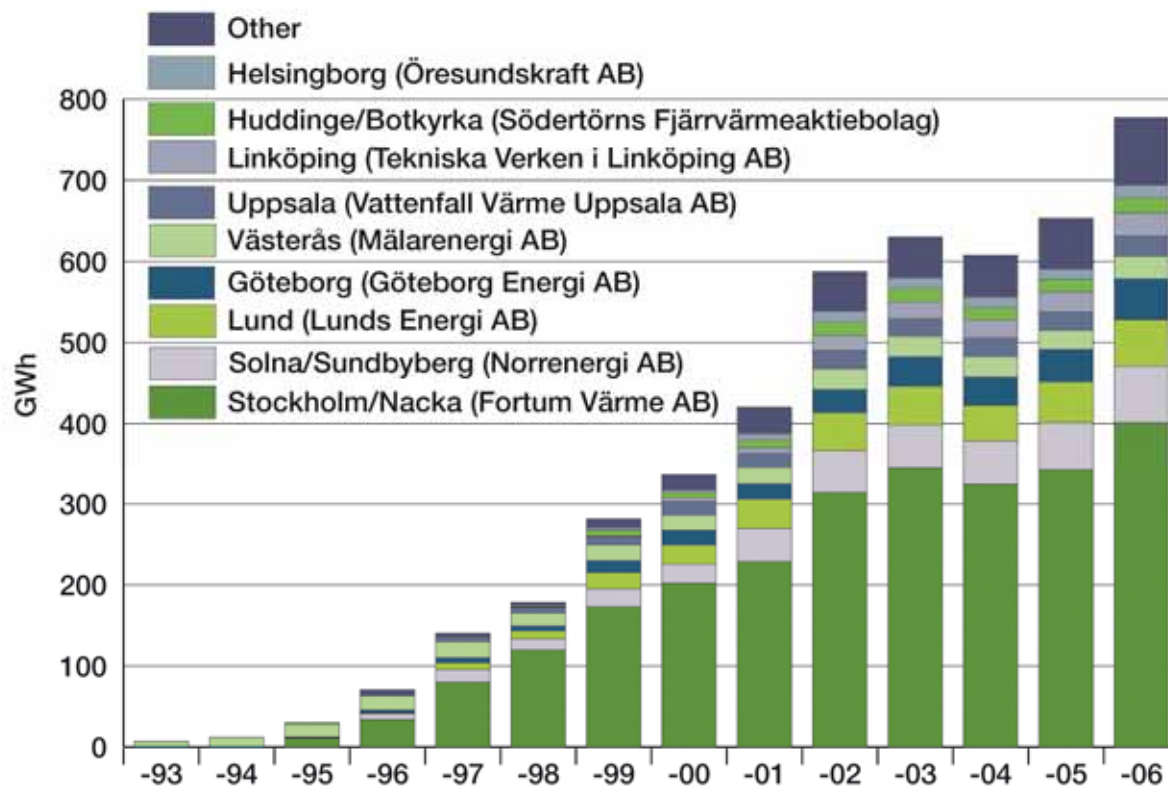


Figure 31: District cooling supplied, 1993–2006

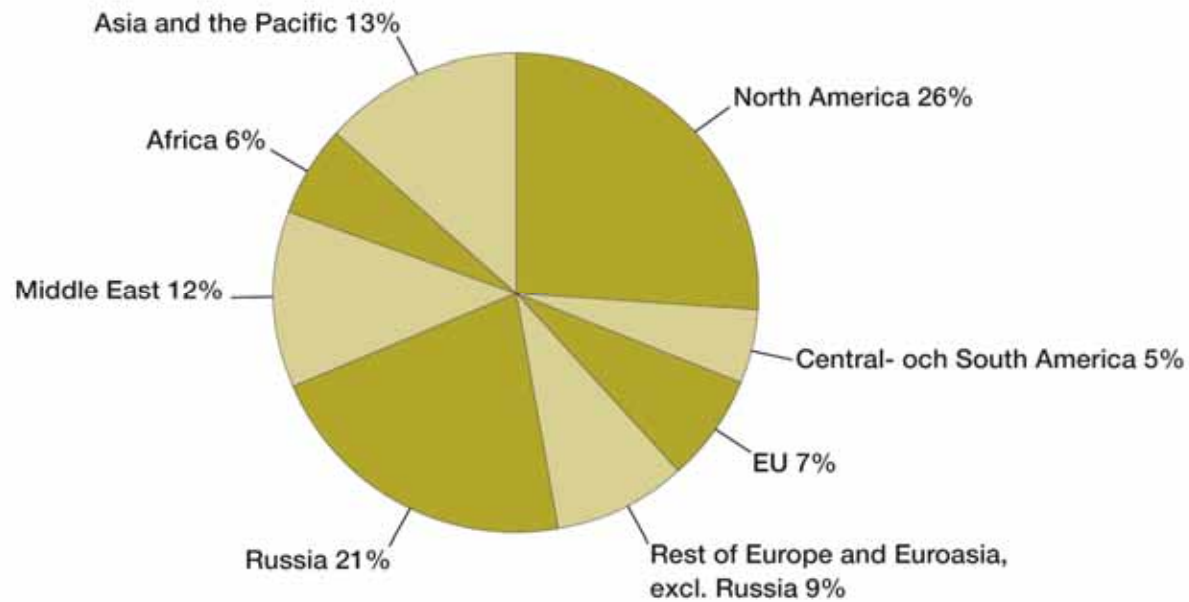


SOURCE: SWEDISH DISTRICT HEATING ASSOCIATION

Figure 32: End use of natural gas in Sweden, 1985–2006, by sectors, GWh

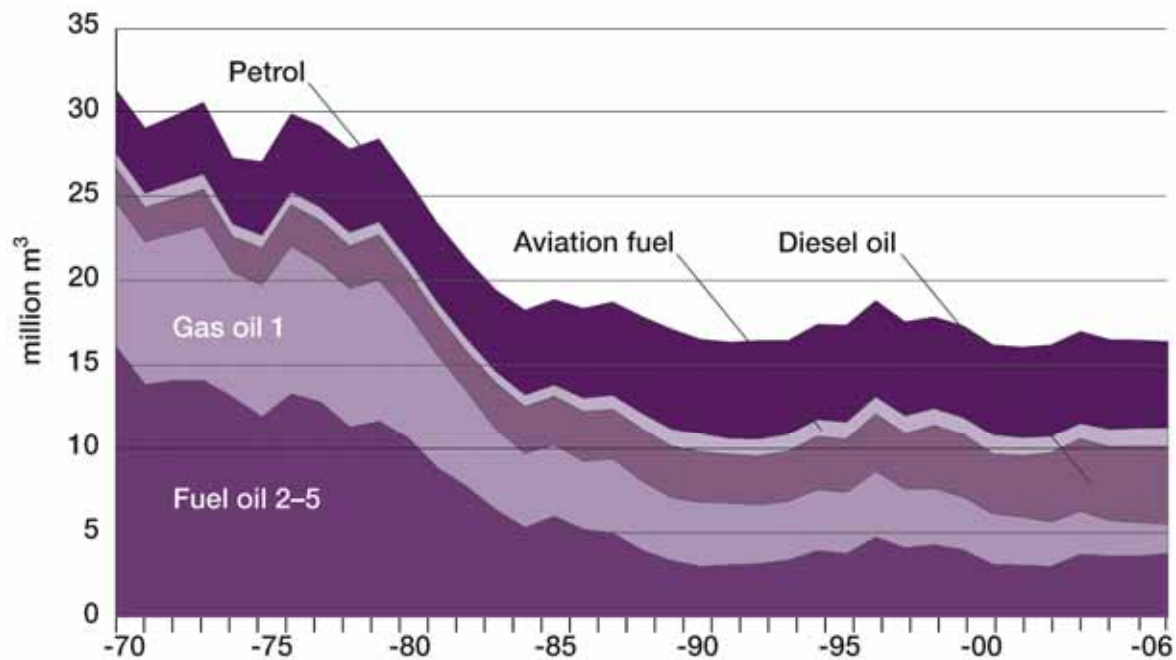


Figure 33: World natural gas production, 2006. Total: 2865 thousand million m³



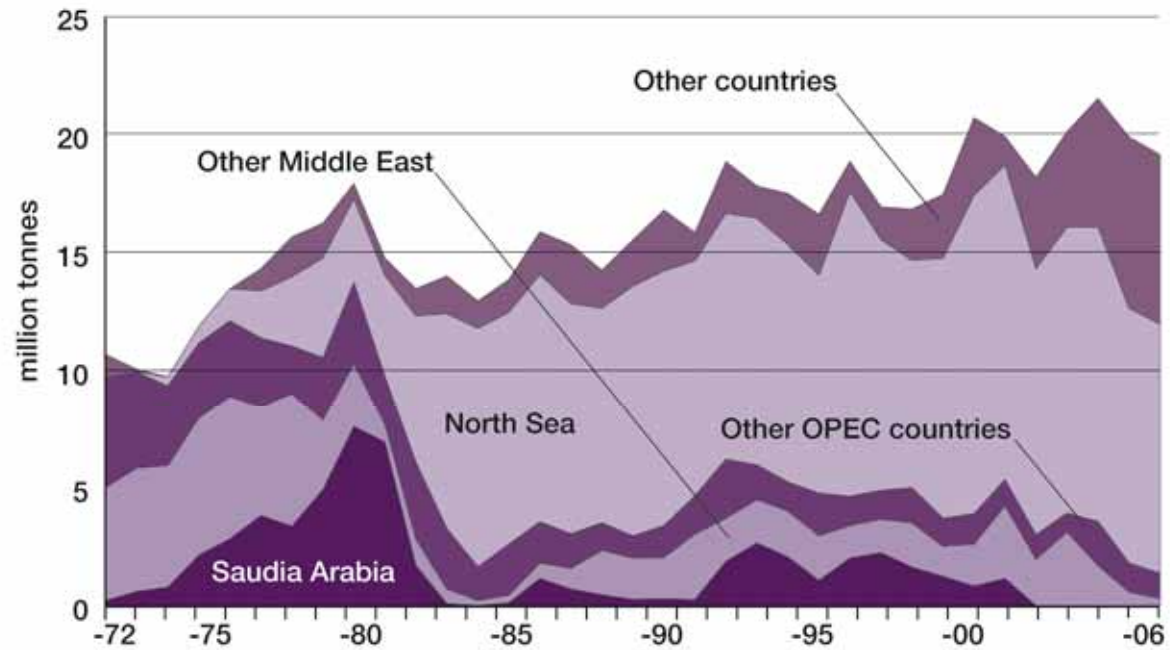
SOURCE: STATISTICAL REVIEW OF WORLD ENERGY 2007

Figure 34: Use of oil products in Sweden, including foreign maritime traffic, 1970-2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 35: Swedish net imports of crude oil by country of origin, 1972–2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 36: Net imports (+) and exports (-) of refinery products, 1972–2006

