

# Utilization of Renewable Energies in Germany

Shanghai Environmental Protection  
& Renewable Energy International Forum and Fair

October 30, 2006

Frank Haugwitz, GTZ Beijing

# Why Renewables ?

- Environmentally sound and climate friendly;
- Create new jobs in major future oriented industries;
- High export potential for global markets;
- Generates annual turnover of Billions of Euro;
- Prerequisite for both the development of a sustainable energy supply and greater energy security / autonomy.

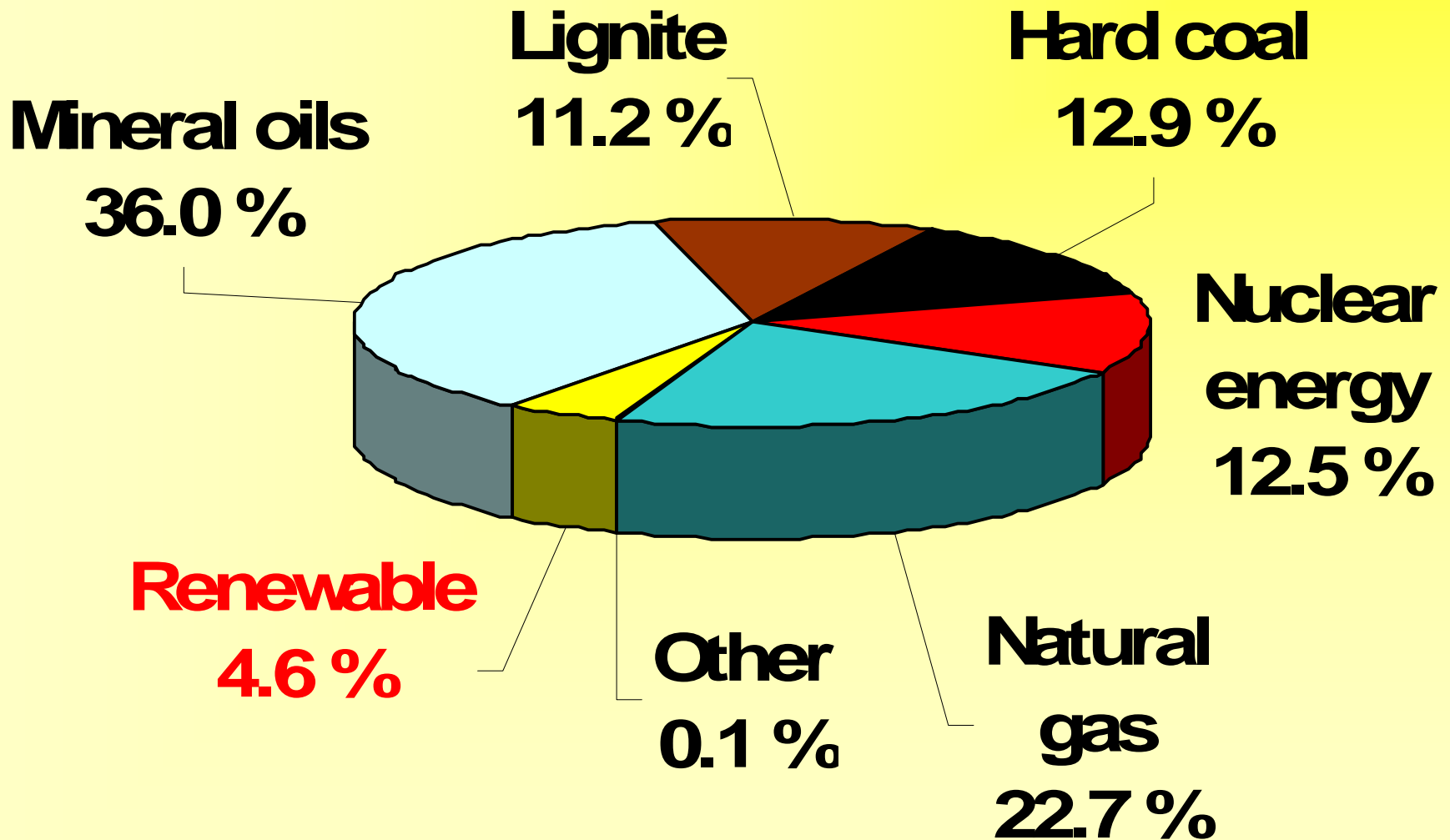
# Targets and Status of RE

- **Primary Energy Consumption**  
**2010: 4.2 %** (2000: 2.1%; 2005: 4.6%)  
**2020: 10%** and up to 50% by 2050
- **Electricity**  
**2010: 12.5 %** (2000: 6.2%; 2005: 10.2%)  
**2020: 20,0 %**
- **Bio-Fuels**  
**2010: 5.75 %** (2000: 0.3%; 2005: 3.4%)

