



Federal Ministry
of Economics
and Technology



Energy

Towards a sustainable economy - German experiences in the fields of energy efficiency and renewable energies

Miriam Schroeder (M.A.)
on behalf of
the Federal Ministry of Economics and Technology

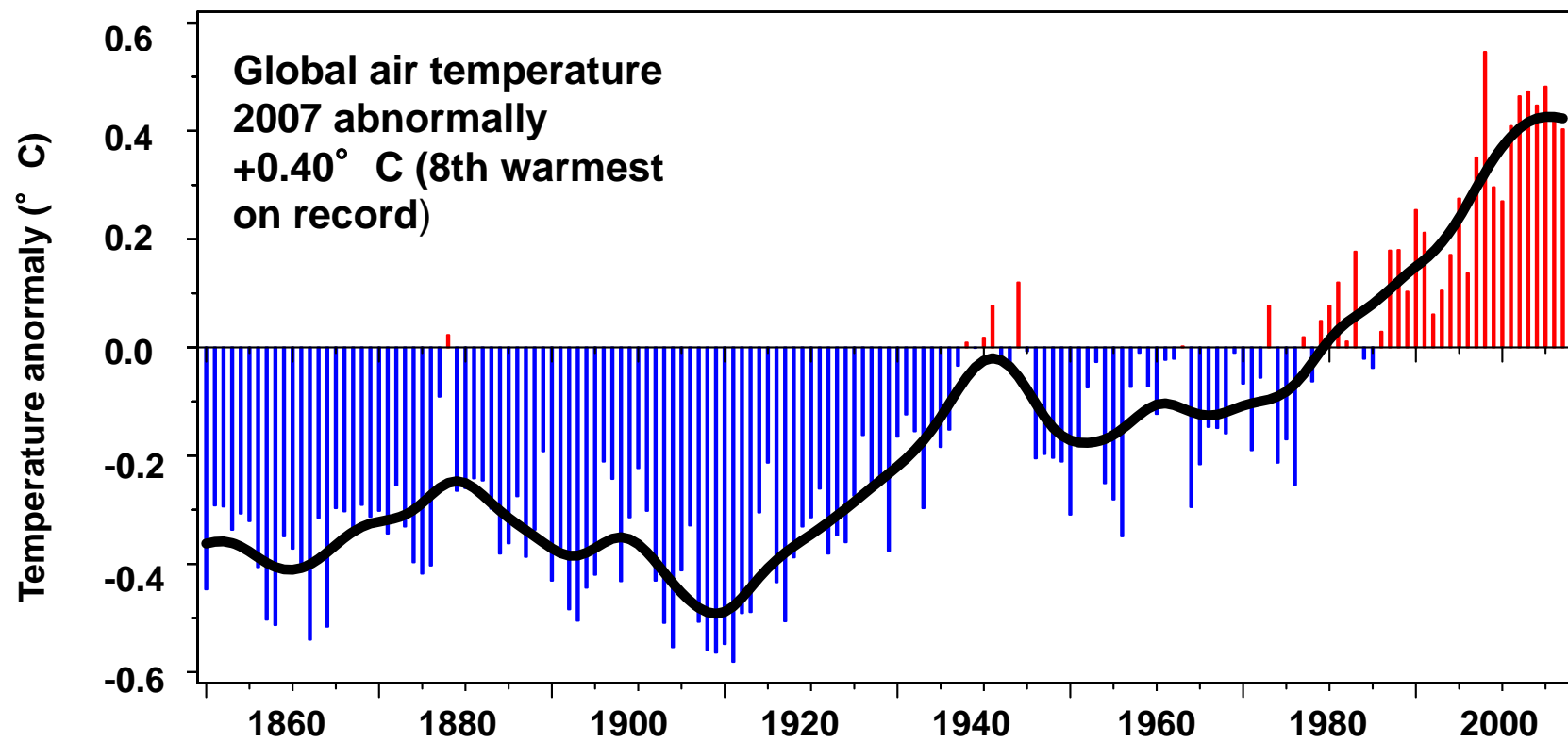
ENEREXPO Vietnam, Hanoi, 18 March 2010



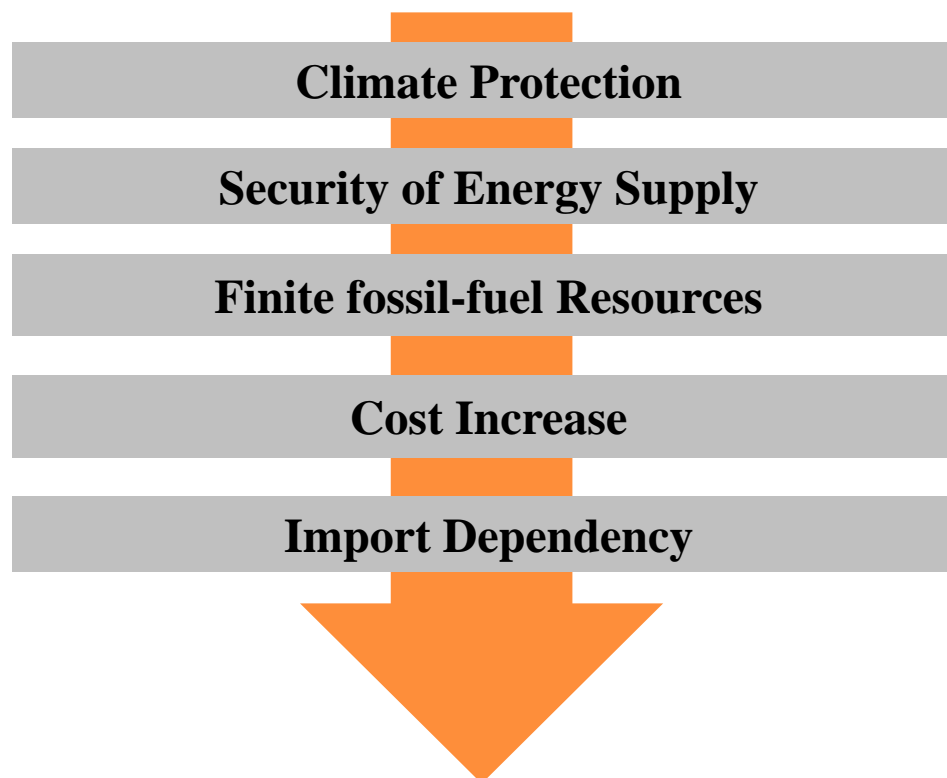
Contents

- I. Climate protection and security of energy supply
- II. Renewable energy technologies in Germany
- III. Energy efficiency
- IV. Opportunities for cooperation