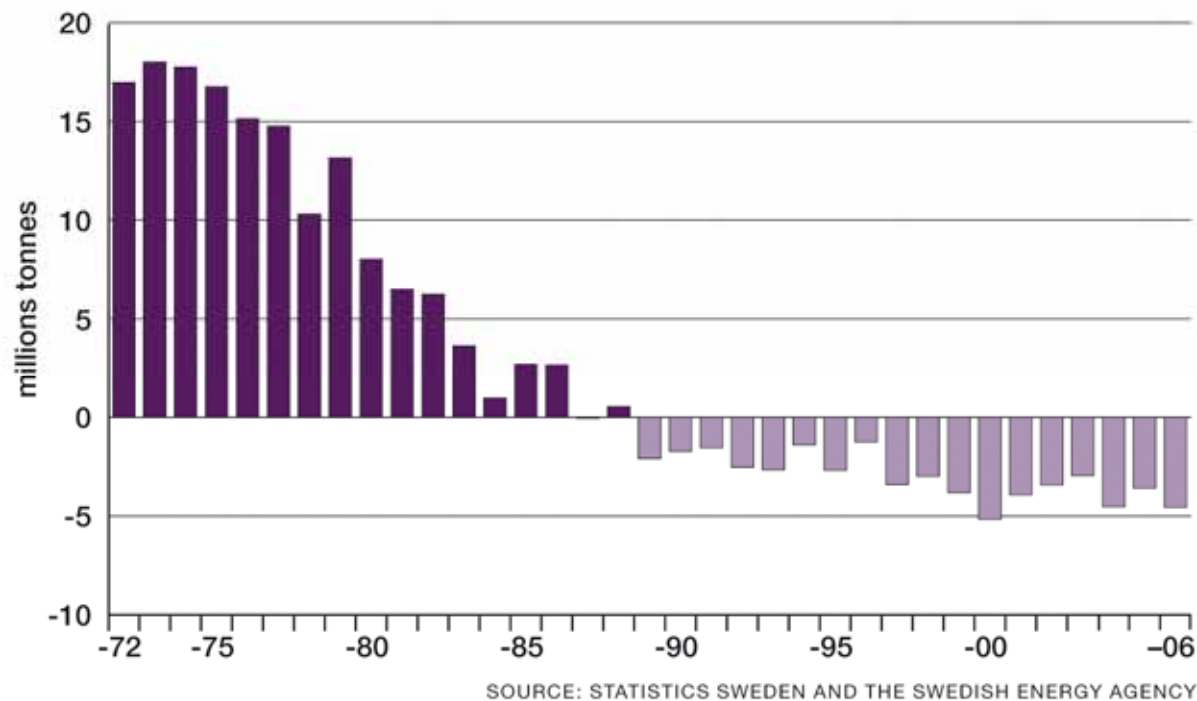
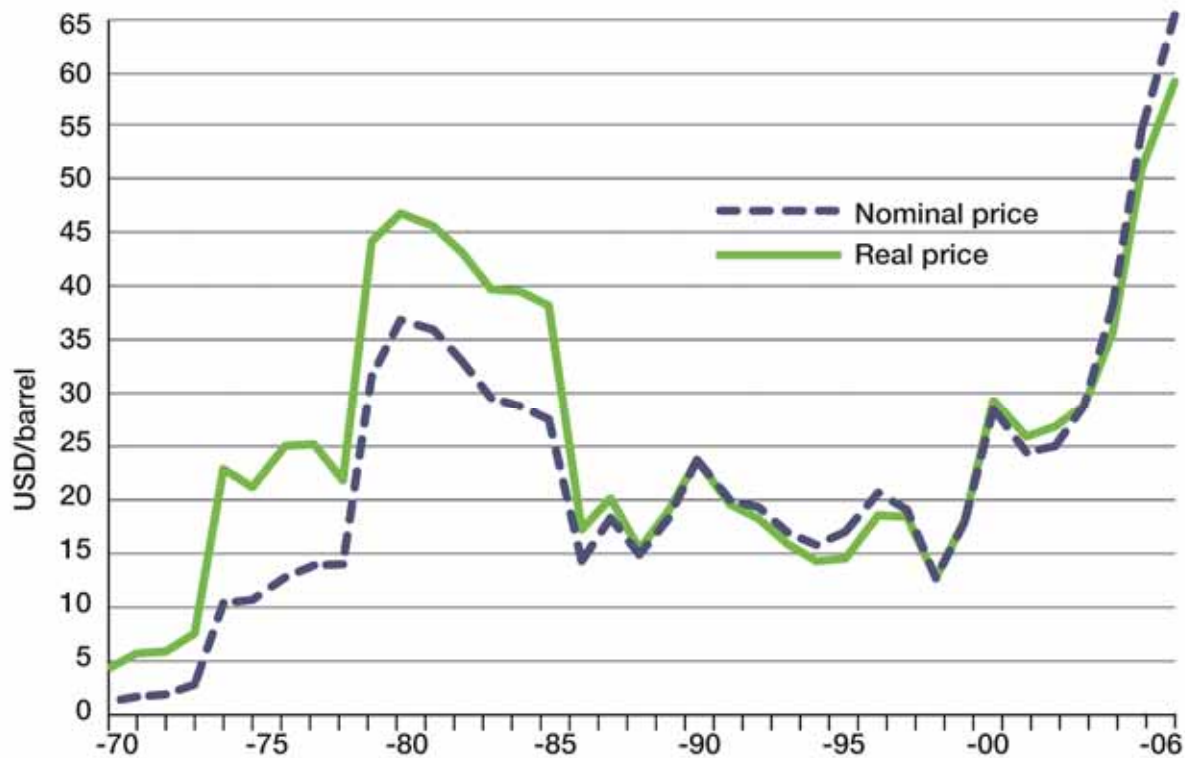
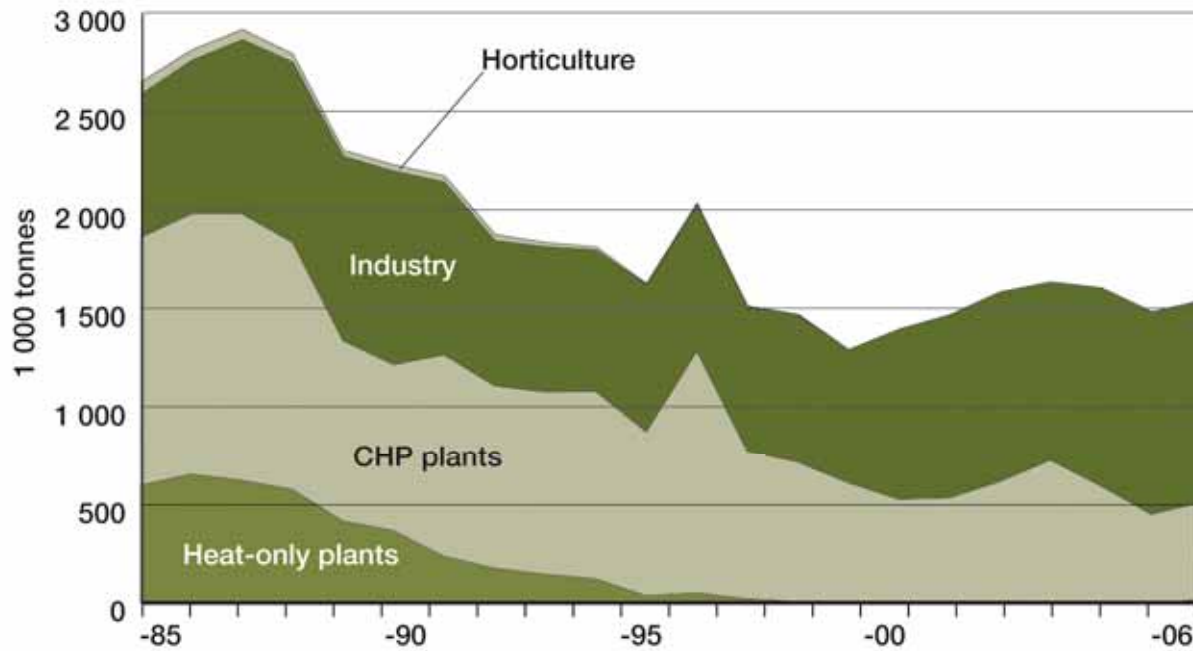


Figure 37: Nominal and real prices of light crude oil, 1970–2006, USD/barrel



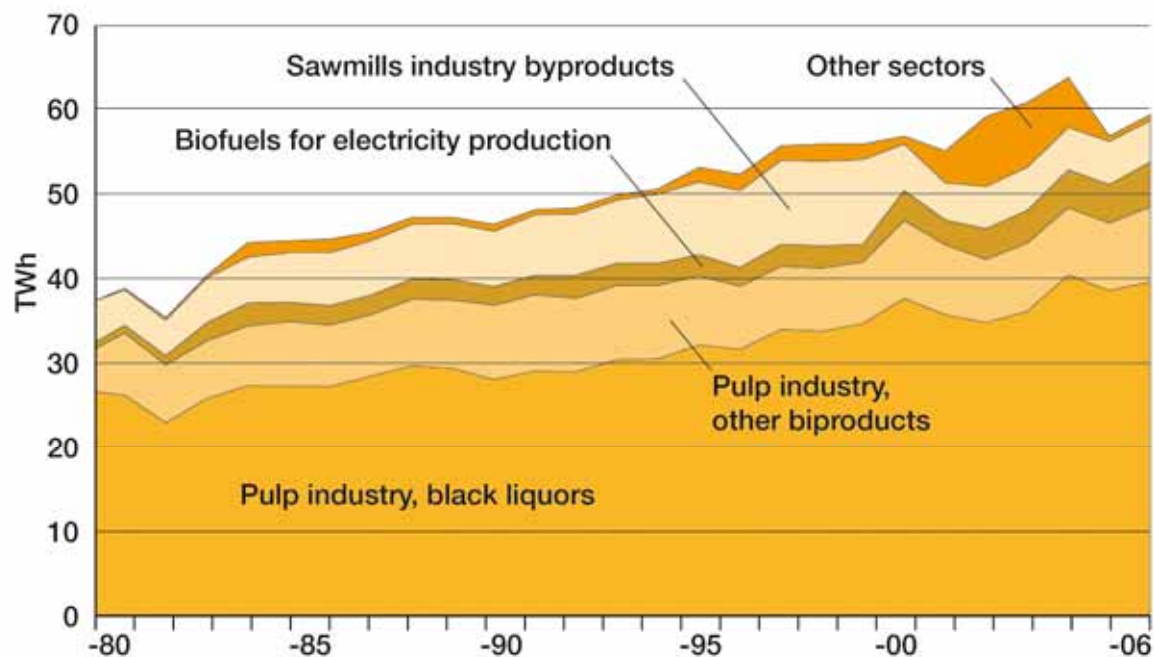
SOURCE: WWW.BP.COM AND THE WORLD BANK

Figure 38: Use of energy coal in Sweden, 1985–2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Figure 39: Use of biofuels, peat etc. in industry, 1980-2006

