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Energy Efficiency and its role in the German „Energiewende“

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Cooperation with Central and Eastern European Countries and New Independent States

Investing in Energy Efficiency – 14 November 2012

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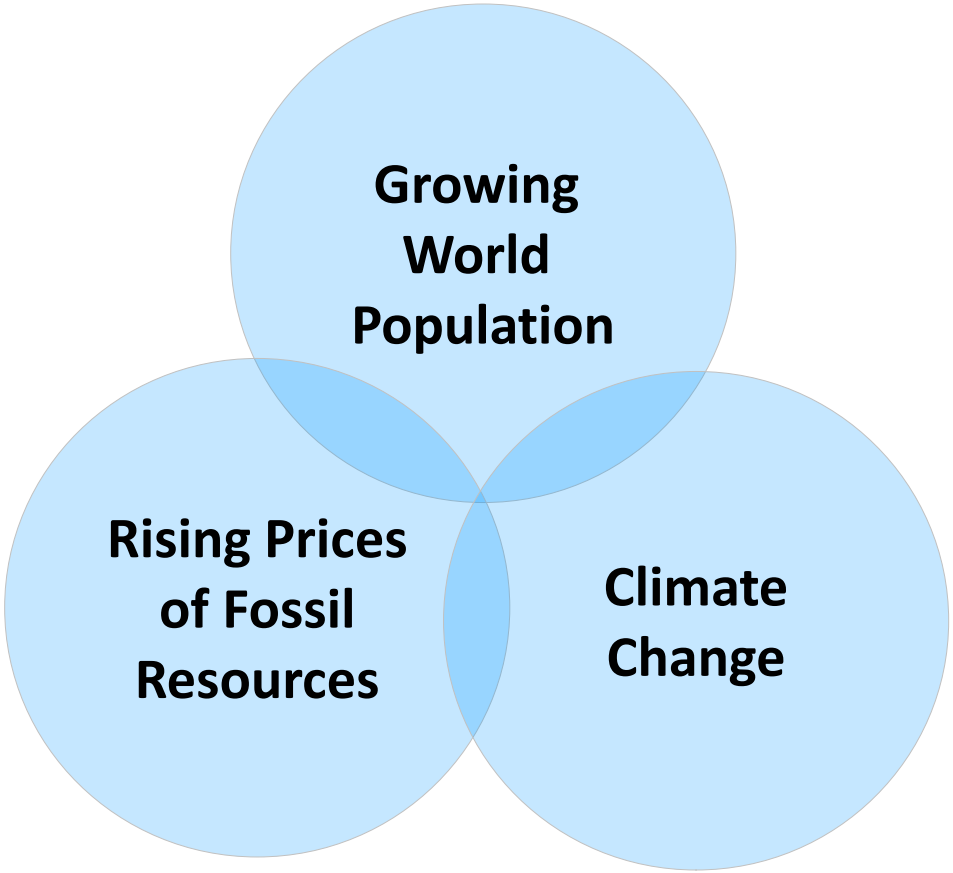
Energy Policy Challenges: Global Megatrends



- **Challenge:**
  securing a sustainable, i.e. secure, affordable and environmentally friendly energy supply for a growing population

- **Solutions:**
  energy efficiency, renewable energy sources, green economy

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Rationale of German Climate and Energy Policy

- **Energy Concept** of 28 September 2010:
  Defining our Climate and Energy policy for beyond 2020
  - fundamental transformation of German energy supply
  - nuclear power as bridging technology

- **After Fukushima** – re-evaluation of the role of nuclear power, accelerated decommissioning of nuclear power plants

- **Decisions of 6 June 2011:**
  - **Phasing-out** of nuclear energy by 2022
  - **Accelerating** transformation of energy system, comprehensive legislative package

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German Climate and Energy Policy
Targets and Timetables

		2020	2030	2040	2050
Climate	Greenhouse gases (vs. 1990)	- 40%	- 55%	- 70%	- 80 to - 95%
Renewable energies	Share of electricity	35%	50%	65%	80%
	Overall share (Gross final energy consumption)	18%	30%	45%	60%
Efficiency	Primary energy consumption	- 20%	● ● ● ● ● ● ● ● ● ● ● ● ● ▶		- 50%
	Electricity consumption	- 10%			- 25%
	Energy consumption in buildings	20% heat demand			80% primary energy

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German Climate and Energy Policy
German Energy Concept

100 specific measures in three areas

1. Renewable energies:

- swift and continuous expansion
- cost-effective and market integration

2. Energy efficiency:

- reducing energy consumption
- ensure efficiency

3. Grid infrastructure:

- expansion and modernisation
- integration of RE

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At the EU level …

Europe 2020 strategy:

