



**Perspectives for Renewable Energy Development –  
Recent Findings from Germany**

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**Progress Report**  
and the current amendment process of the  
**Renewable Energy Sources Act**

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# § 20 EEG: Reporting to Parliament

- ⇒ duty to regularly report to the Bundestag about the impact of the EEG
- ⇒ reflect true circumstances and ensure that necessary adjustments of the payment structures are possible
- ⇒ ensure the continued expansion of renewable energies
- ⇒ keep the regulations as efficient as possible; pre-empt potentially excessive incentives.



## Launching a Research Project in order to build the Progress Report upon a scientific basis



Project coordination

Photovoltaics, Aspects of industry policy, Future Development / Scenarios

Wissenschaftszentrum  
Nordrhein-Westfalen  
Institut Arbeit  
und Technik



Kulturwissenschaftliches  
Institut  
Wuppertal Institut für  
Klima, Umwelt, Energie  
GmbH

Market integration

**FICHTNER**

Biomass (solid, liquid, gaseous)

Hydropower



§ 16 hardship provisions



**IWR**

Landfill gas, sewage treatment  
plant gas and mine gas



Wind energy –  
on land and off shore



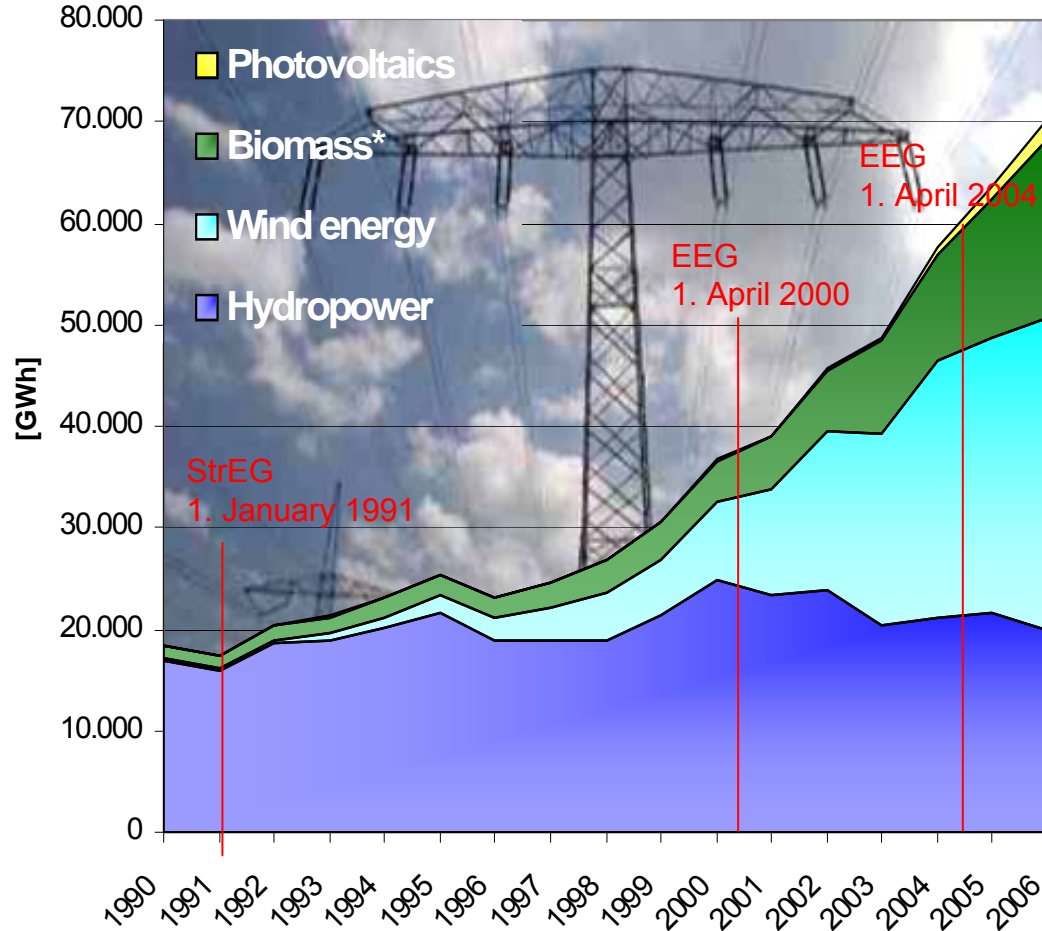
Geothermal power  
production



Ecologic impact and  
consequences



# EEG and the structural change of the electricity market



The contribution of Renewable Energies to the electricity supply has nearly **doubled** between 2000 and 2006. (6.3% → 12%)

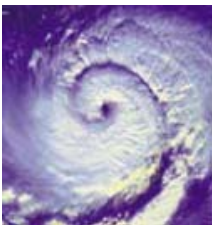
Without the effects of the EEG the renewable share in the total gross electricity consumption would have likely decreased below 1990 levels of 3.3%.