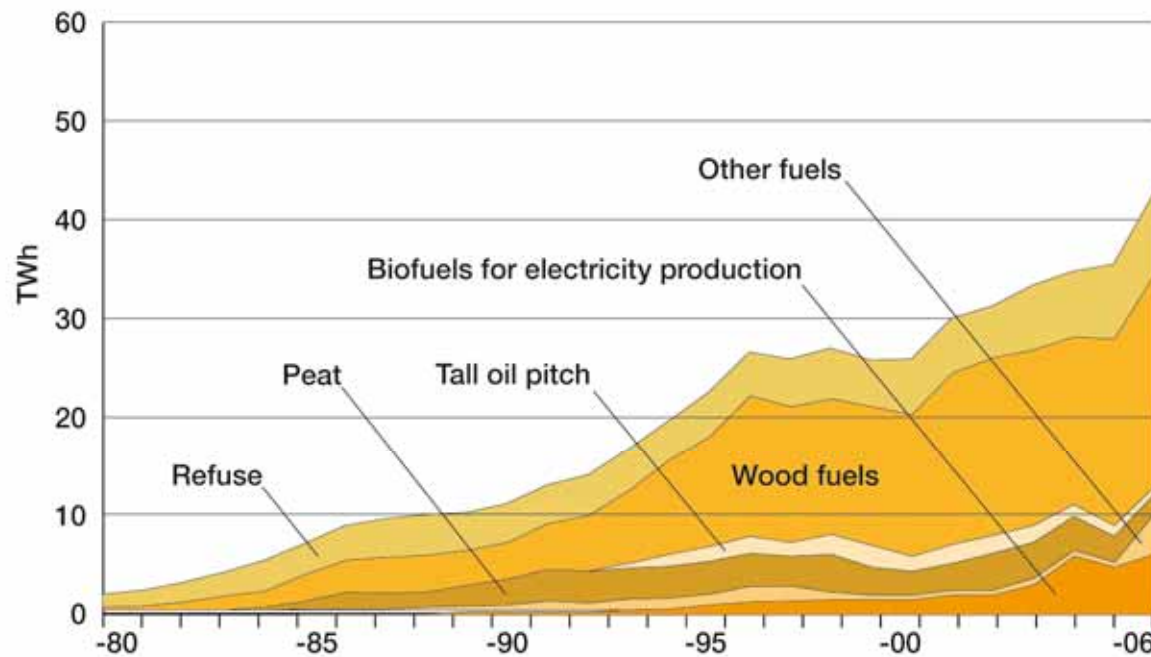


SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

Note. The preliminary statistics for other sectors have been under-estimated for the last few years.

See the text for more details.

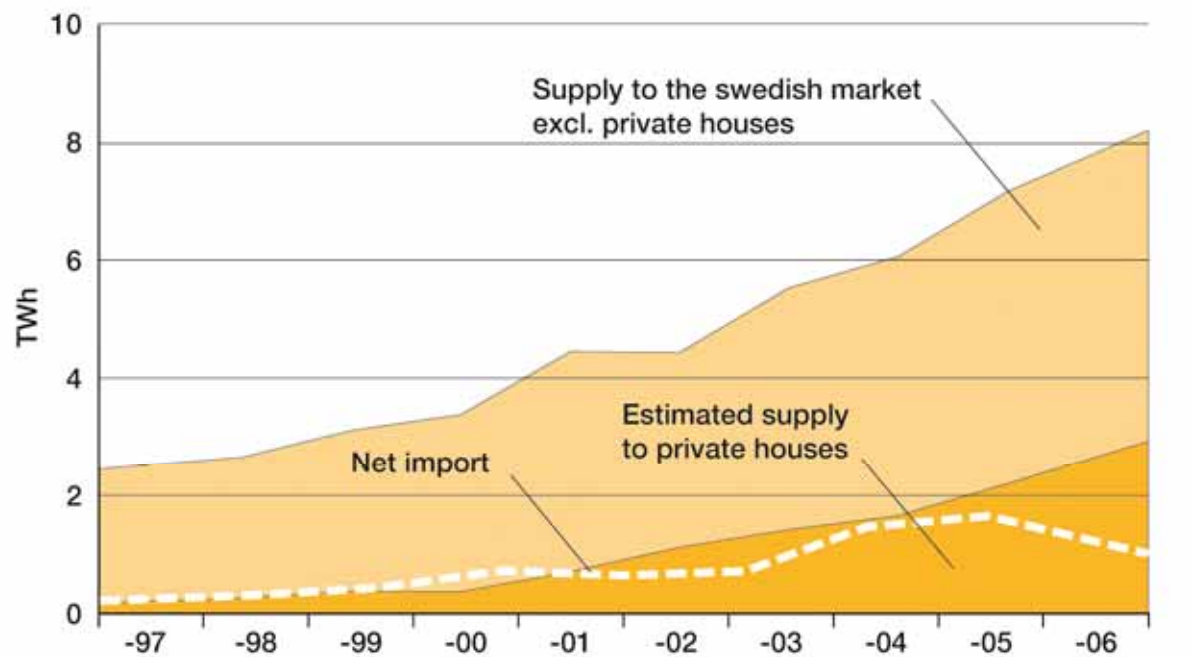
Figure 40: Use of biofuels, peat etc. in district heating plants, 1980-2006



SOURCE: STATISTICS SWEDEN AND THE SWEDISH ENERGY AGENCY

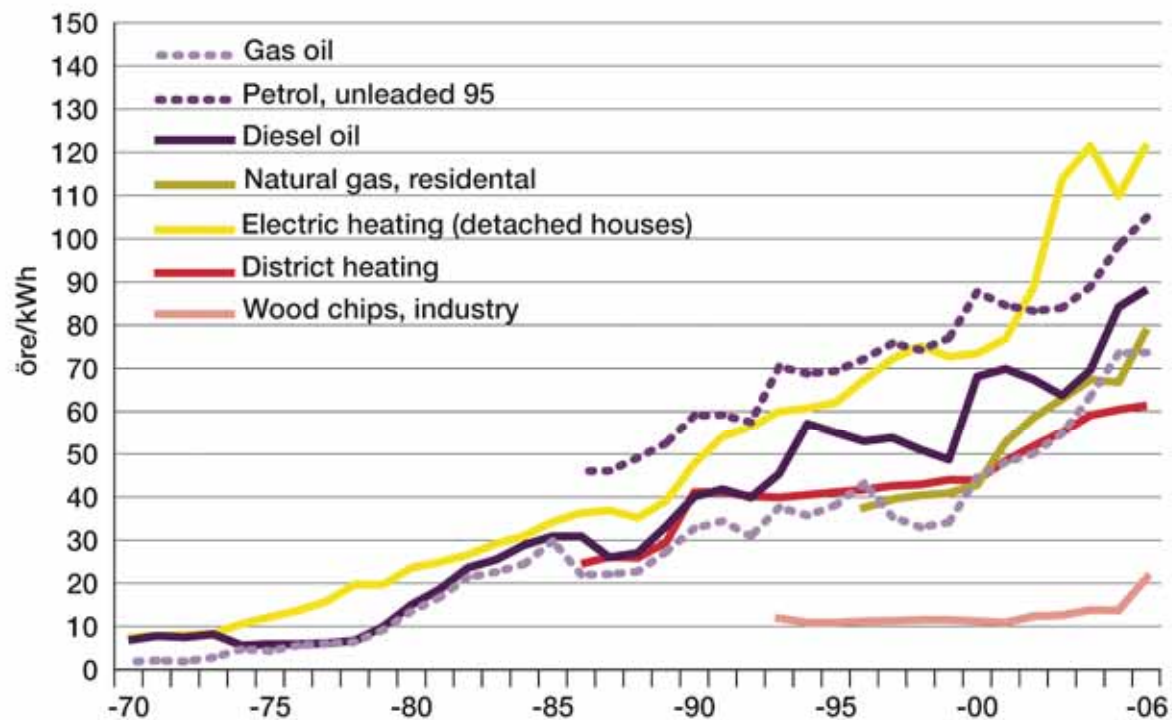
Note. The preliminary statistics for the use of wood fuels have been systematically over-estimated for several years. See the text for more details.

Figure 41: Deliveries of pellets to the Swedish market, 1997-2006



SOURCE: NATIONAL ASSOCIATION OF PELLETS INDUSTRIES (PIR)

Figure 42: Nominal commercial energy prices in Sweden, including tax, 1970-2006



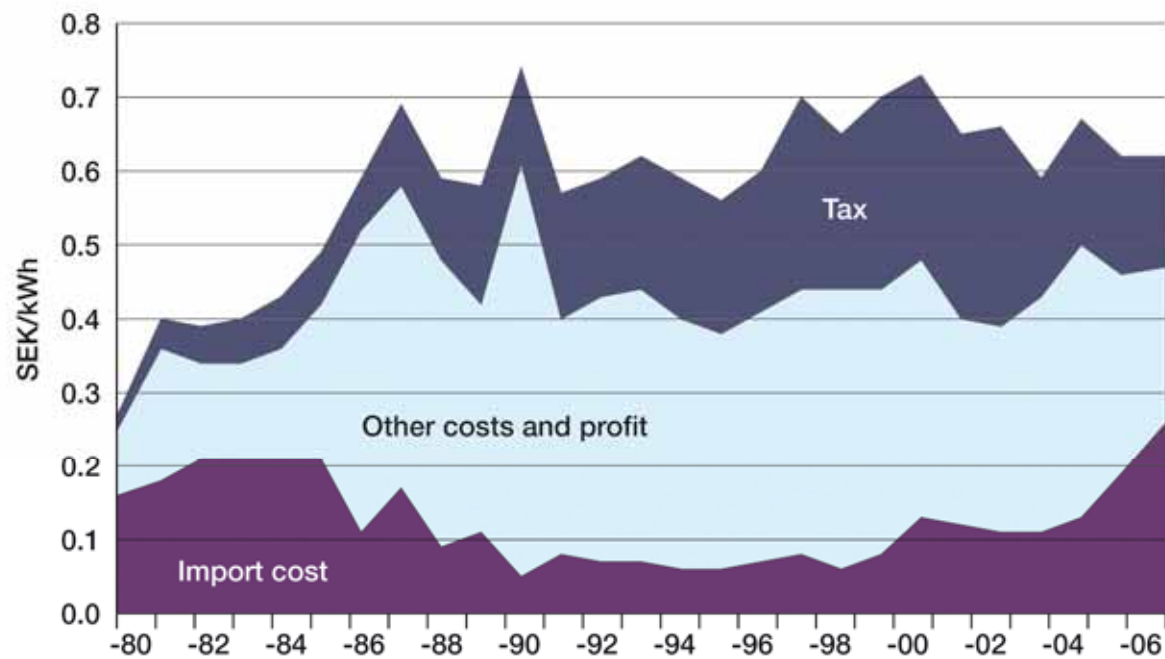
SOURCE: SWEDISH PETROLEUM INSTITUTE, STATISTICS SWEDEN, EUROSTAT
AND THE SWEDISH ENERGY AGENCY