I. Climate protection and security of energy supply



I. European Energy Policy – Targets for 2020



-20%

Total Primary Energy Supply

20%

**RES share of Final Energy Consumption
(incl. 10% Biofuels)**

-20%

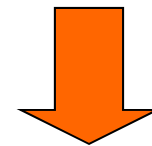
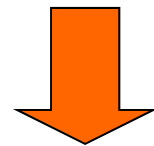
**GHG Emissions
against 1990, minimum**

I. Climate protection and security of energy supply

High Dependence on Energy Imports: 74.5 % in total

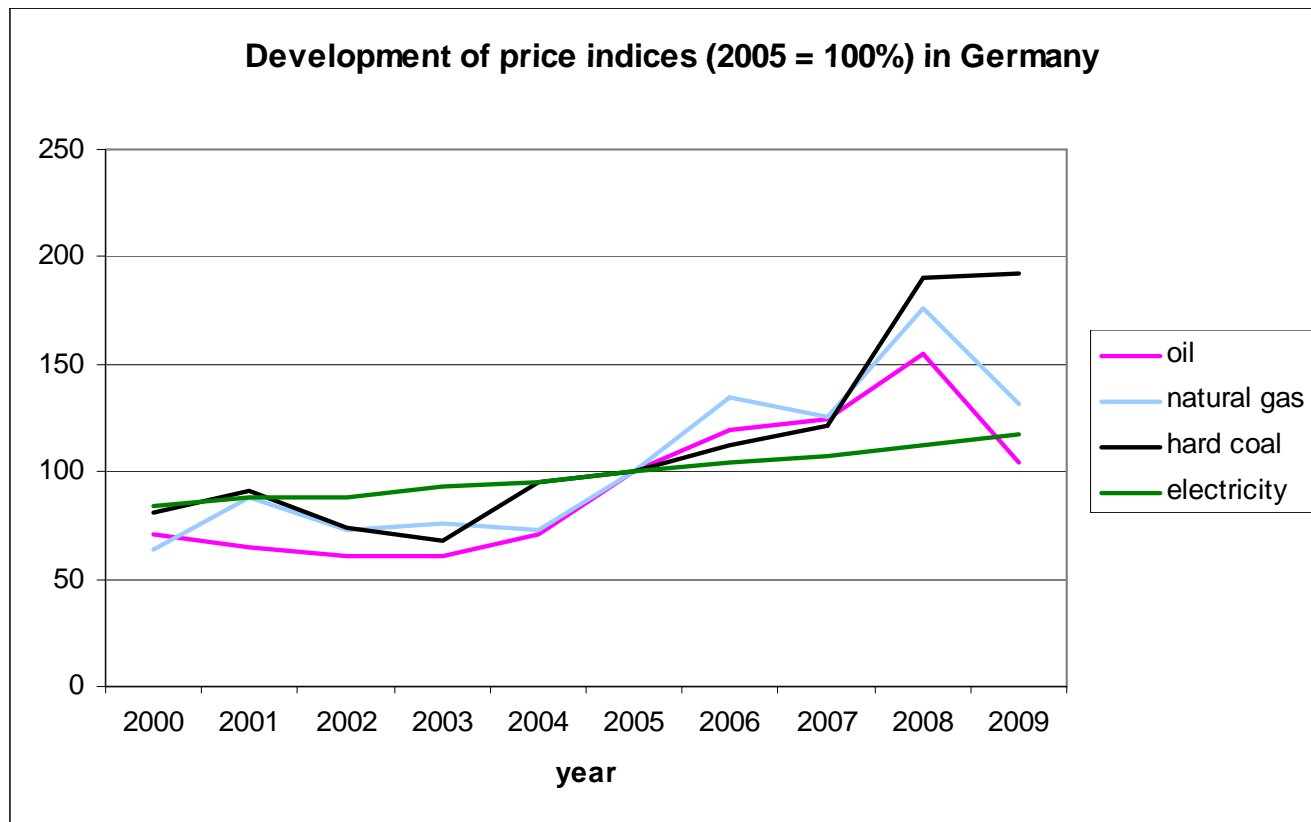


66 % Hard Coal
84 % Natural Gas
96 % Petroleum
100 % Uranium



**Promotion of
renewable energy sources and energy efficiency
are two pillars of the German energy policy**

I. Climate protection and security of energy supply



Fuel oil:

Trend + 4% p.a.

Natural gas:

Trend + 8% p.a.

Electricity:

Trend + 12% p.a.

hard coal:

Trend + 4% p.a.