The EEG's **targets of expansion** (12,5% in 2010 and 20% in 2020) will **be reached**.

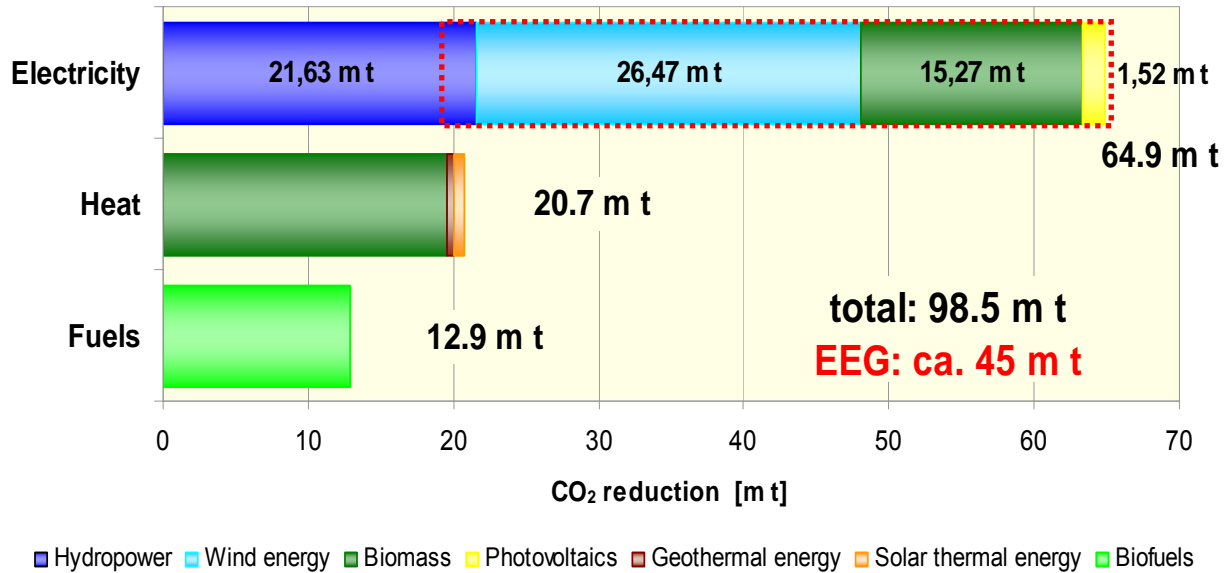
The phased-out **nuclear** power production will **completely** be replaced with electricity from **renewable sources**, at least on the balance sheet.

The conventional power production is dominated by a few big power producers, while the Renewable Energy sector is consisting of **many independently acting producers**.

\* solid, liquid, gaseous biomass, biogenic share of waste, landfill and sewage gas;  
 Electricity from geothermal energy is not presented due to the low volumes of electricity  
 Sources: Internet Update BMJ-Brochure "Renewable energy sources in figures – national and international development"; Version: November 2007



# Contribution of the EEG to Climate Protection



➔ The reduction of CO<sub>2</sub>-emissions via EEG counted for about 45 m t in 2006. This means that almost half of the CO<sub>2</sub>-reduction caused by the use of renewable energies can be attributed to the EEG.

➔ Those plants, which have started operating since 2000 and are therefore accounted as „EEG-Plants“, avoided the additional emission of about 37 m t of CO<sub>2</sub> in 2006. Without these plants CO<sub>2</sub>-emissions in Germany would probably have risen by 13 m t.