Figure 43: Cost of 'raw' energy supplied, 1980-2006, 2006 price level



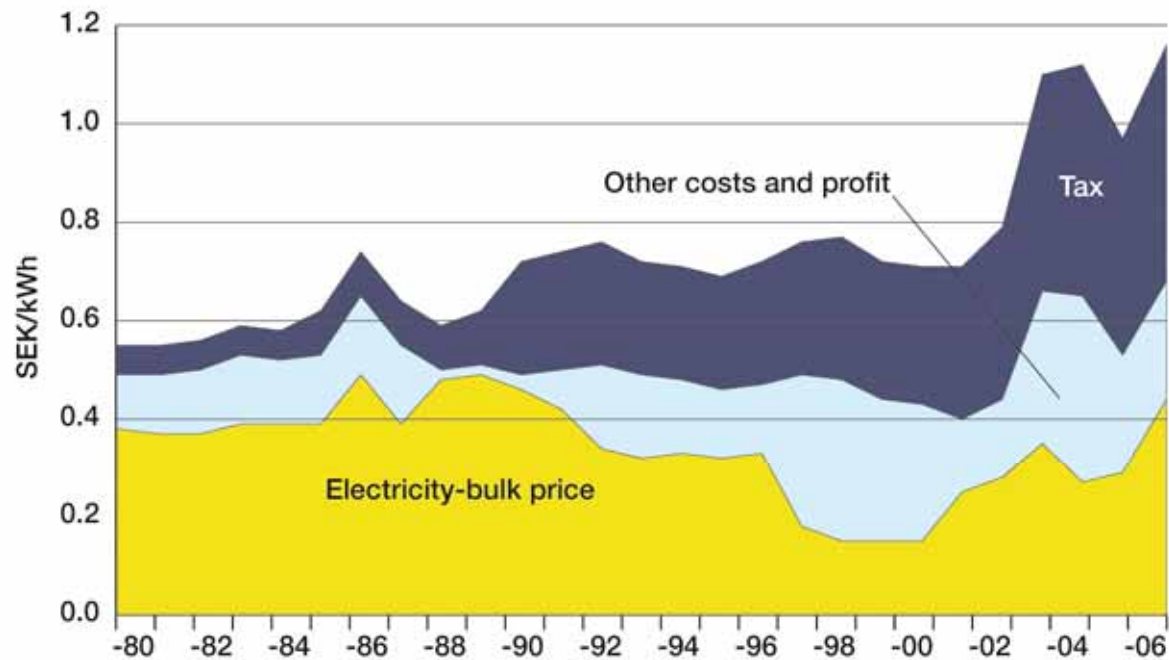
SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY AND THE BANK OF SWEDEN

Figure 44: Real cost development of imported fuels, 1980-2006, 2006 price level



SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY, THE BANK OF SWEDEN AND IEA: PRICES AND TAXES

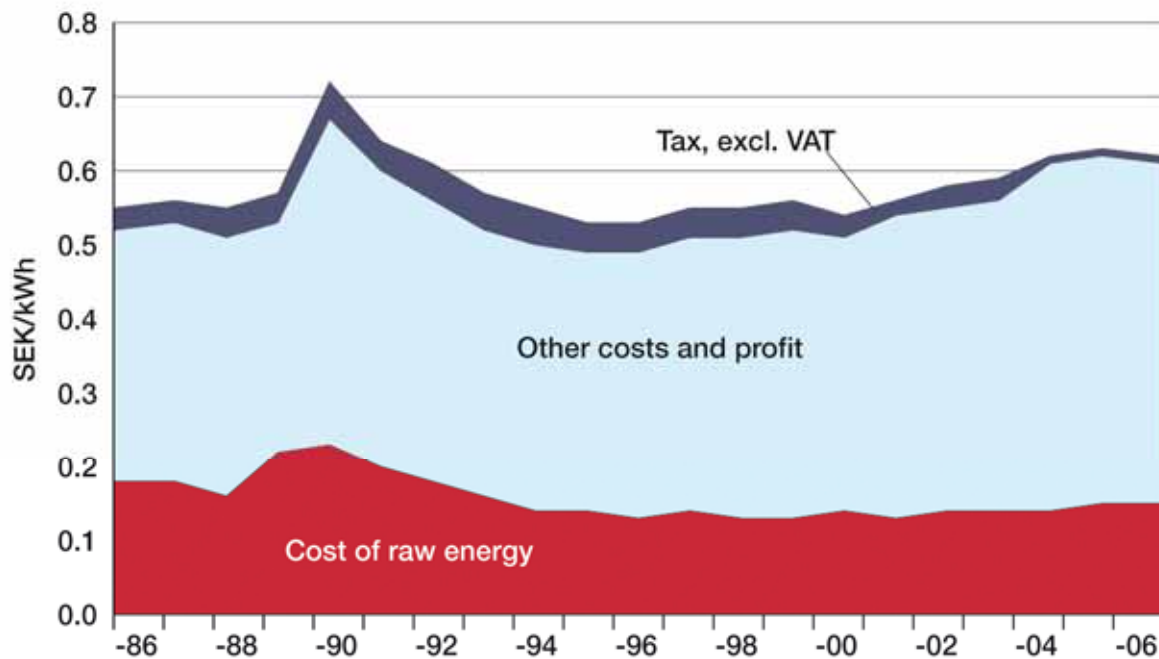
Figure 45: Real price of electricity, 1980-2006, 2006 price level



SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY AND THE BANK OF SWEDEN.

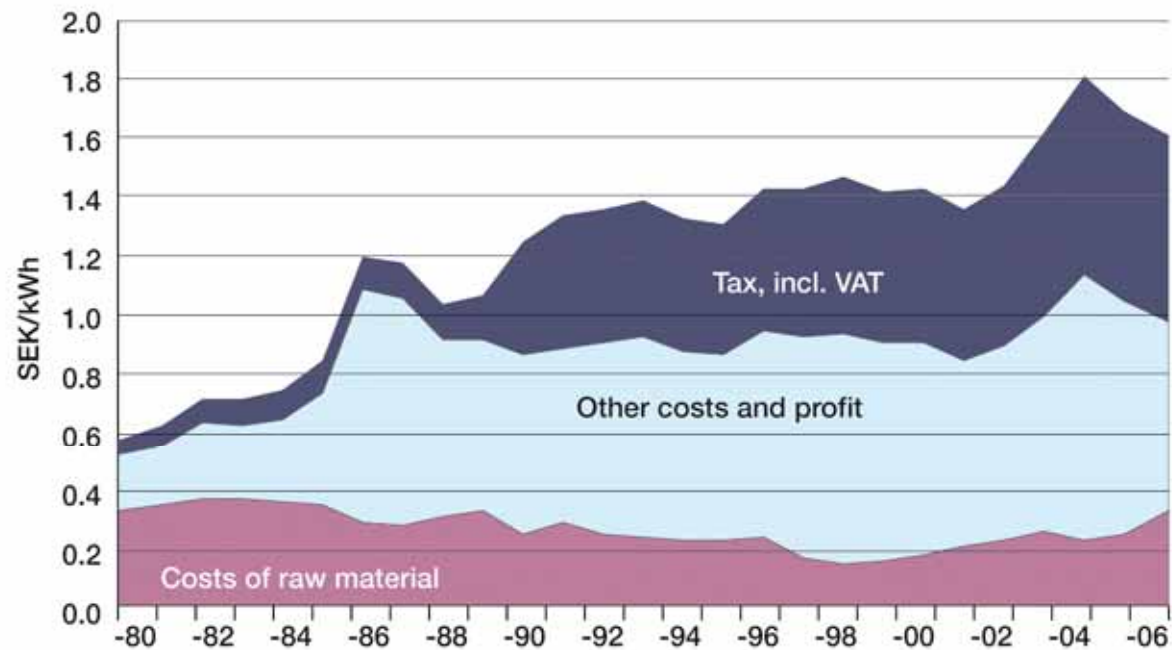
Note. Until 1996, the network costs were included in the price of electricity, but after 1996 were included in the companies' other costs.

Figure 46: Real cost development of district heating, 1986-2006, 2006 price level



SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY AND THE BANK OF SWEDEN

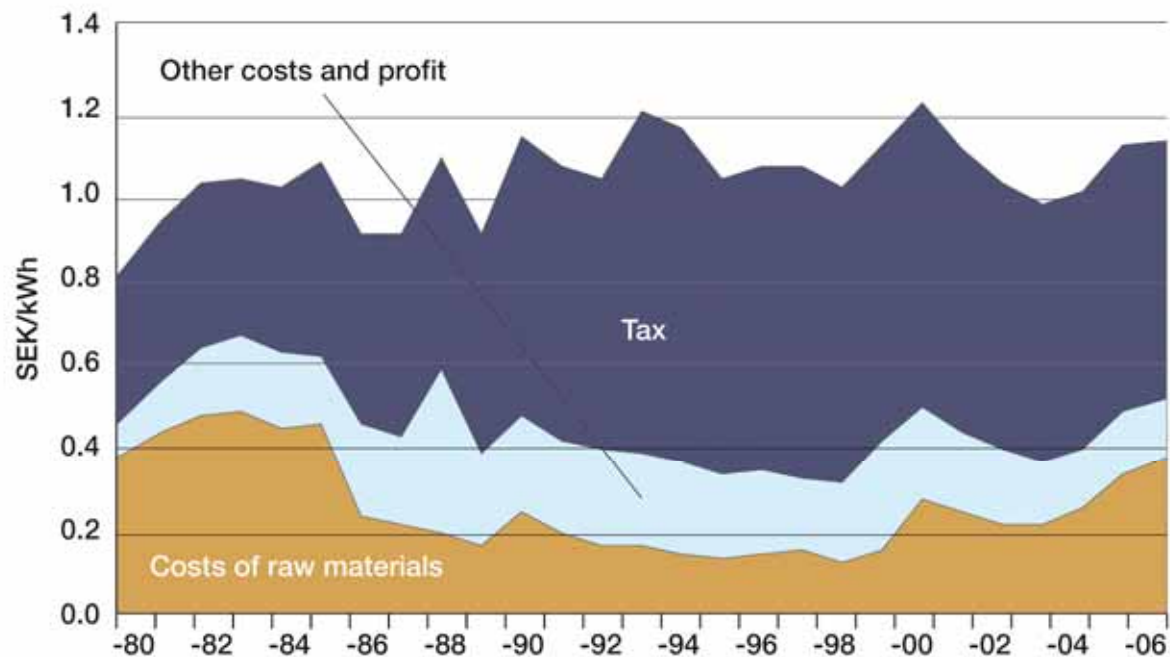
Figure 47: Domestic energy costs, 1980-2006, 2006 price level



SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY AND THE BANK OF SWEDEN

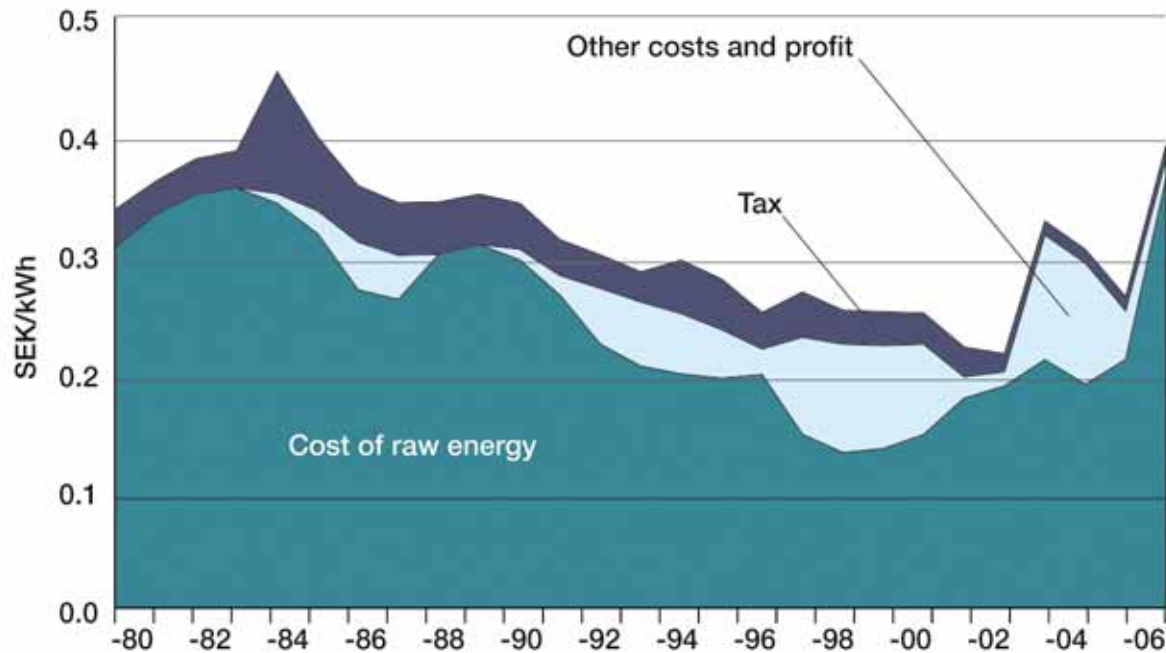
Note. Until 1996, the network costs were included in the price of electricity, but after 1996 were included in the companies' other costs.

Figure 48: Real price development of motor fuels, 1980-2006, 2006 price level



SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY, THE BANK OF SWEDEN
AND IEA: PRICES AND TAXES.

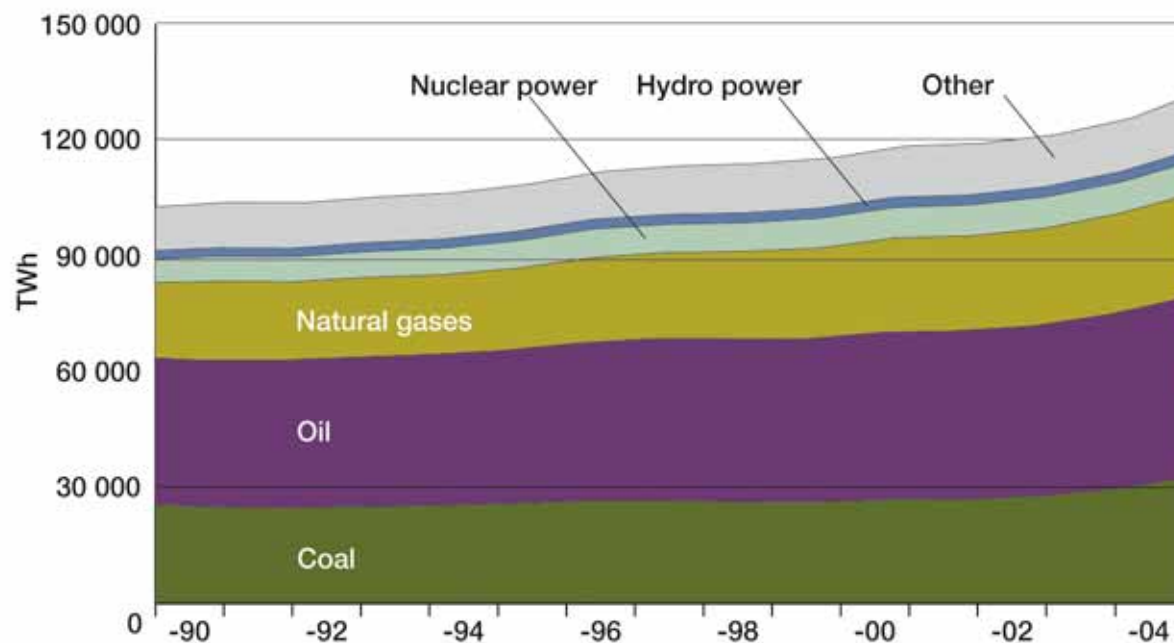
Figure 49: Energy prices in industry, 1980-2006, 2006 price level



SOURCE: STATISTICS SWEDEN, THE SWEDISH ENERGY AGENCY AND THE BANK OF SWEDEN

Note. Until 1996, the network costs were included in the price of electricity, but after 1996 were included in the companies' mark-ups.

Figure 50: Global supply of primary energy, 1990-2004



SOURCE: IEA ENERGY BALANCES OF NON OECD COUNTRIES, 2006

Figure 51: Oil prices in Europe, 2002-2006

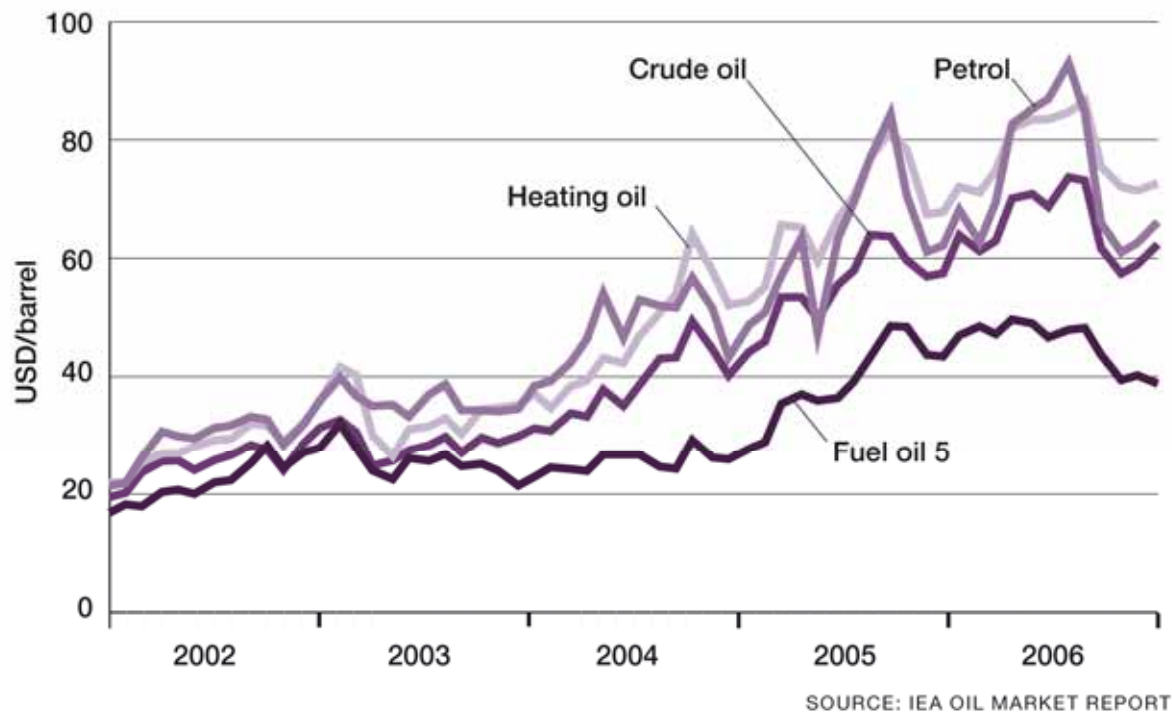
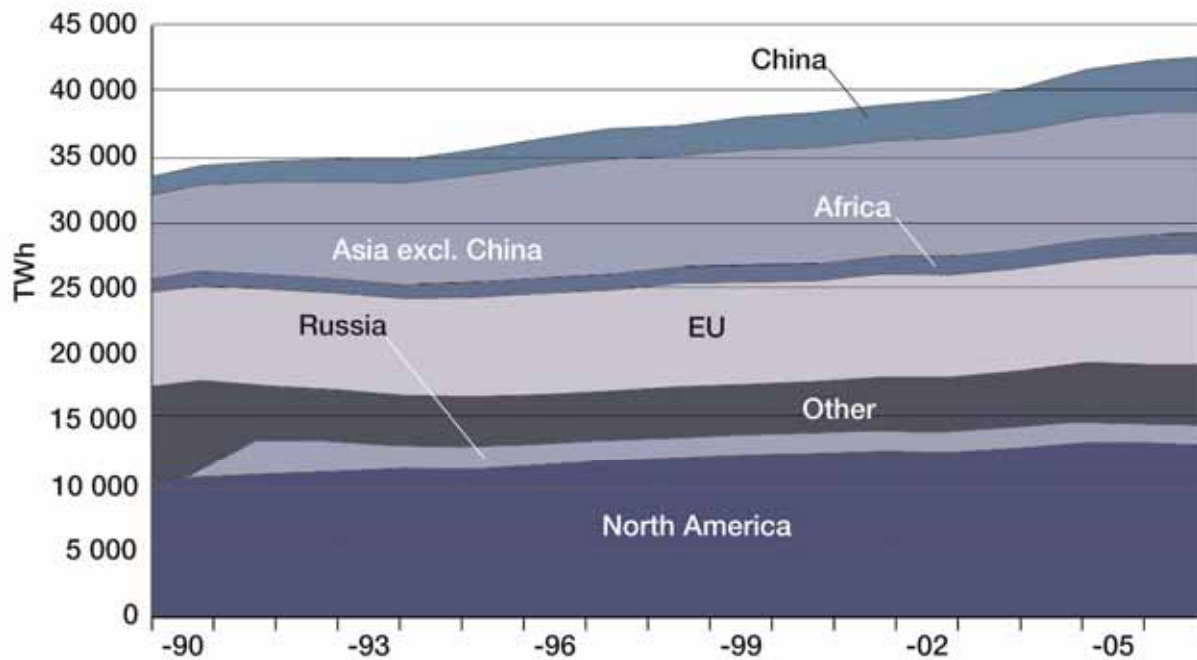
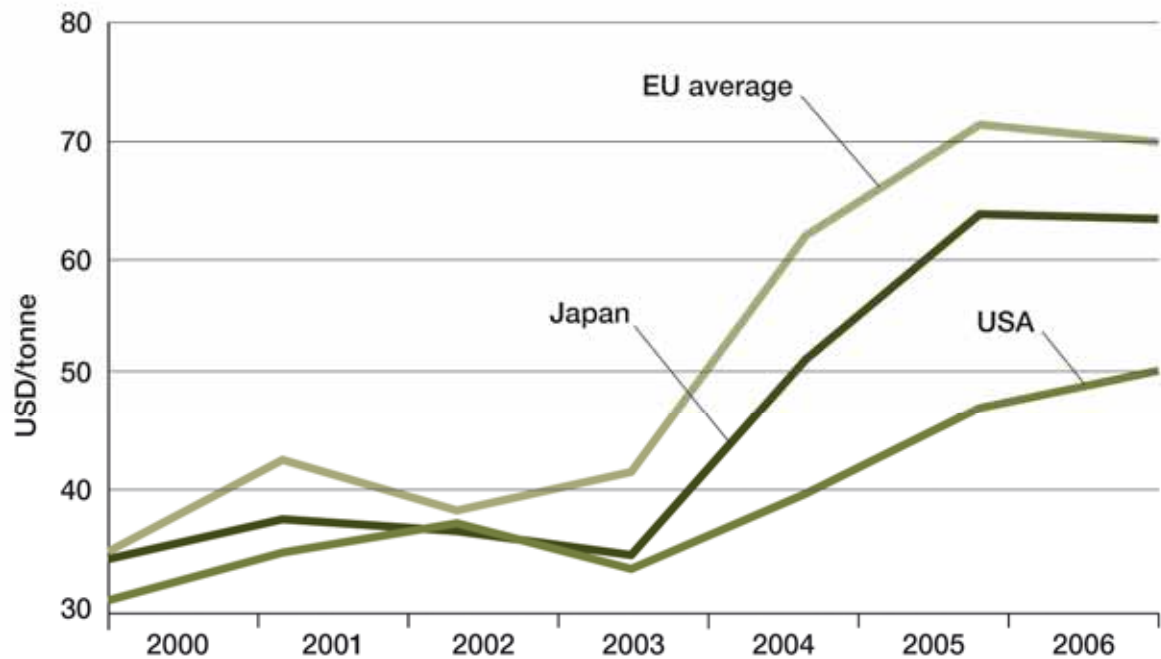