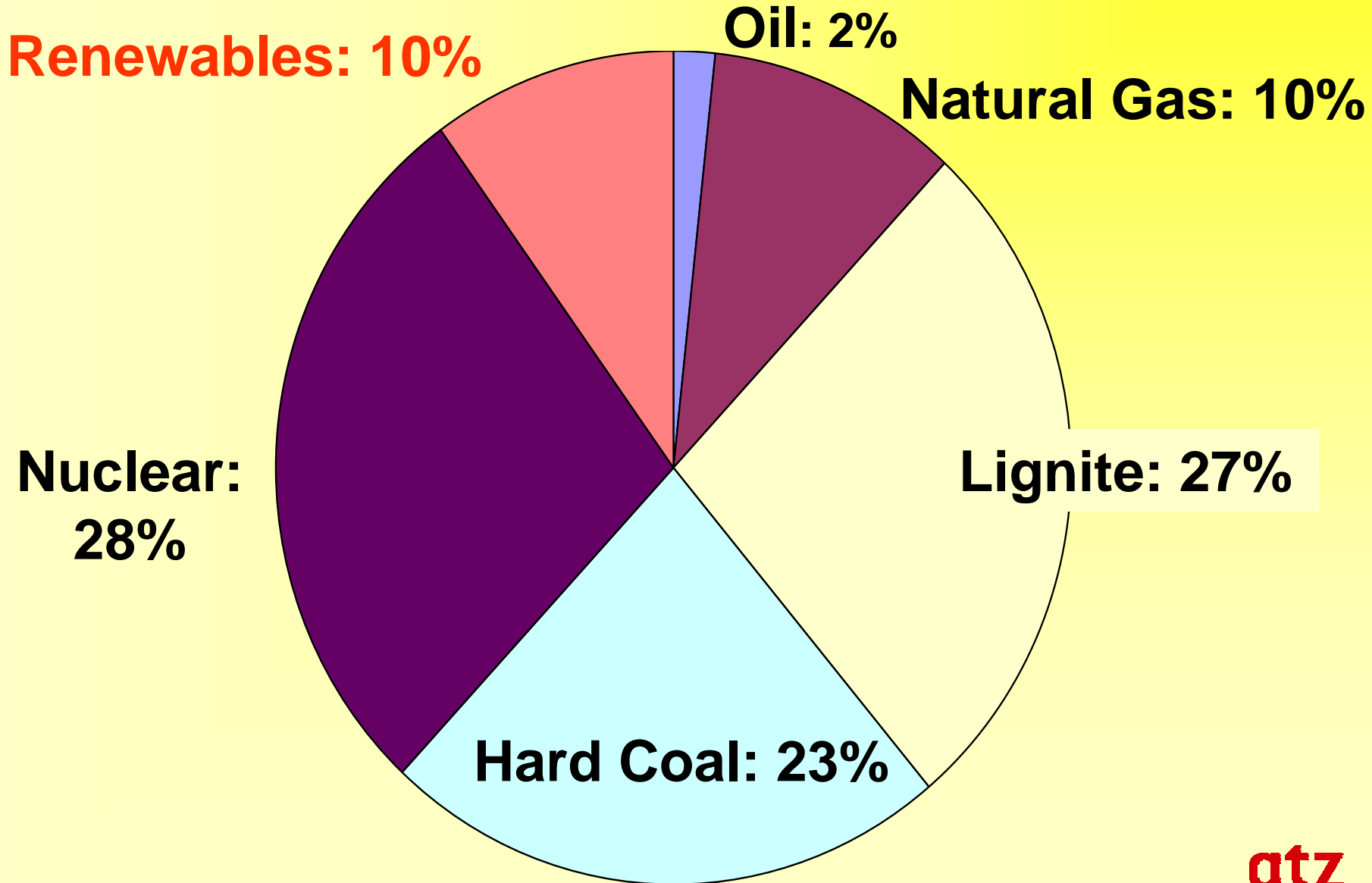
# Legislative Instruments

- Renewable Energy Sources Act (EEG)
  - > *Feed-in-Guarantee*
- Market Incentive Programme
  - > *Grants and Loans*
- Bio fuels
  - > *Tax Reduction / Blending Obligation*
- Research and Development