II. Primary Energy Consumption

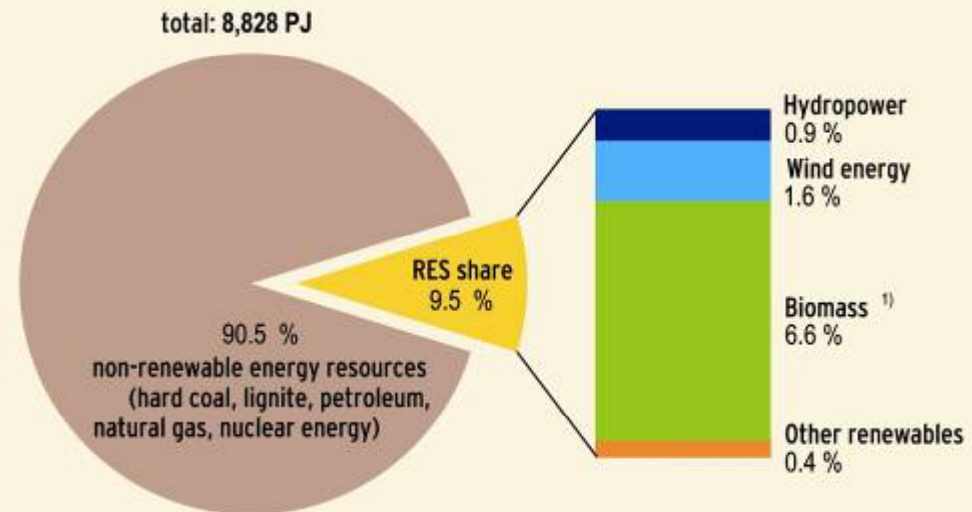
Shares of renewables among total final energy consumption in Germany, 2008

Final energy supply from renewables:
approx. 233 TWh (840 PJ)
(9.5 % share of total final energy consumption)

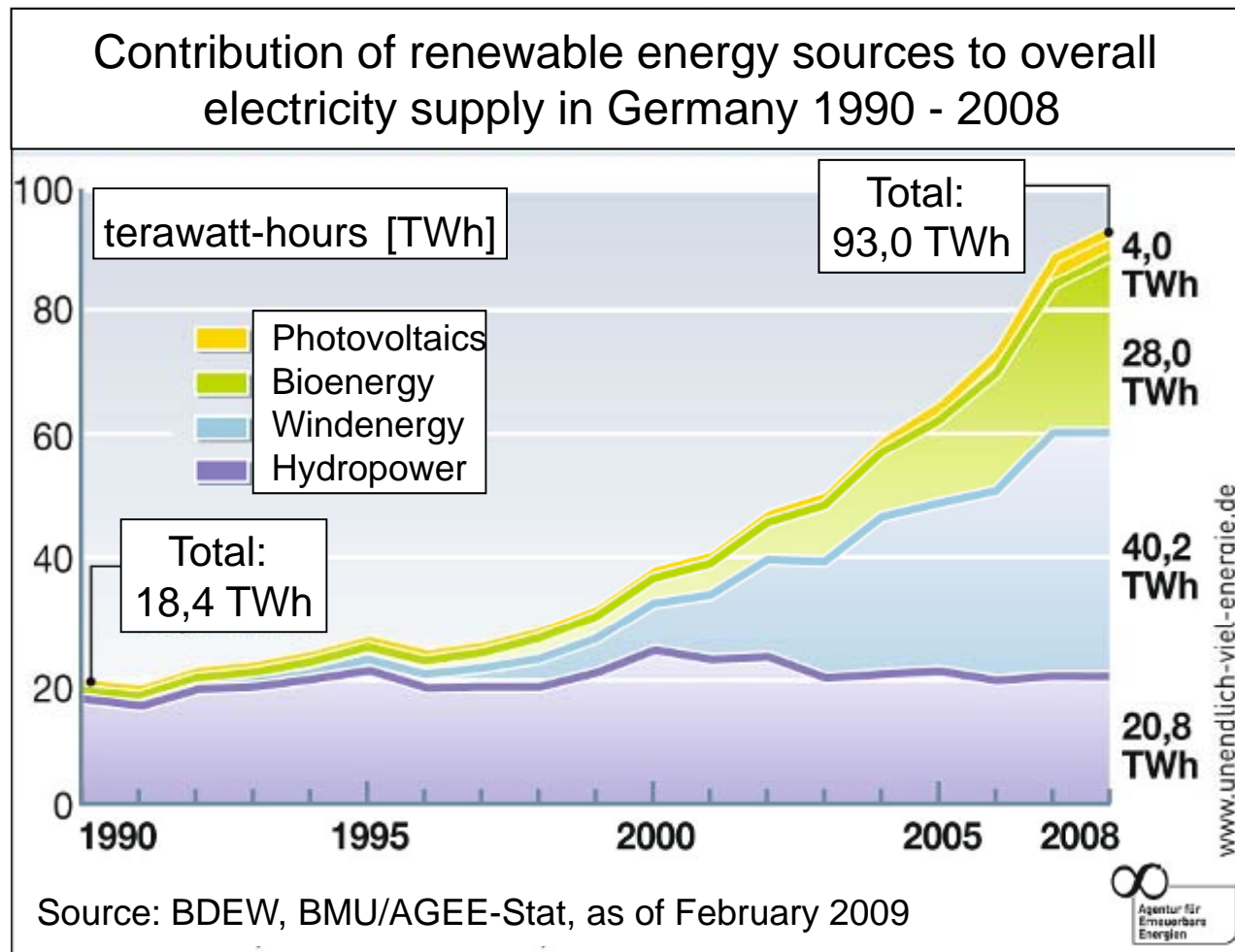
RES Renewable energy sources

1) Solid, liquid, gaseous biomass, biogenic portion of waste, landfill and sewage gas, and biogenic fuels

Source: BMU publication „Renewable energy sources in figures - national and international development“, Status: June 2009