Figure 52: World use of oil, 1990-2006



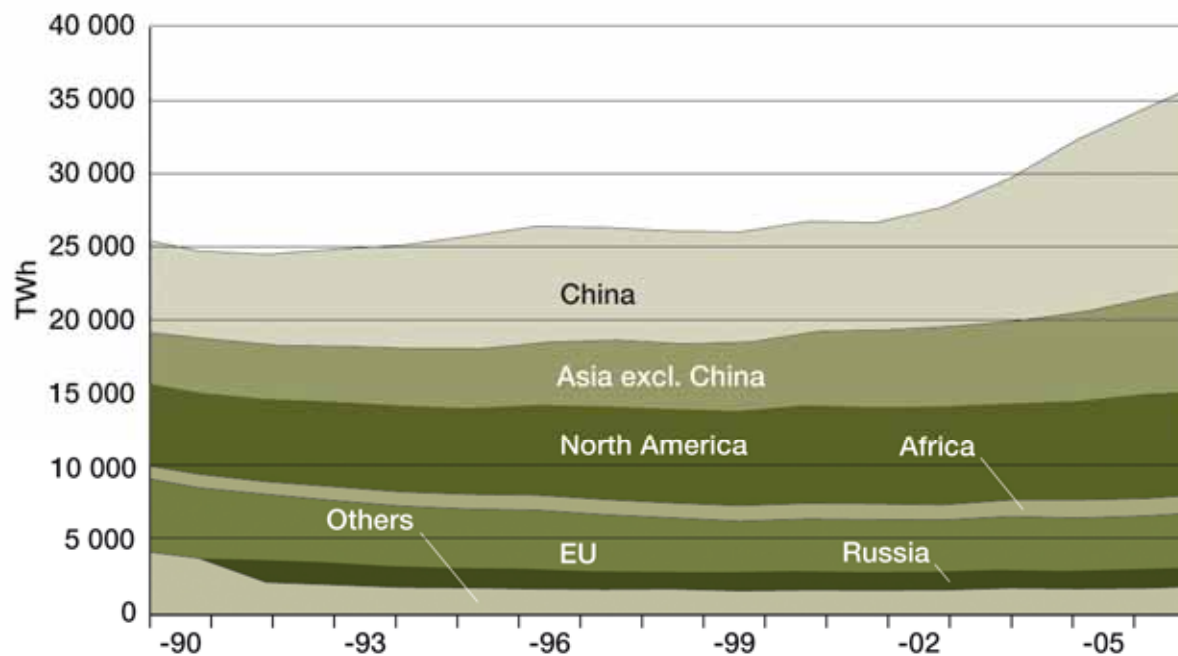
SOURCE: IEA ENERGY BALANCES OF NON-OECD COUNTRIES, 2006. IEA ENERGY BALANCES OF OECD COUNTRIES, 2007. BP STATISTICAL REVIEW OF WORLD ENERGY, 2007

Figure 53: Coal prices in Europe, USA and Japan, 2000-2006



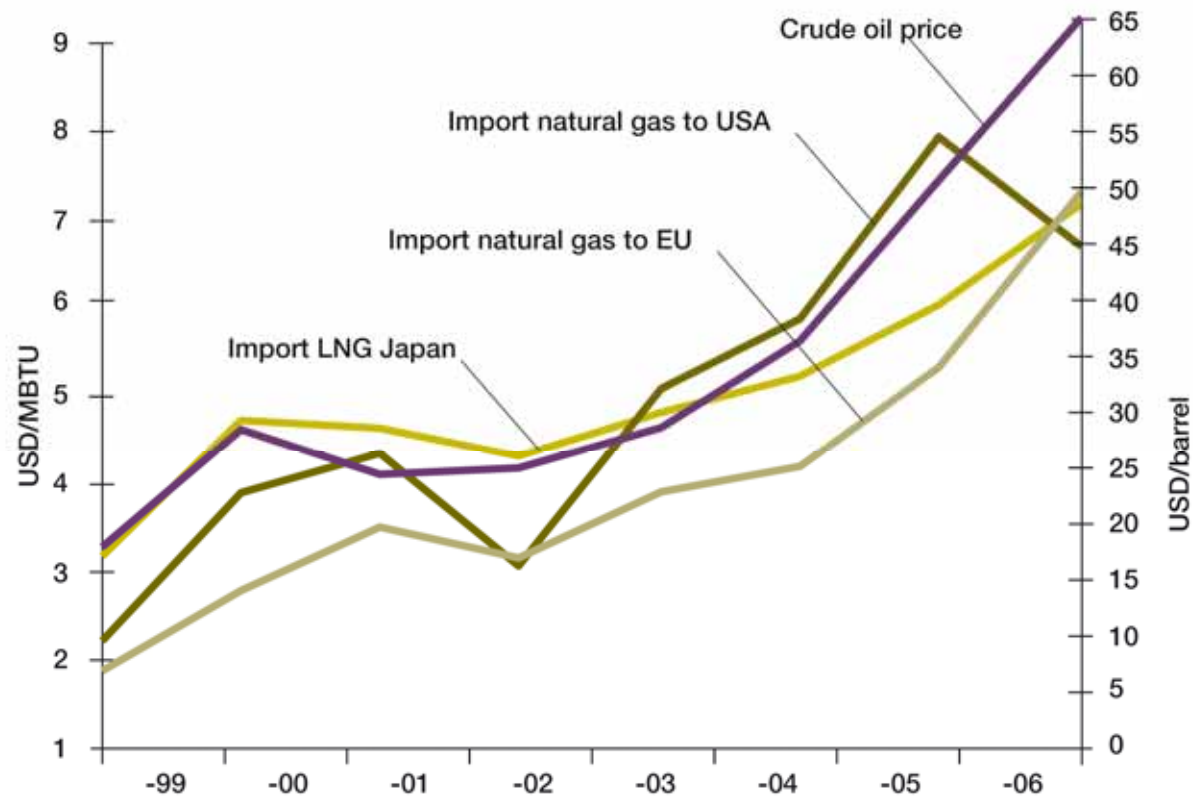
SOURCE: IEA ENERGY PRICES & TAXES, QUARTERLY STATISTICS, SECOND QUARTER 2007

Figure 54: World use of coal, 1990-2006



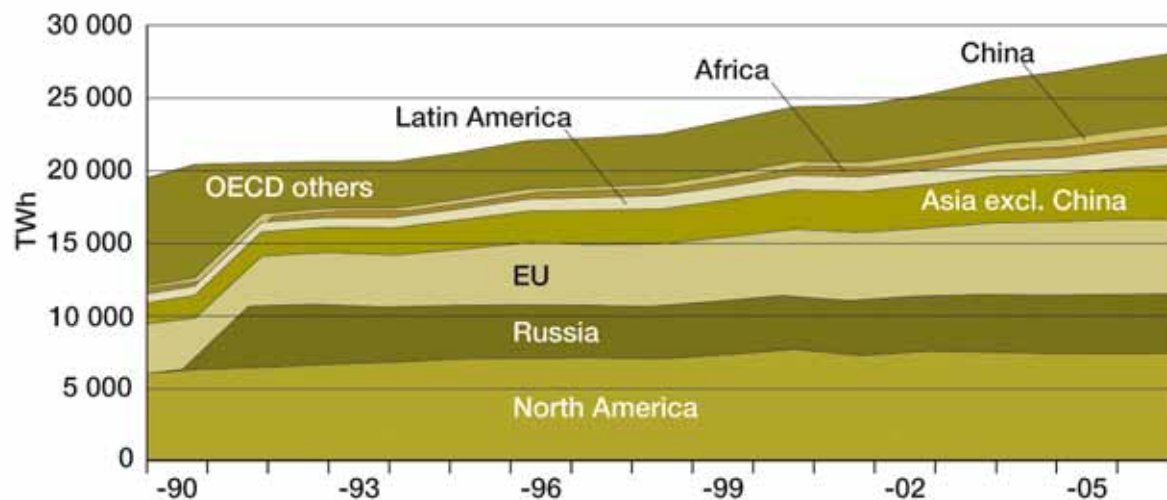
SOURCE: IEA ENERGY BALANCES OF NON-OECD COUNTRIES, 2006. IEA ENERGY BALANCES OF OECD COUNTRIES, 2007. BP STATISTICAL REVIEW OF WORLD ENERGY, 2007