# Primary Energy Consumption (2005)



# Electricity Generation (2005)

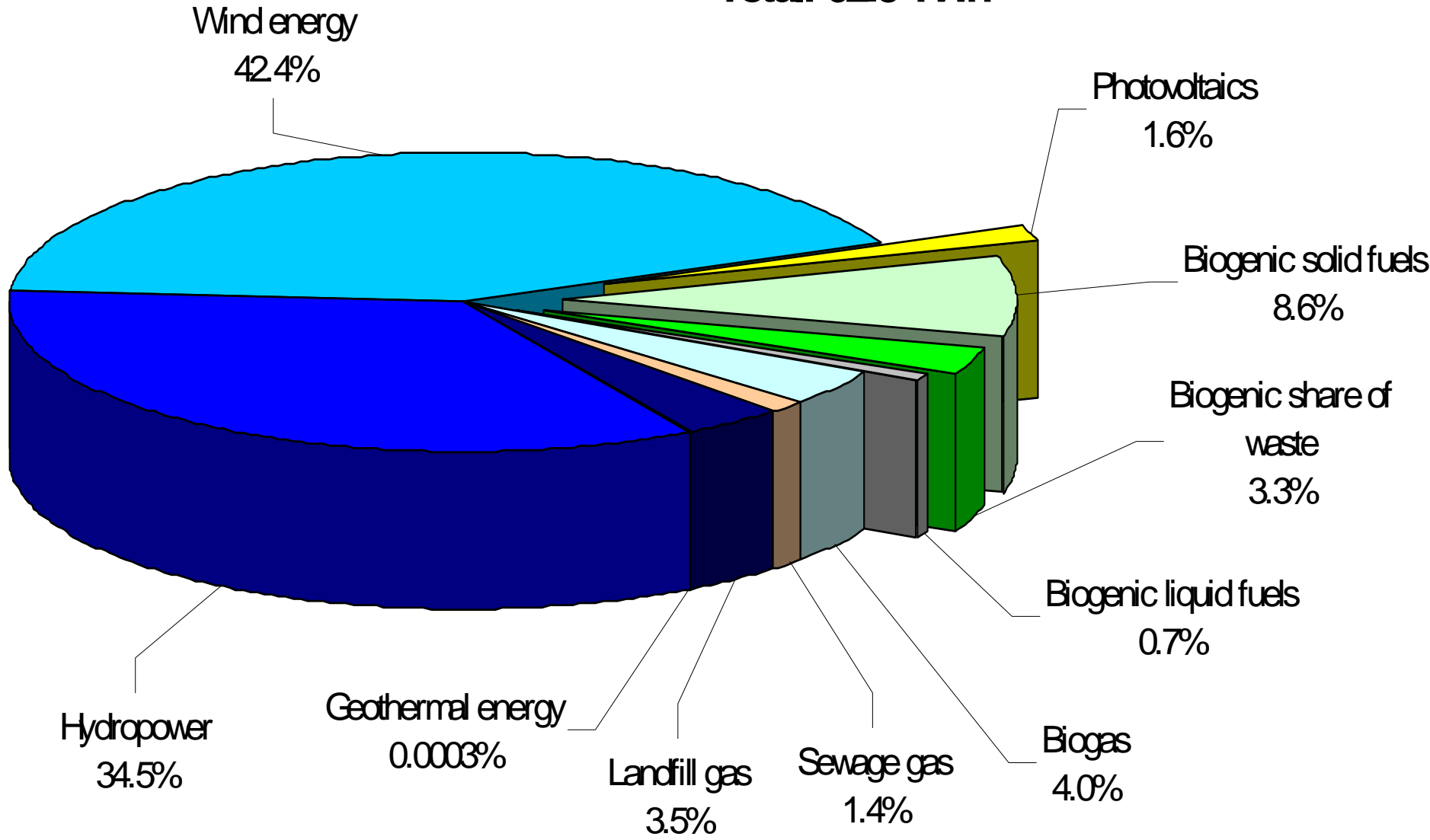