II. Renewable Energy Sources Act (EEG)



II. German RES-Policy

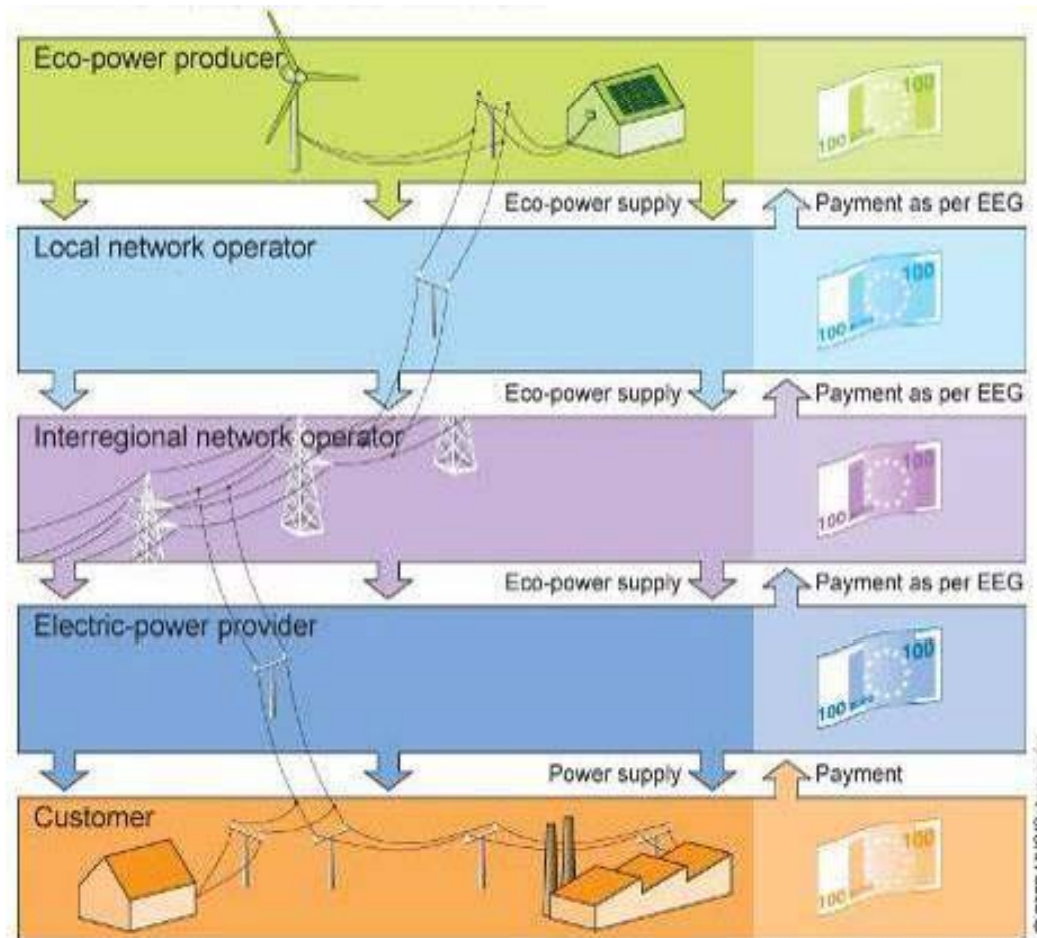
- ▶ Renewable Energy Feed-in Tariff System (EEG):
RES power
- ▶ Market Incentives Program:
grants and loans for RES heat
- ▶ Research and Development Support
- ▶ Tax incentives (partly for bio fuels)



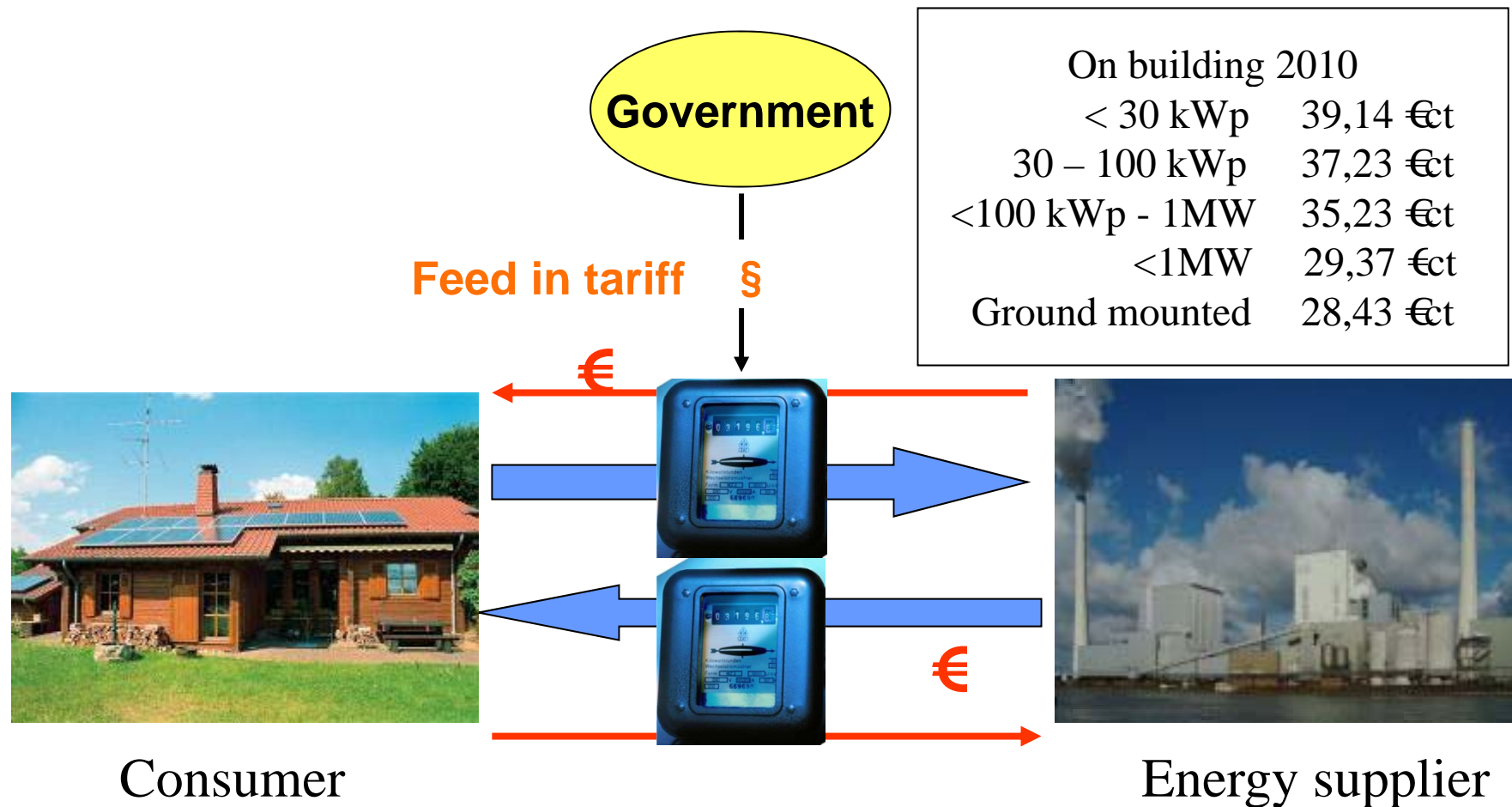
II. Renewable Energy Sources Act (EEG)