Figure 55: Import price of natural gas and crude oil, 1999-2006



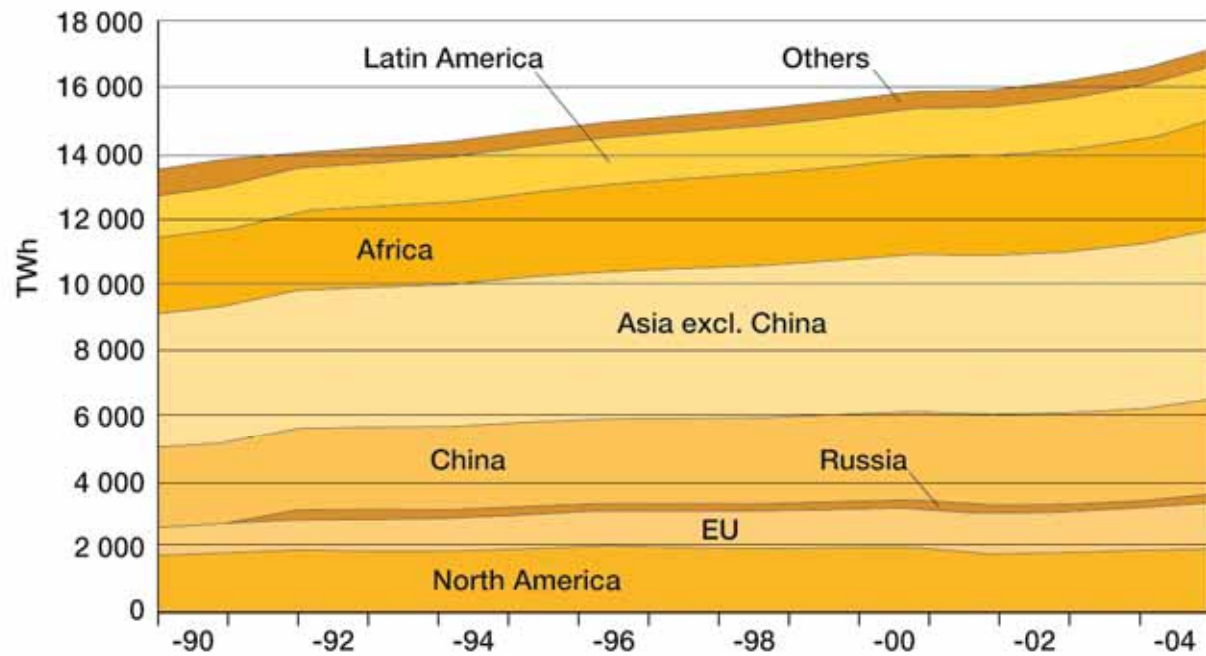
SOURCE: IEA ENERGY PRICES & TAXES, QUARTERLY STATISTICS, SECOND QUARTER 2007

Figure 56: World use of gas, 1990-2006



SOURCE: IEA ENERGY BALANCES OF NON-OECD COUNTRIES (2006 EDITION). IEA ENERGY BALANCES OF OECD COUNTRIES (2007 EDITION). BP STATISTICAL REVIEW OF WORLD ENERGY.

Figure 57: Use of renewable energy, 1990-2004



SOURCE: IEA ENERGY BALANCES OF NON OECD COUNTRIES (2006 EDITION)

IEA ENERGY BALANCES OF OECD COUNTRIES (2007 EDITION)

Figure 58: World use of energy, by sectors, 1990-2004

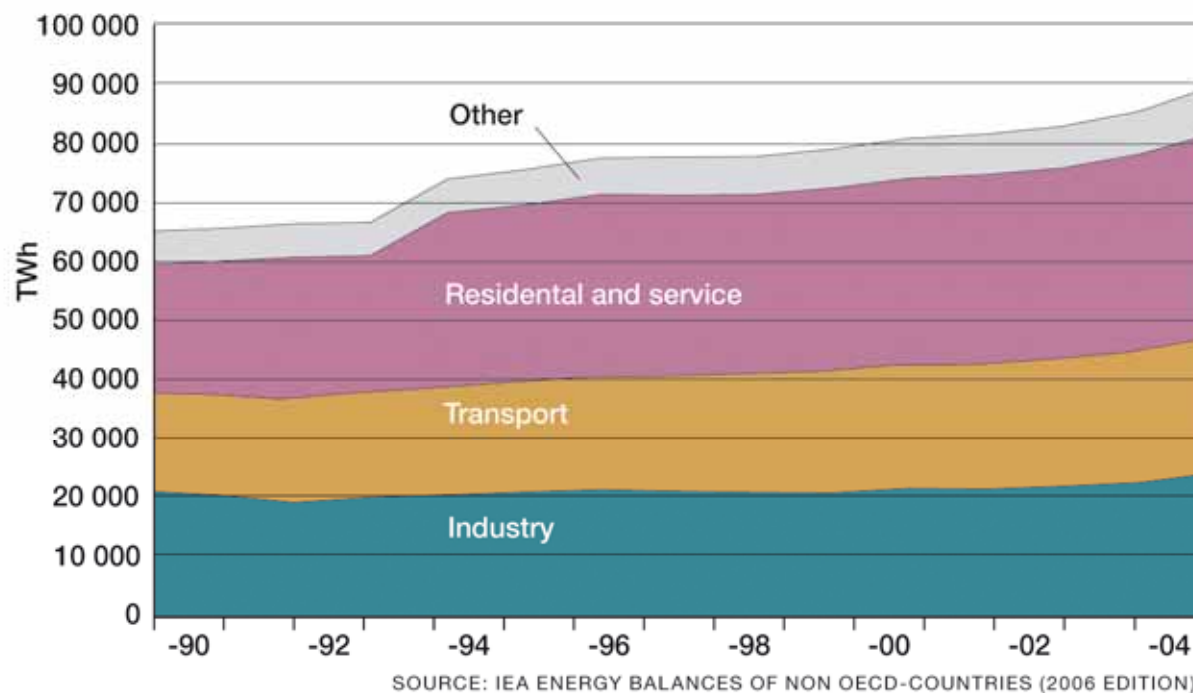
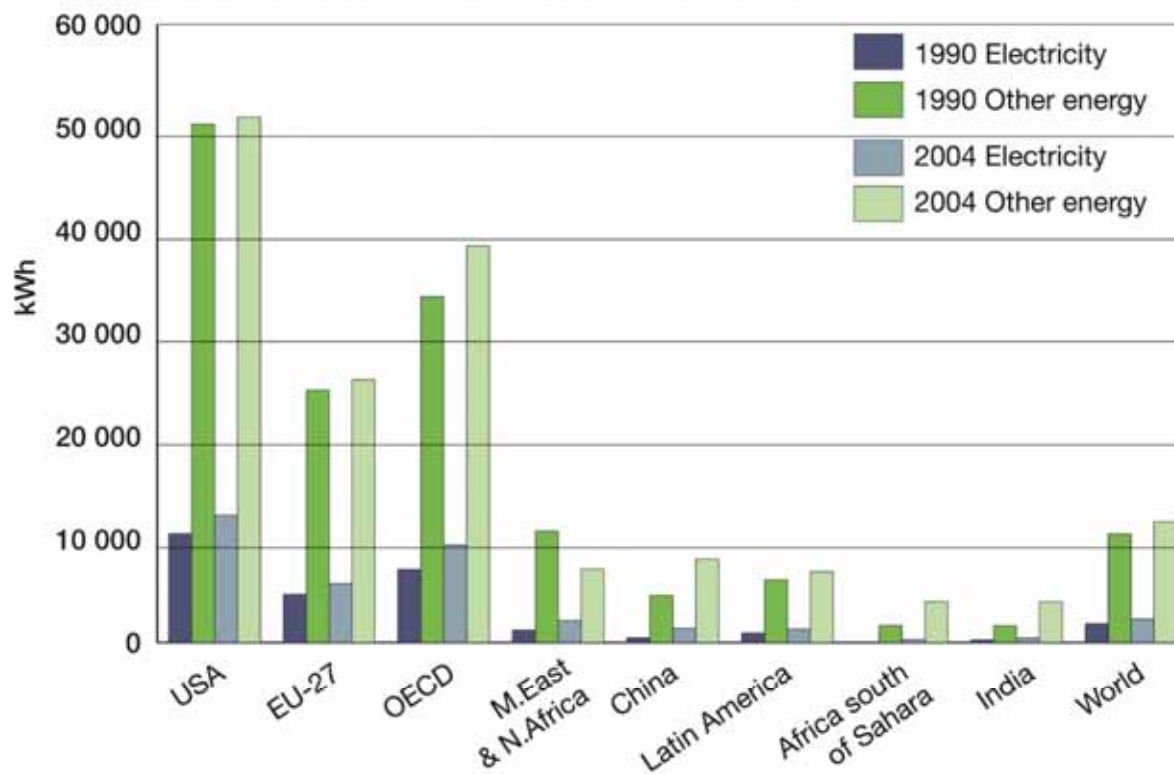
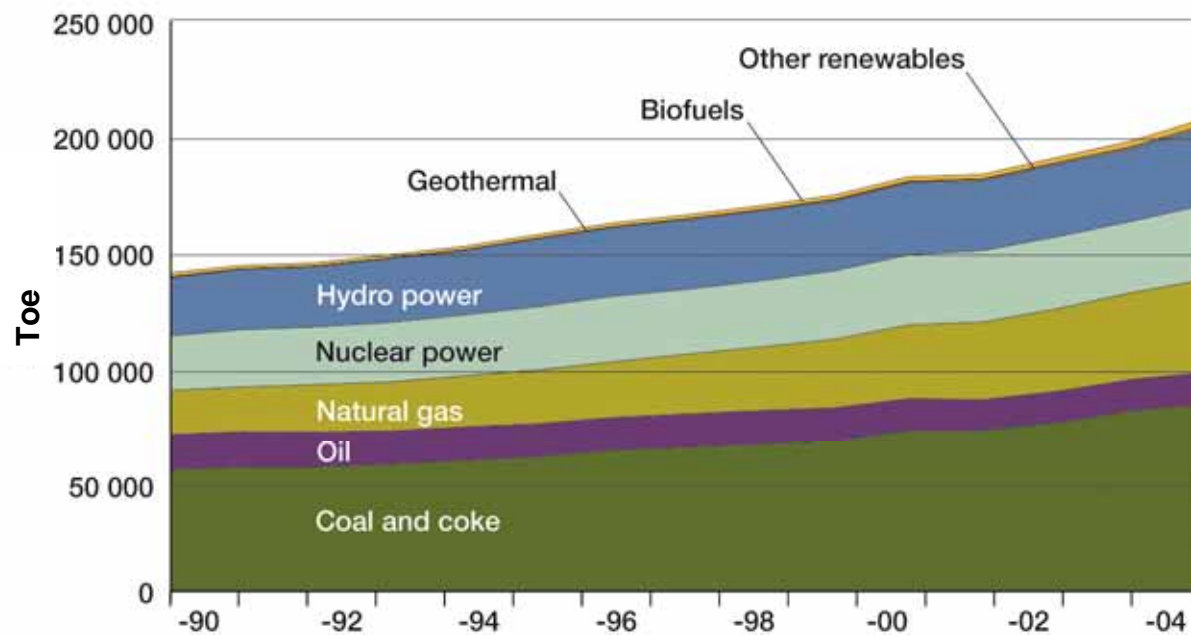