- effiency is one of the core targets
- but: currently EU will miss energy efficiency target by half

→ EU Energy Efficiency Directive

- approved by Council on 4th October 2012
- Still only expected to yield energy efficiency improvements of 15 – 17% compared to the baseline

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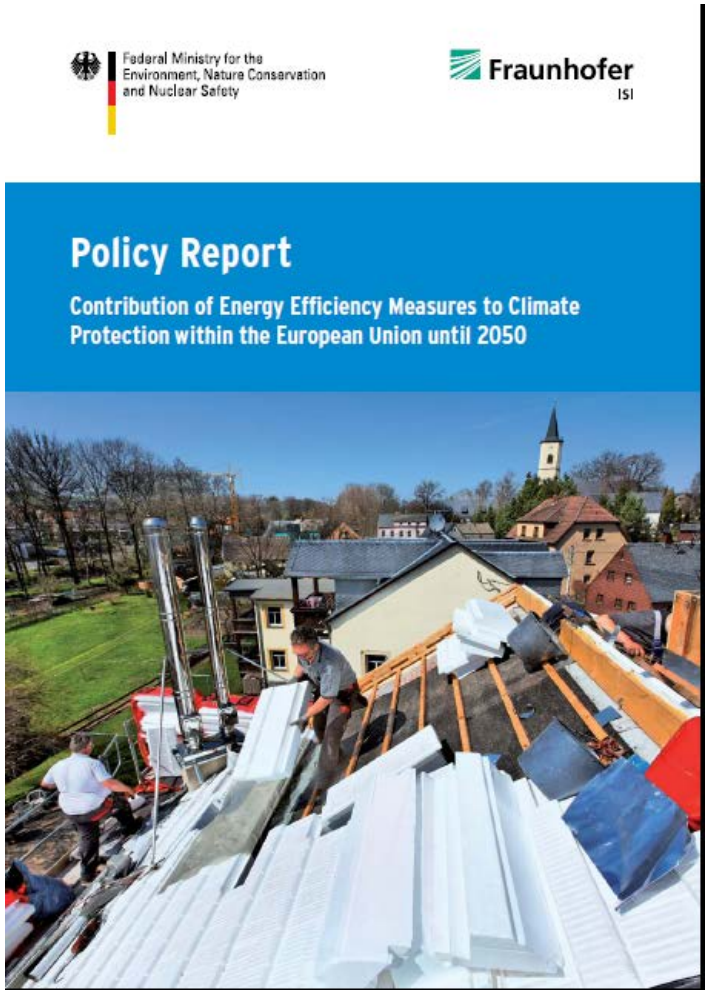
At the EU level:

tapping all economically viable energy efficiency measures until 2050 could …



- Save the equivalent of 11 x Poland‘s final energy demand from the year 2008
- Decrease the annual energy costs for each European citizen in 2050 by 1,000 €
- Reduce the EU‘s energy imports by 118 percent
- Decrease GHG emissions by 79 percent below the level of 1990

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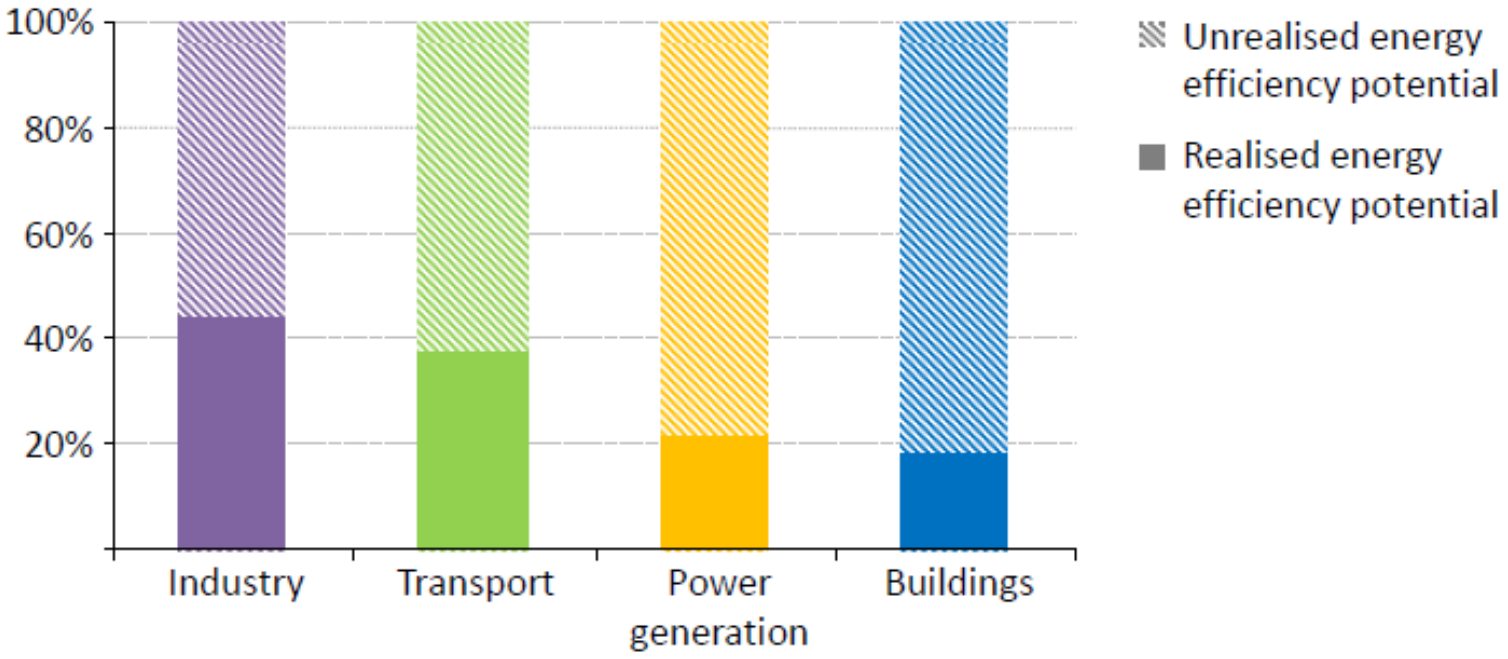
At the global level: A huge opportunity going unrealized