- ▶ Priority for grid connection, purchase and transmission of electricity from renewable energies
- ▶ Consistent fee (“tariff”) paid per kWh by the grid operators for this electricity
 - ▶ Long-term perspective and investment security (15–30 years)
 - ▶ Incentive for opening up new potentials and technologies
- ▶ Strong incentive for efficiency boost
 - ▶ Tariffs differentiated by source and size of the plant
 - ▶ Annual degression rates taking into account technical development
- ▶ Nationwide equalization between all grid operators and electricity suppliers for fees paid

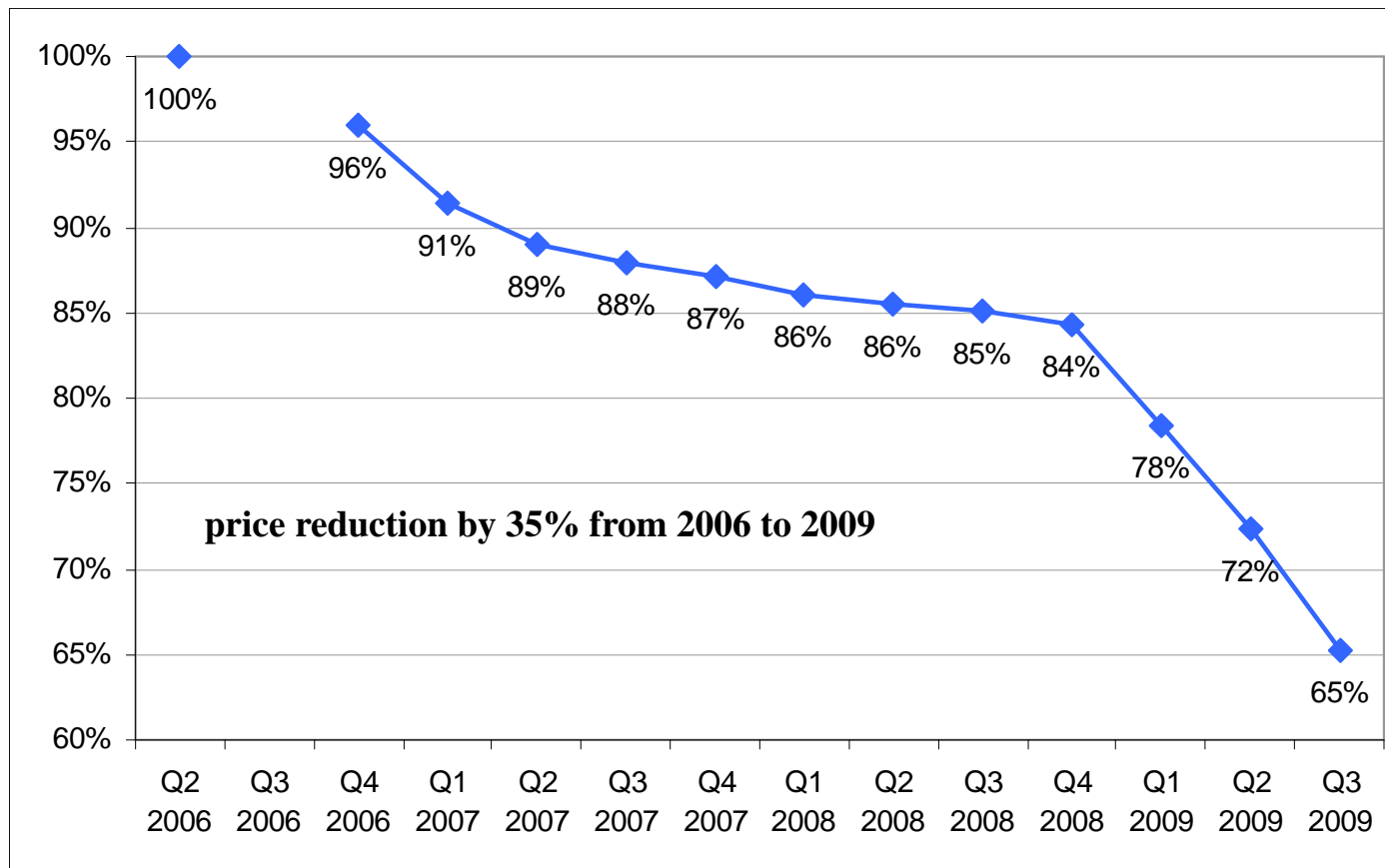
II. Renewable Energy Sources Act (EEG): Equalisation of Feed-in Tariff