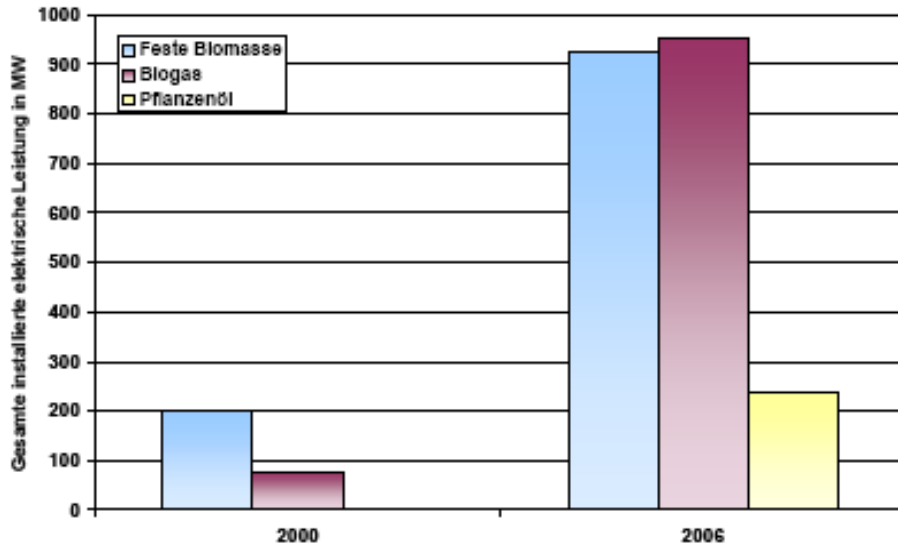
# Biomass

## solid, liquid, gaseous



2006: 13,987 GWh

### Market development



Electricity generation has increased from 5.2 billion kWh (2004) to around 10.9 billion kWh in 2006.

**CAUSE:** Strong increase in the biogas sector (total electricity output almost quadrupled between 2004 and 2006 to 1000 MW<sub>el</sub>).

**REASON:** The introduction of a bonus for the use of cultivated biomass (NawaRo bonus), which is currently claimed by around 60% of all biogas plants.

**But: Massive slow down of growth in 2006 as a consequence of a steady increase in costs (especially rawmaterial and agricultural products).**

### Key recommendations

Increase in the basic feed-in-tariff for new and existing plants (<150 kW<sub>el</sub>).

General Increase in the NawaRo bonus for electricity from biomass (new and existing plants < 500 kW<sub>el</sub>) and a special one for electricity from biogas (new and existing plants < 150 kW<sub>el</sub>), if at least 30% farm manure is used.

Increase in the NawaRo bonus for using wood from landscape management or short-rotation plantations.

Increase in the CHP bonus from 2 to 3 ct/kWh.

Reduction in the depreciation rate from 1.5% to 1% p. a.; introduction of an annual depreciation of 1% for all (previously non-degressive) biomass bonuses starting 2010.

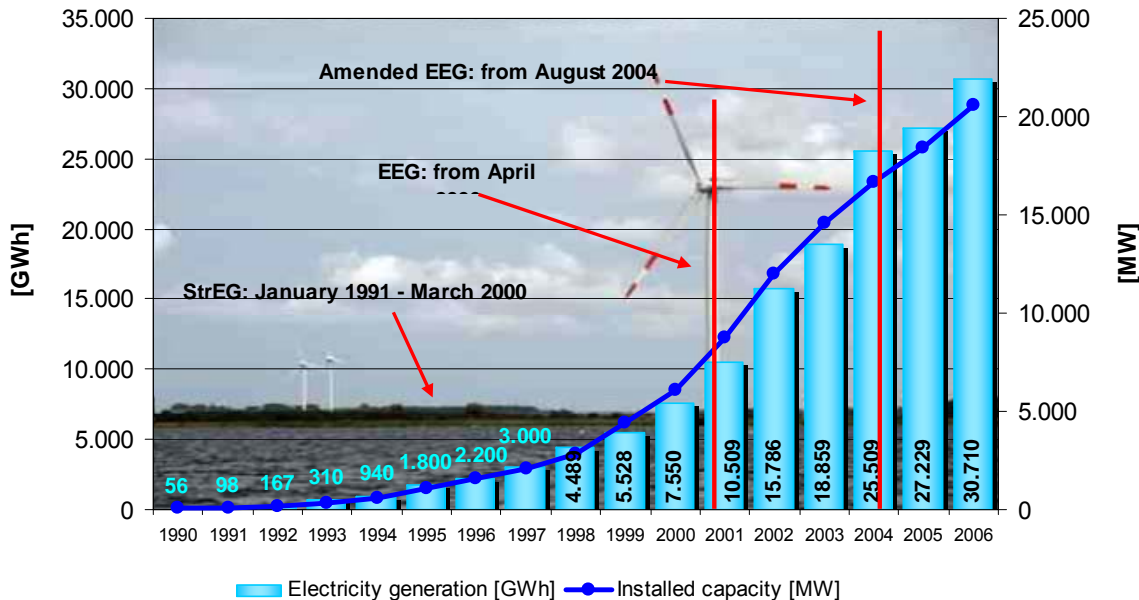


# Wind Energy

2006: 30,710 GWh



## Market development



Sources: Internet Update BMU-Brochure "Renew able energy sources in figures – national and international development"  
Version: November 2007; provisional figures

**Hardly any repowering activities !**

**No Off-shore wind energy use !**

## Key recommendations

Setting the depression rate for new onshore wind farms at 1 to 2% p. a.

