

Smart and sustainable use of energy

The changes in the production of electricity in Germany

- More than half of the energy is imported
- Coal makes up 45% of production
- Intention to eliminate use of nuclear power by 2022
- Coal production is declining since 2000

The changes in the production of electricity in Germany

- Share of renewable production in
 - '90: 19 billion kWh (4%)
 - 2016: 189 billion kWh (30%)
- Nuclear Power:
 - 30% in 2000
 - 13% in 2016
- Plans for CO2 emissions:
 - 40% reduction to '90 by 2020
 - 80% reduction by 2050

Alternatives Germany has started to reduce the use of fossil motor fuels

- bonus for purchasing an electric car
- testing free public transports in cities
- urging car manufacturers to producing electric cars (to rival american and chinese companies)
- Improved conditions for bike riders in cities

Changes in heating systems in buildings

- 37,6% of total energy consumption in Germany in buildings, 30% for heating
- Government adapted first energy conservation act in 1976 as response to oil crisis
- 70% of res. buildings over 35 years old
 - built before first thermal insulation ordinance, not properly & heated by fossil fuels
 - efficient new buildings use only 1/10 of the amount of energy

Changes in heating systems in buildings

- Demand change compared 2008
 - 11% less in 2013, 20% less in 2020
- Share of renewable energy compared to 2008
 - 13% more in 2014, 14% more in 2020
- 2013: 55 billion euros invested in energy efficiency improvements

Taking steps to reduce the consumption of energy

- ban of traditional light bulbs
- Shut down electric devices completely
- Unplug idle electronics
- Turn off lights

Main future developments in sustainable energy

- „Energiewende“ (power transition) to a low-carbon and nuclear-free economy
- Goals:
 - increase share of renewable energy production to 80% by 2050
 - Nuclear phase-out by 2022
 - Emission cut: 40% by 2020, 80% by 2050

Main future developments in sustainable energy

- Not reached goals:
 - Reduce greenhouse gas emissions by 40%
 - Reduce energy consumption by 20%
 - Increase share of renewables in final energy production by 20%