II. Renewable Energy Sources Act (EEG)

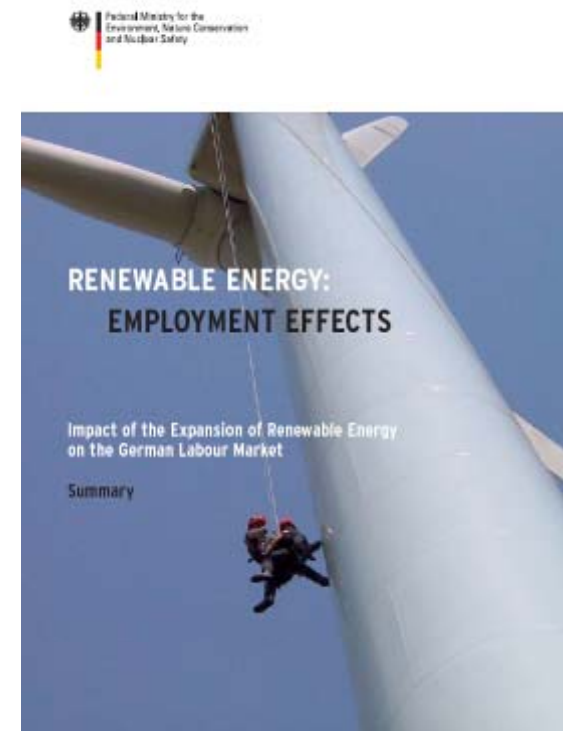


II. Germany: System prices decrease steadily



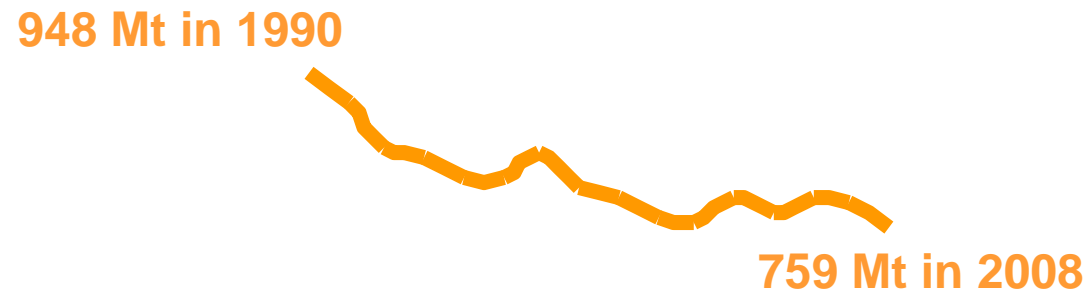
II. German RES-Policy: Achievements in 2009

- ▶ Share of RES electricity in 2009: 16.0 %
- ▶ As of 2008 contributing to
~ 278,000 Jobs (increase of
55% since 2004)
and a Turnover: ~ 30 billion € / a



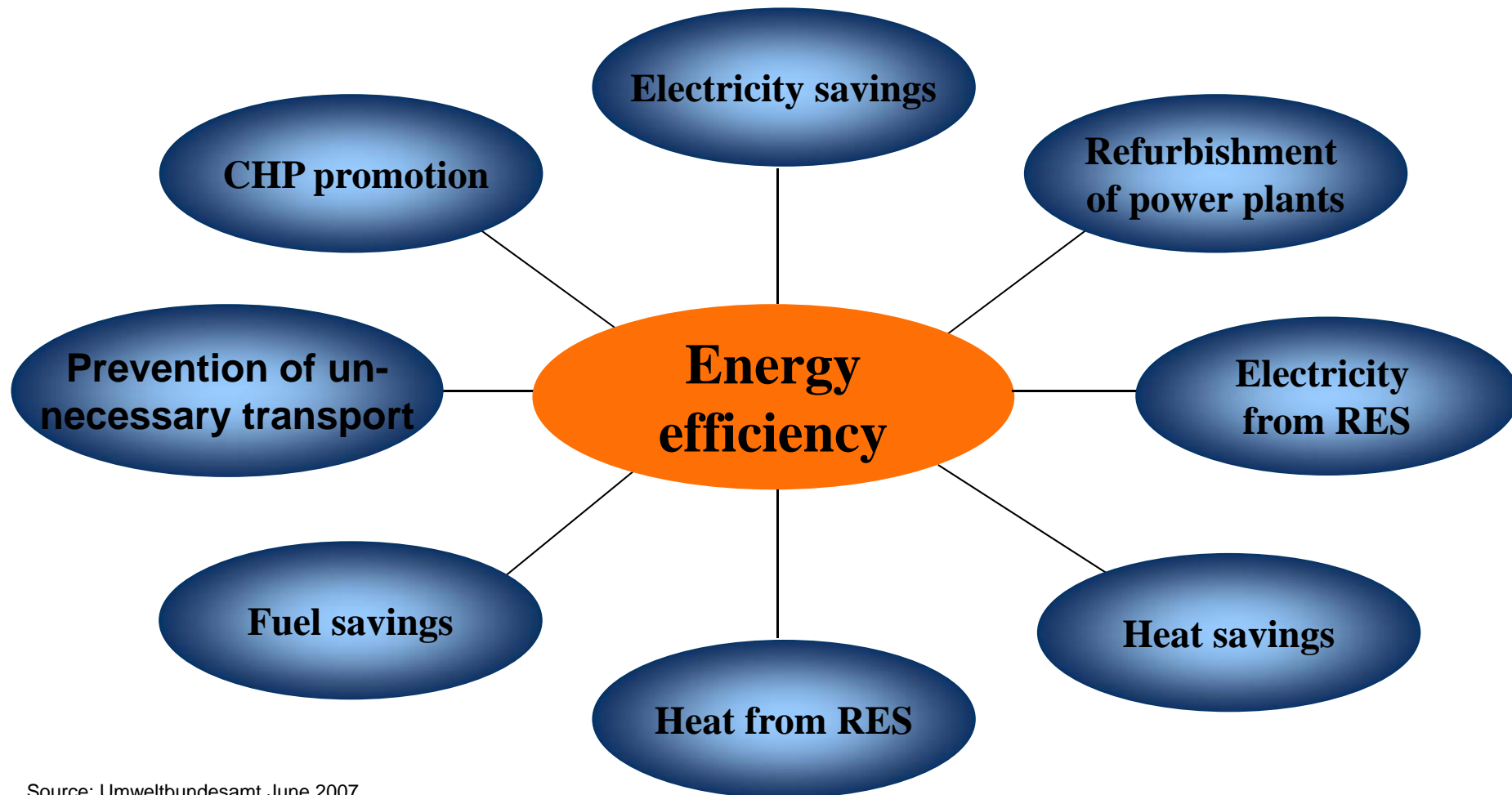
II. German RES-Policy: Achievements

- Reduction of energy related carbon dioxide emissions:
20 % by 2008 compared to 1990