Improvement of repowering incentive in Article 10 (2)

Increase in grid stability by improving the technical properties of onshore wind farms;  
appropriate remuneration to be considered

Improvement of the feed-in-tariffs for offshore wind farms under Article 10 (3) by increasing the initial payment, with a decrease in the lower remuneration rate.

Additional measures to boost repowering (e.g. building laws)

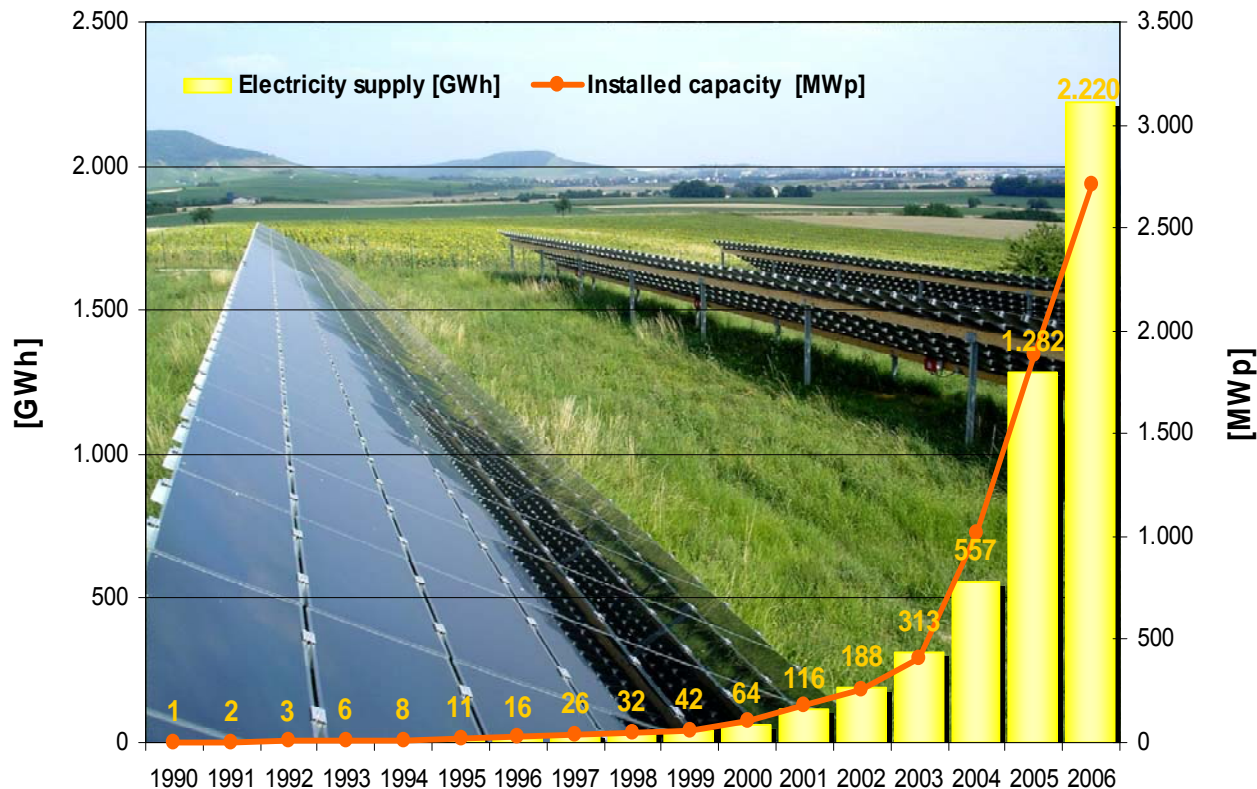


# Solar radiation - Photovoltaics



2006: 2,220 GWh

## Market development



Sources: Internet Update BMU-Brochure "Renew able energy sources in figures – national and international development"  
Version: November 2007; provisional figures

## Key recommendations

Stepped increase in degression rates to 7% in 2009 and 2010 and to 8% in 2011 and after (one degression rates for all types of installation)