Energy efficiency potential used by sector in the New Policies Scenario



Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035

WORLD ENERGY OUTLOOK 2012

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The role of the state

Implementing a balanced an efficient mix of instruments

- **Legislation, regulations and ordinances … to establish the regulatory framework**
  - Energy Savings Ordinance, Energy Consumption Labelling Ordinance, Energy certificates for buildings, …
- **Economic instruments … to create financial incentives**
  - Emission Trading, …
- **Funding Programmes … to facilitate upfront investment**
  - Energy Efficiency Fund, KfW Efficient Renovation Programme, Law on Cogeneration, …
- **Information and advice … to lower information costs**
  - Information, Consultation, Labeling, Energy Efficiency Campaign, ECO Management and Audit Scheme (EMAS), …

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National funding programms

National funding programme	Eligibility	Funding volume 2012***
CO_2 Building Modernisation Programme	Energy upgrading of buildings; construction of energy-efficient buildings.	€1.5 billion*
Market Incentive Programme for Renewable Energies (MAP)	Investments in heat generation from renewable energies for homeowners and businesses.	€350 million
National Climate Initiative	Municipal climate projects; projects for industry, consumers and the education sector.	€168 million
Energy efficiency funding measures, Energy Efficiency Fund	Energy advice for consumers and businesses; investments in electricity saving.	€180 million
Research funding: renewable energies and energy efficiency	Research and development in the renewable energies and energy efficiency sectors.	€528 million**
Research funding and market introduction of renewable resources	Research, development and market introduction in the bioenergy and renewable resources sector.	€65 million
Electromobility	Research, development and demonstration of electromobility.	€323 million
Total		€3.114 billion

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Contributions of sectors

- efficient power generation→ primary energy
- efficient consumption → final energy
  - Buildings, Households
  - Industry
  - SMEs
  - Cities/Communities
  - etc.

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Efficient Buildings

- 40% of end-energy demand comes from the building sector.
- Targets (Energy Concept)
  - **-20% in 2020**
  - **-80% in 2050**

Source: BMU

→ refurbishment rate must rise from 1% to 2% per year

→ very low energy standard (“Climate neutral”) for new houses from 2020 (latest) (EPBD)

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Efficient Buildings

Standards for new buildings

→ Energy Saving Ordinance "EnEV"

Subsidies

- (1.5 bn €/a 2012 - 2014) for refurbishing buildings (better insulation, more efficient heating) → Program: Energy Efficient Renovation (KfW)
- low interest rates and grants for energy efficient new buildings above standard (Program KfW 40, 55, 70)

Energy "passport" for buildings provides information on energy demand for prospective buyer or tenant.

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Efficient Power Consumption in Households

- Information / Labeling (EU)
- Audits and consultation on energy saving in low income households (Climate Initiative):
  - Training for unemployed people, who then provide basic on the spot advice to low income households.
  - 2008 – 2012: installation of ca. 800.000 energy efficiency appliances in 70.000 households
  - average savings of 395 kWh electricity r energy and water costs per year

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„Mindful also of its responsibility towards future generations, the state shall protect the natural foundations of life …“

Basic Law for the Federal Republic of Germany, Article 20a

Further information: www.bmu.de

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