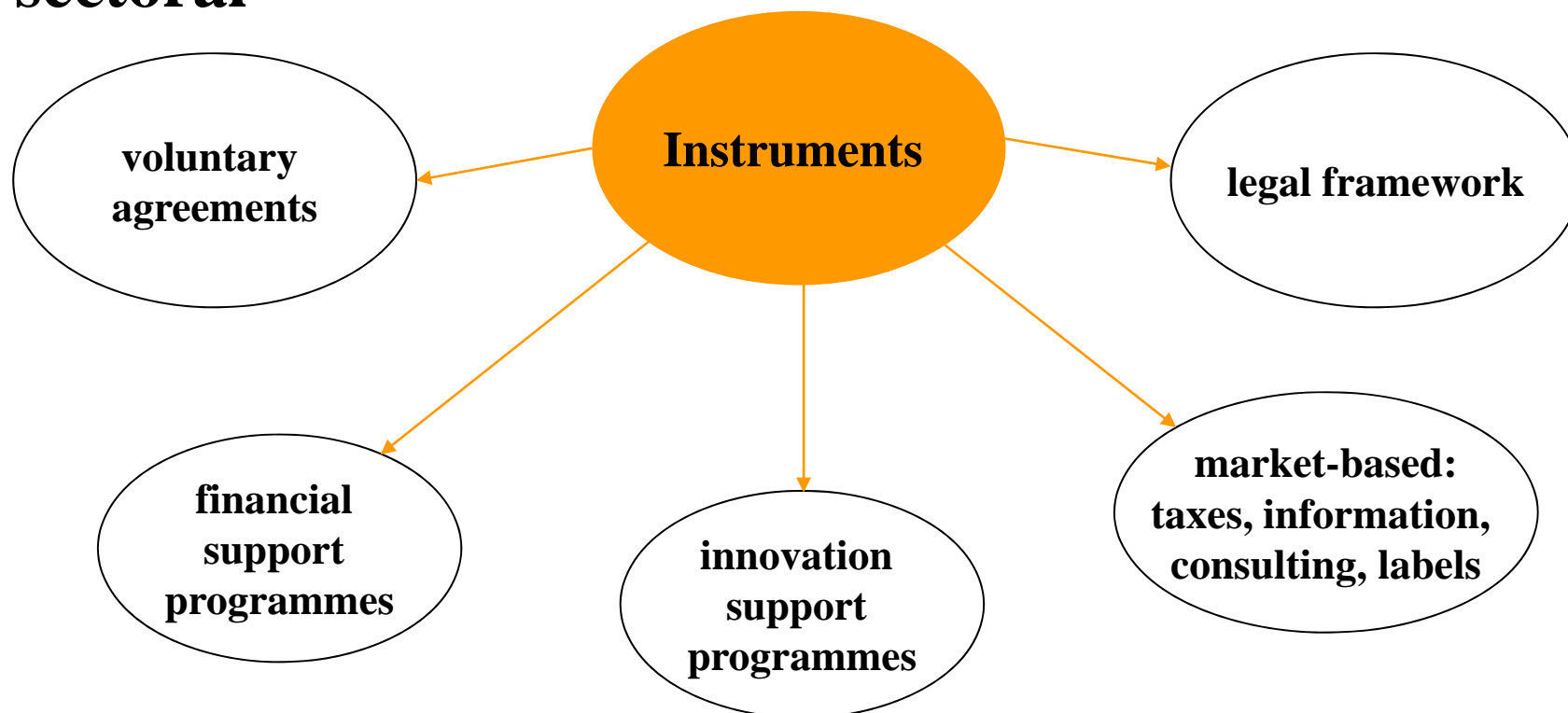
- ▶ Estimation of avoided external costs (impacts of climate change): some 12 billion € in 2007

III. Energy Efficiency – Application fields



III. Energy Efficiency – Measures on the National Level

About 70 individual measures: sectoral and cross-sectoral



III. Energy efficiency in buildings

Approaches for increase of energy efficiency in buildings

- Legal Requirements for buildings
- Obligation of replacement
- **Key instrument: EnEV**

Regulatory policy

- Loans and subsidies
- Tax incentives
- **Key instrument: Building Refurbishment Programme**

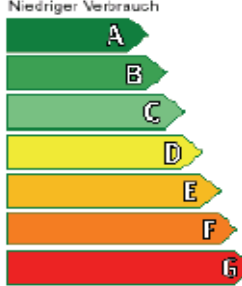



Financial support

- Creation of market transparency
- Pilot projects
- Information
- Qualification of experts