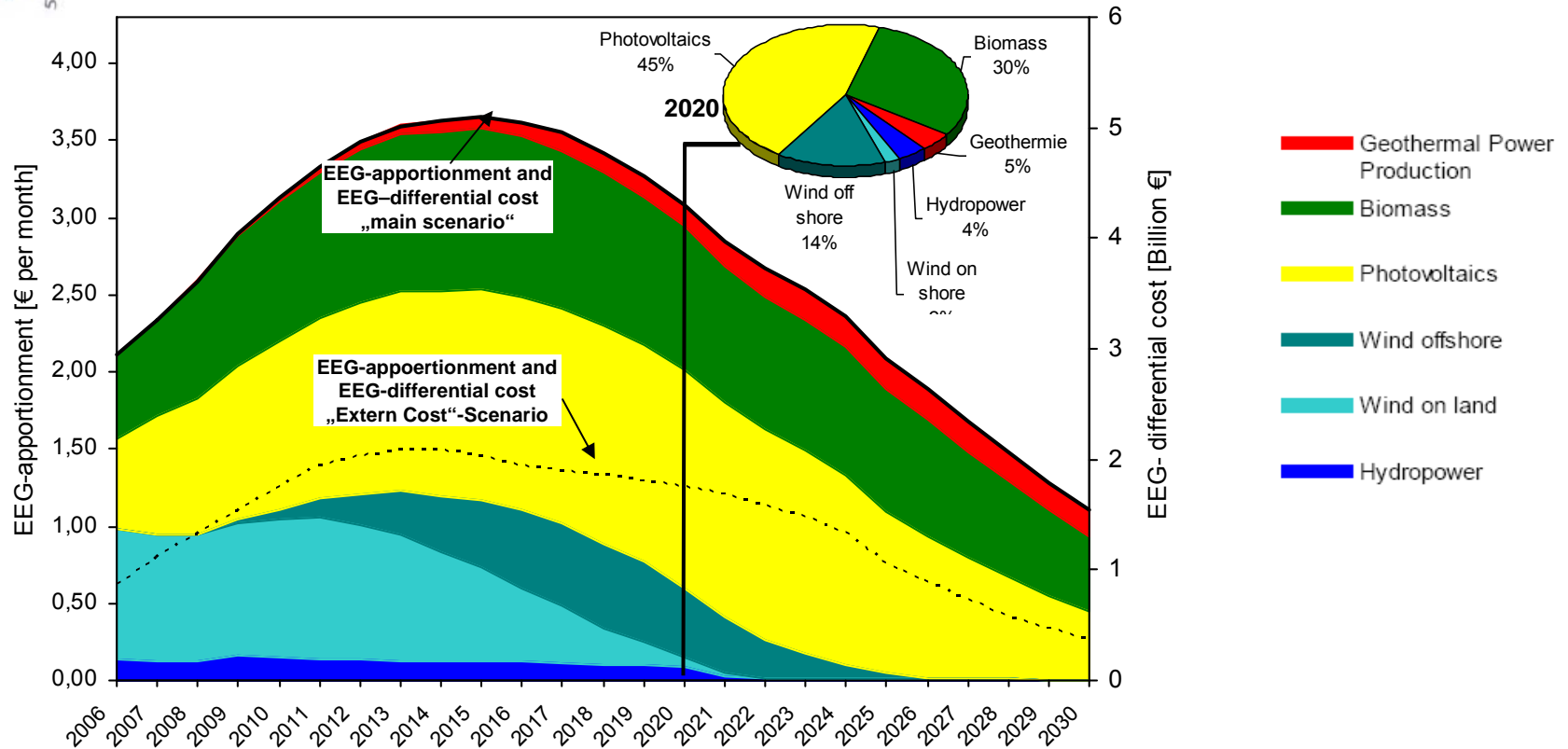
One-off reduction of 1ct/kWh in basic rate of remuneration from 1.1.2009

Introduction of a new category for large roof systems (>1000 kW<sub>p</sub>) starting with a feed-in-tariff of 34.48 ct/kWh

**The fast market growth is allowing for high cost reduction, while the price development does not reflect that adequately.**



# Development of the EEG-apportionment for private households



- ⇒ The EEG-apportionment is rising until 2015 to a maximum of 3.65 €<sub>2007</sub> per month calculated for an average electricity consumption of 3,500 kWh/a and declines thereafter.
- ⇒ The EEG-apportionment then sums up to 1,2 ct/kWh.
- ⇒ The increase within the 10-year-period from 2006-2015 makes up to 0.5 ct/kWh (about 1.50 € per month).