# Structure of electricity generation

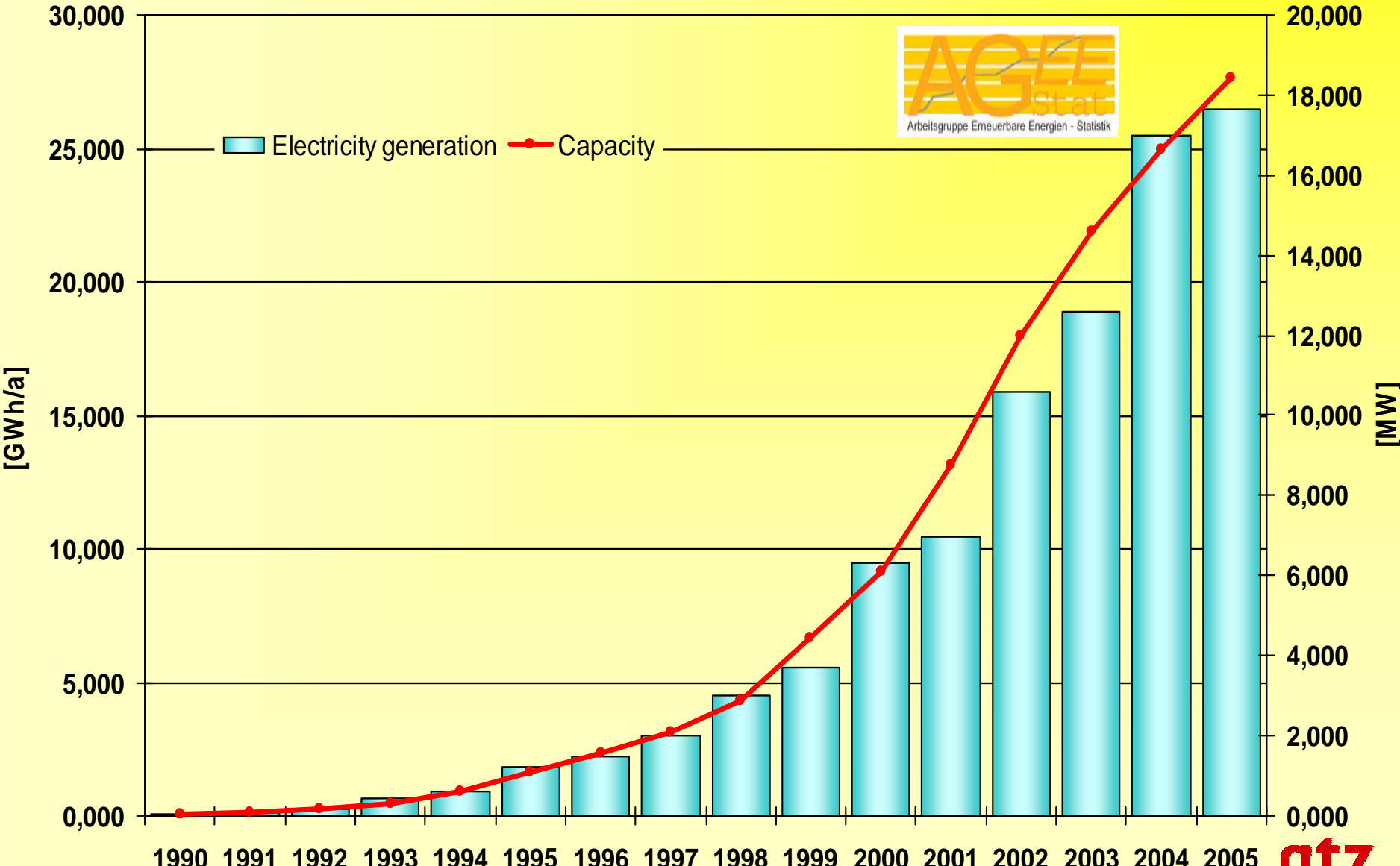
## from renewable energy sources in Germany in 2005