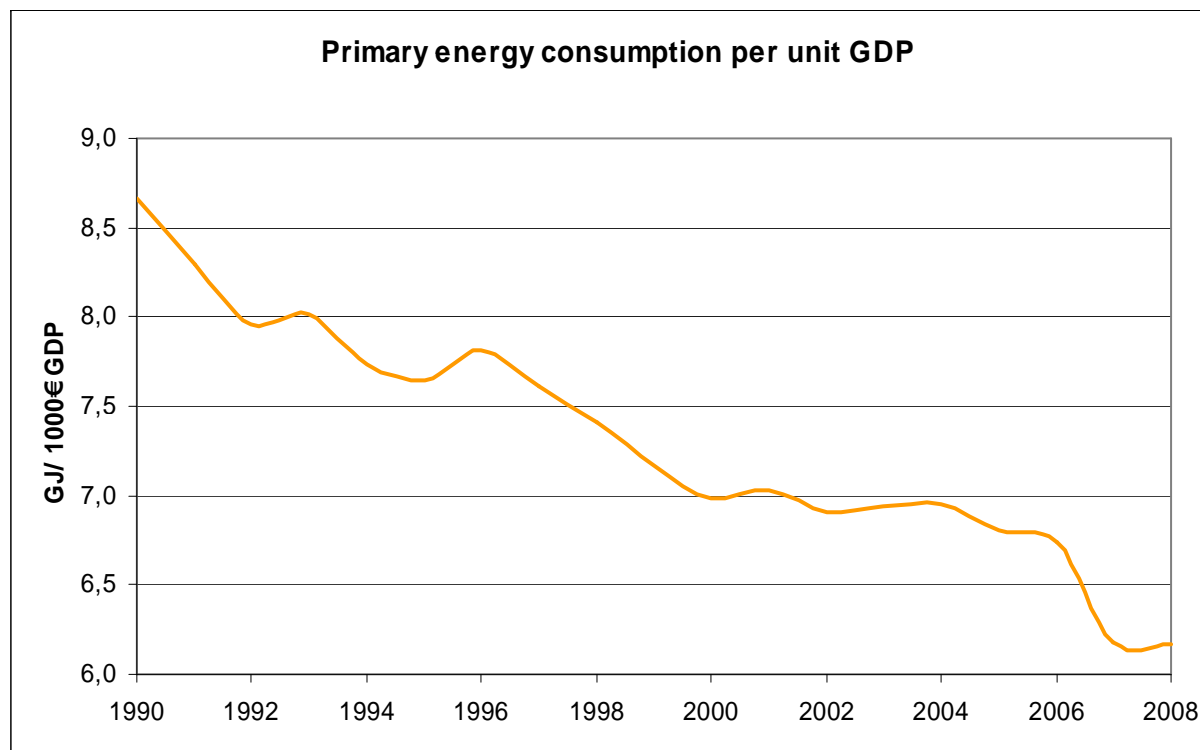
Promotion

III. Governmental Instruments and Programs – Focus: Private Households

- ▶ Domestic Appliances (EU Label)
 - ▶ very successful in Germany
 - ▶ strong signals for producers
 - ▶ implementation of Classes A+ and A++ for Cooling Units

Energie	
Hersteller Modell	Logo ABC 1 2 3
Niedriger Verbrauch  Hoher Verbrauch	 A
Energieverbrauch kWh/Jahr <small>(Auf der Grundlage von Ergebnissen der Normprüfung über 40h)</small> <small>Der tatsächliche Verbrauch hängt von der Nutzung und vom Standort des Gerätes ab</small>	XYZ
Nutzinhalt Kühltel Nutzinhalt Gefrierteil	XYZ XYZ 
Geräusch (dB(A) re 1 pW)	XZ
<small>Ein Datenblatt mit weiteren Geräteangaben ist in dem Prospekt enthalten.</small>	
<small>Form: EN 105, Ausgabe: März 2009 Klimagruppe: B2/B1e D2/E2G</small>	

III. EE-Achievements: Specific Primary Energy Consumption in Germany





IV. Renewables and Energy Efficiency – Cooperation for Sustainability

- ▶ Expanding the use of **renewable energy sources** and **energy efficiency technologies** is one of the main steps towards a sustainable energy supply
- ▶ International cooperation is needed to meet the challenges and build up the markets
- ▶ Germany is offering to share its experience

IV. Opportunities for Vietnamese-German cooperation

- ▶ Cooperation in drafting RES support policies like Vietnamese feed-in-tariffs
- ▶ Built up of wind parks and for turbine manufacturing units
- ▶ Joint ventures for solarthermal systems
- ▶ Rural electrification using RES (biogas, micro & pico-hydro, PV,)

IV. Enjoy the Germany Renewable Energy Day!

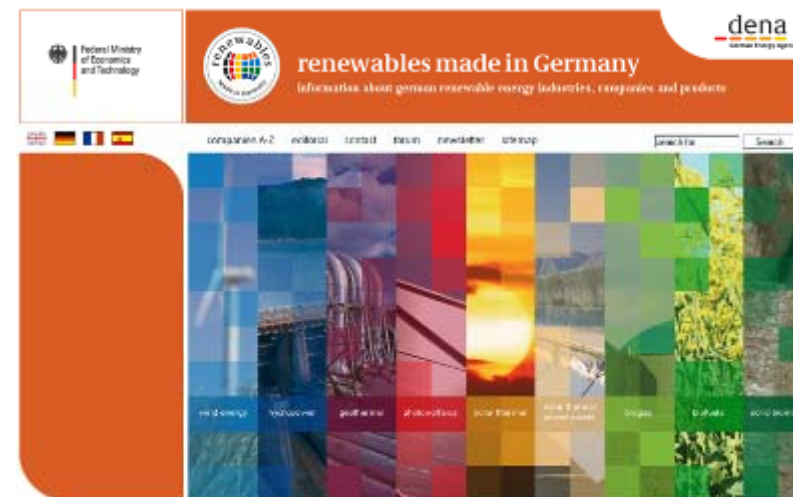
10:50 – 11:40	German wind power development – opportunities for Vietnam by D. Jacobs, Freie Universität Berlin
11:40 – 12:30	Geothermal power production in Germany and Vietnamese potential by U. Stuckmann, Stuckmann Consulting
14:00 – 14:50	Solar energy in the past decade – a German success story and chances for Vietnam by S. Randig, International Solar Energy Society
14:50 – 15:40	Biomass and Biogas – German Technologies and Potentials in Vietnam by W. Siemers, CUTEC-Institut GmbH
15:40 – 16:30	The Importance of Energy Efficiency for Energy, Environment and Economy – Experiences in Germany and Perspectives for Vietnam by Dr. Ziesing, Ecologic Institute

Visit us at our exhibition booth!

- ▶ **Comprehensive information on events, news, presentations, German companies and products:**



www.encyciency-from-germany.info



www.renewables-made-in-germany.com