Figure 59: Regional per-capita energy use, 1990 and 2004



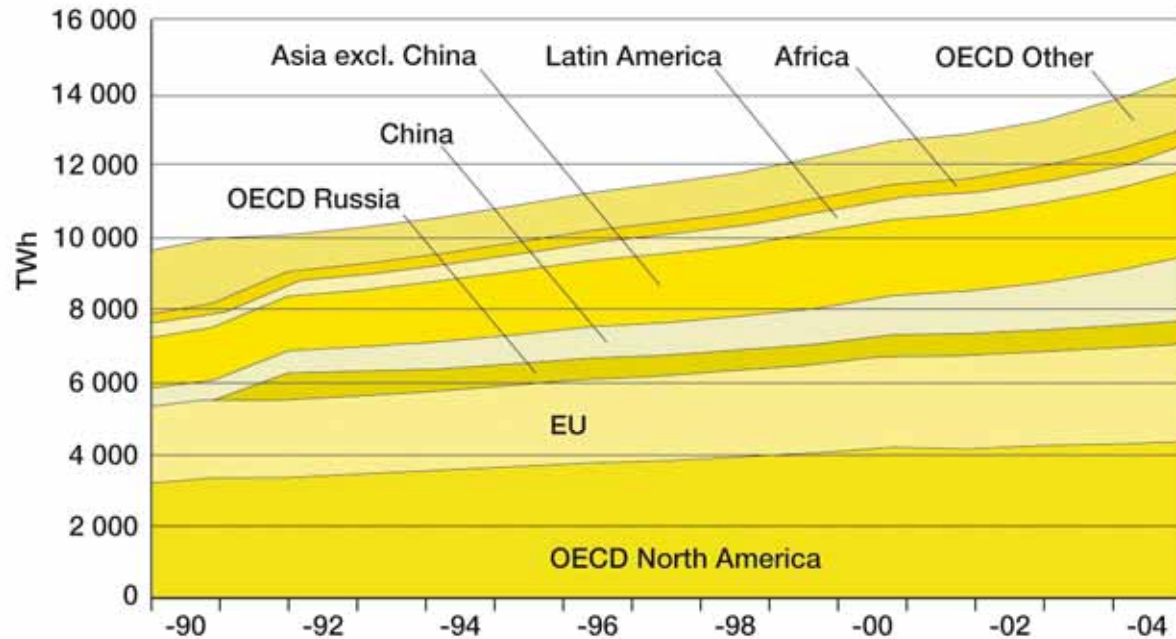
SOURCE: IEA ENERGY BALANCES OF NON-OECD COUNTRIES (2006 EDITION), AND THE WORLD BANK'S POPULATION STATISTICS

Figure 60: World electricity production, by type, 1990-2004



SOURCE: IEA ENERGY BALANCES OF NON-OECD COUNTRIES (2006 EDITION)

Figur 61: Regional world use of electricity, 1990-2004

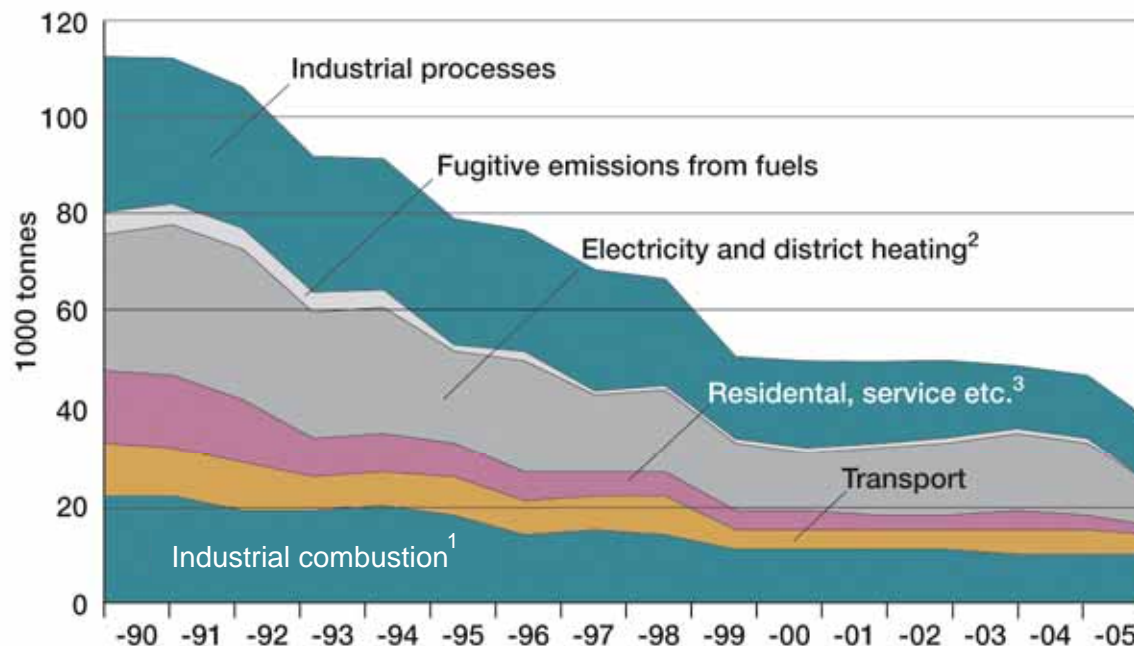


SOURCE: IEA ENERGY BALANCES OF NON-OECD COUNTRIES (2006 EDITION),

IEA ENERGY BALANCES OF OECD COUNTRIES (2007 EDITION)

IEA ENERGY BALANCES OF NON-OECD COUNTRIES (2006 EDITION)

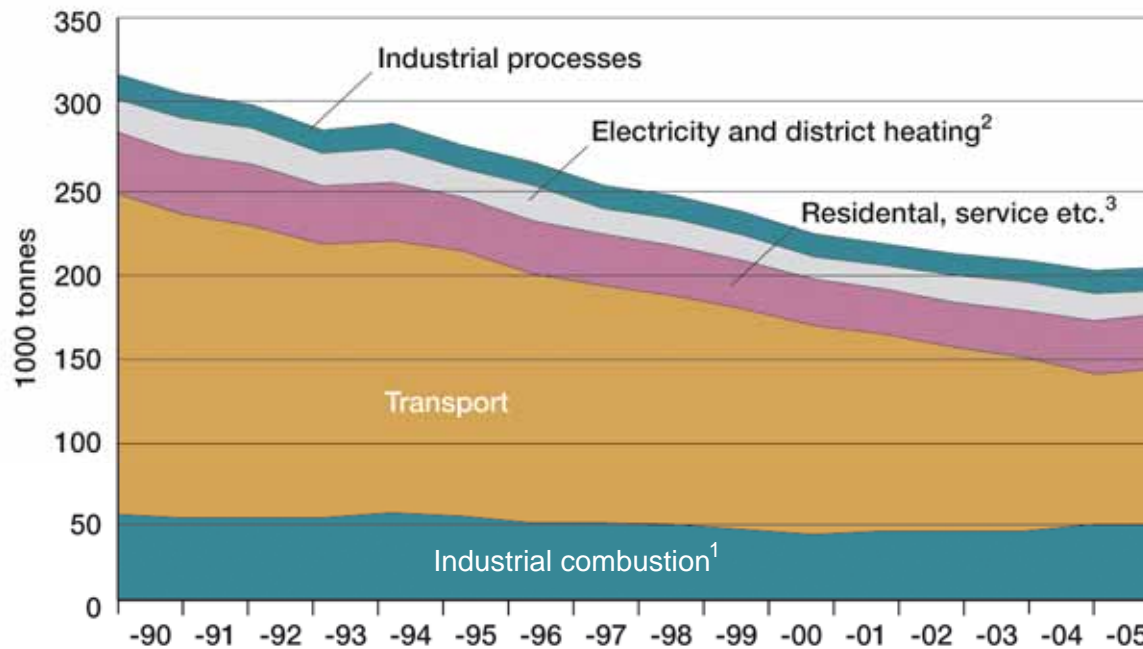
Figure 62: Sulphur dioxide emissions in Sweden, 1990–2005



SOURCE: SWEDEN'S REPORT TO THE UN AIR POLLUTION CONVENTION, SWEDISH ENVIRONMENTAL PROTECTION AGENCY, 2006. ADDITIONAL PROCESSING BY THE SWEDISH ENERGY AGENCY

Note. The method of calculation for emissions to air has been reviewed by the Swedish Environmental Protection Agency and by Statistics Sweden. Figures for all years have been revised in comparison with those shown in previous issues of Energy in Sweden. ¹ Includes industrial back-pressure production and waste incineration, ² Includes coking plants and oil refineries, ³ Includes agriculture, forestry and fishing.

Figure 63: NO_x emissions in Sweden, 1990–2005



SOURCE: SWEDEN'S REPORT TO THE UN AIR POLLUTION CONVENTION, SWEDISH ENVIRONMENTAL PROTECTION AGENCY, 2006. ADDITIONAL PROCESSING BY THE SWEDISH ENERGY AGENCY

¹ Includes industrial back-pressure production and waste incineration. ² Includes coking plants and oil refineries. ³ Includes agriculture, forestry and fishing.

Figure 64: Emissions of carbon dioxide from combustion, per capita and GDP, 2004 in EU and OECD states

Kg CO₂ per BNP (2000, US dollar)