Final energy for electricity generation

Total: 62.5 TWh

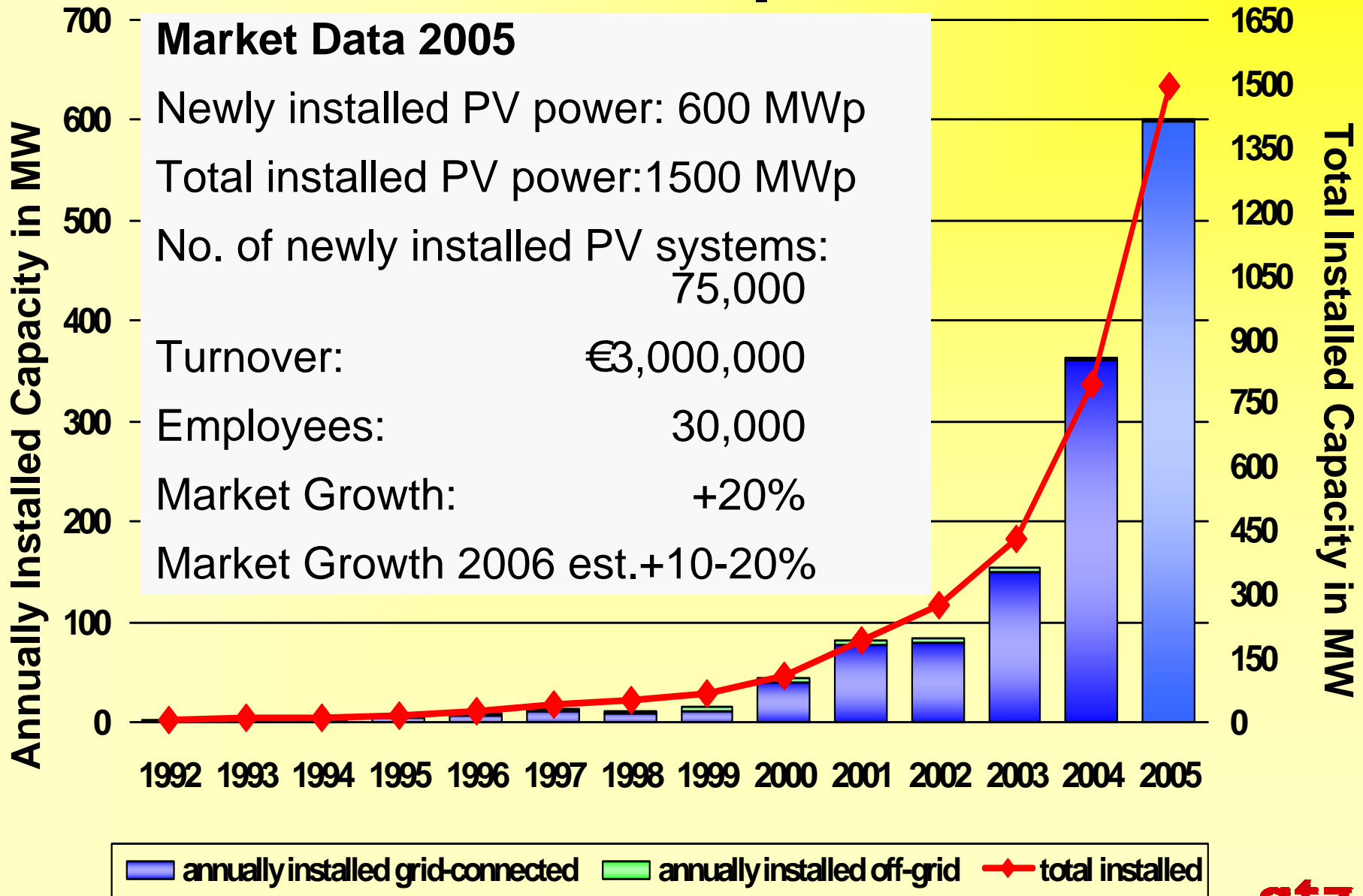


# Wind Energy Development



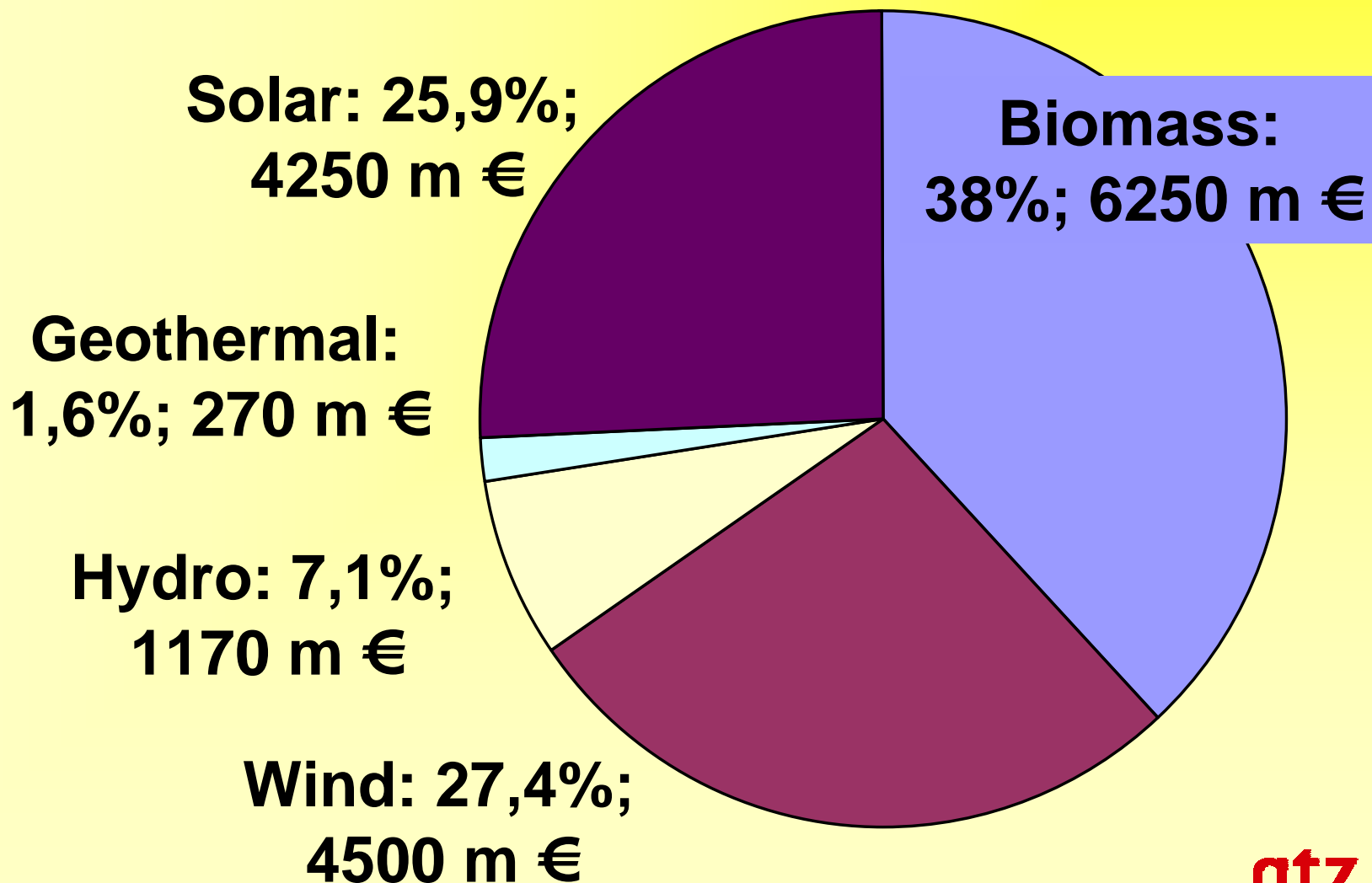


# PV Development

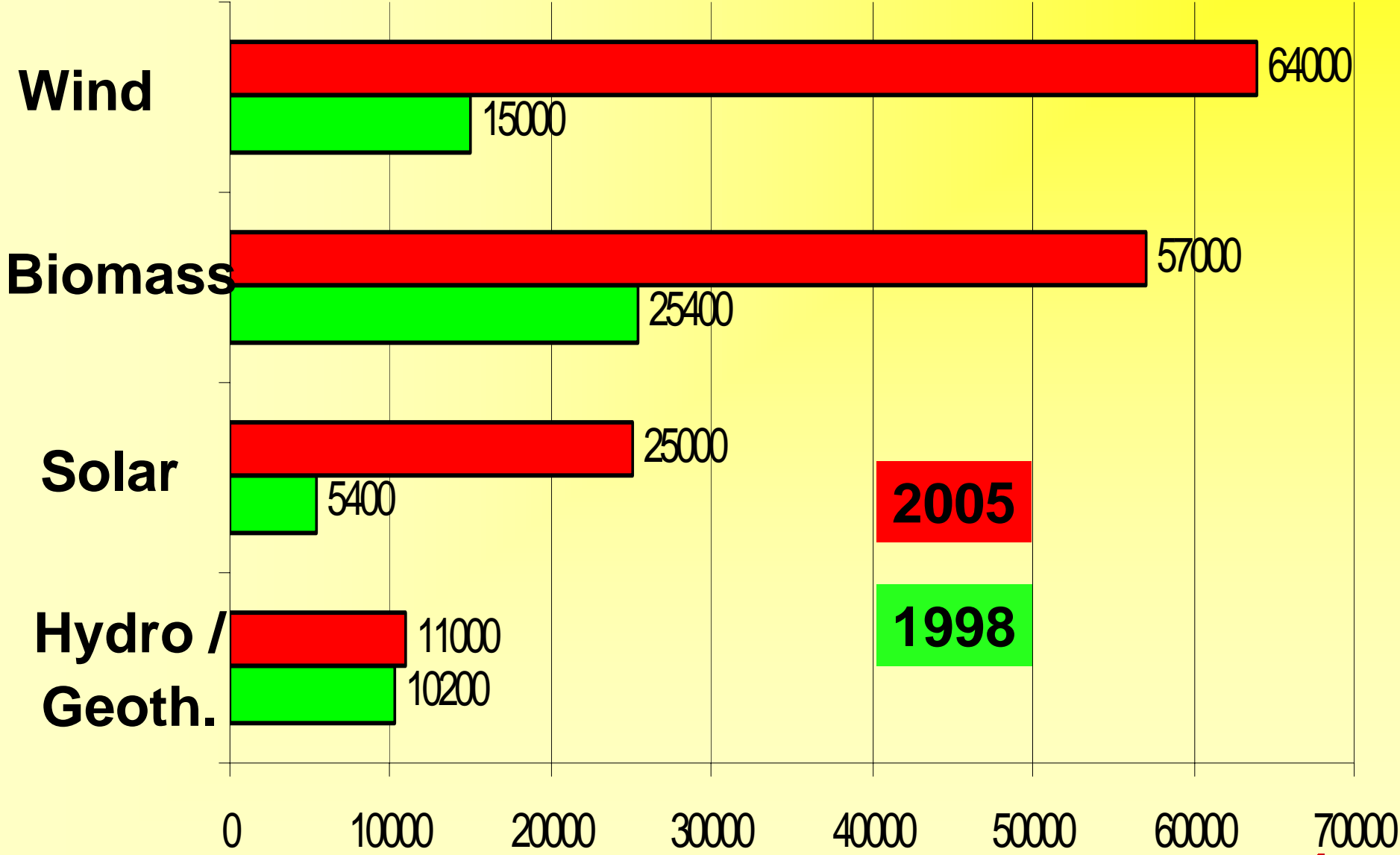


# Total Turnover RE-Industry (2005)

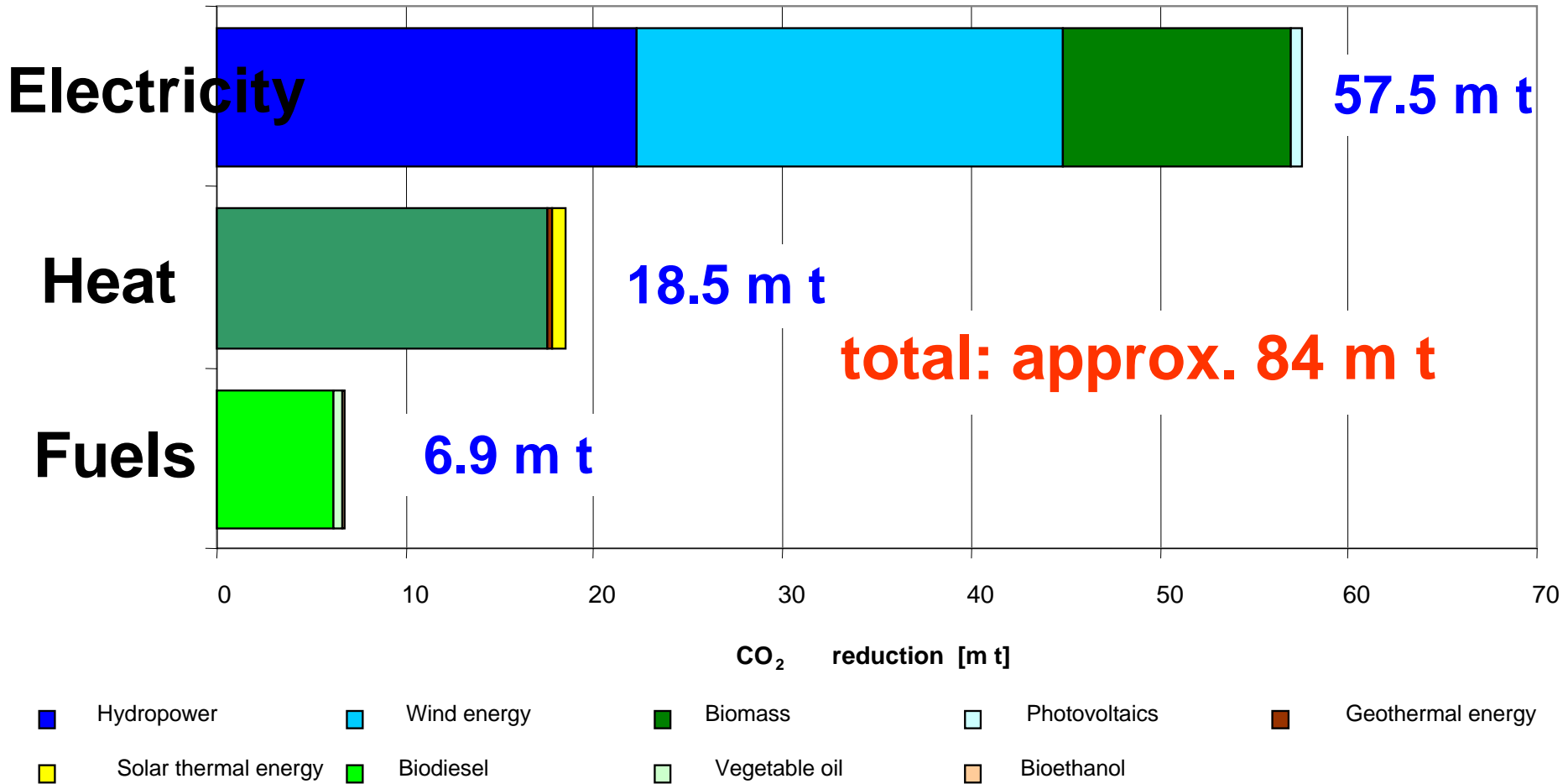
**Total: 16, 4 Billion €**



# Job Creation / Employment Effects



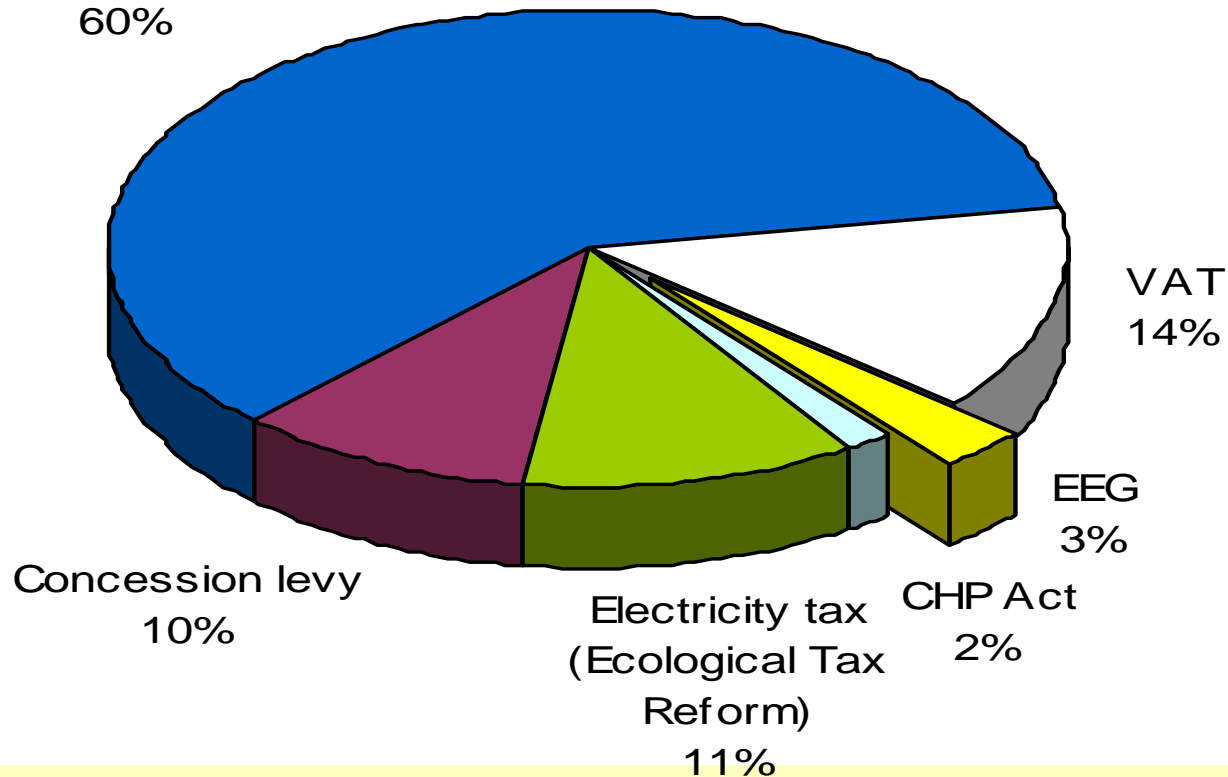
# Avoided CO<sub>2</sub>-Emissions (2005)



# Costs for the Promotion of RE

## Share of costs for one kilowatt hour(18 Ct)

Production,  
transport and  
marketing of  
electricity  
60%



**Household per month: 1,6 €**

**gtz**

# Summary of Achievements to date

- Share of RE in Electricity Production  
10,2 % in 2005
- 160000 jobs in RE industries
- 16 Billion € turnover
- 84 Mio. t of CO<sub>2</sub>-Reduction
- 1,6 € per month/household

# **Thank you for your attention !**

German Development Cooperation (GTZ) China  
Renewable Energies in Rural Areas Program

Tel: 0086 (0) 10 – 8532 3489 Ext. 26

Fax: 0086 (0) 10 – 8532 3481

**Frank.Haugwitz@gtz.de**

**[www.gtz-renewable-energy-program.org.cn](http://www.gtz-renewable-energy-program.org.cn)**