

# Renewable energy transforming Germany's electricity market

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1991  
Feed-in law  
2002  
Renewable Energy Act  
Success Story



# Priority Grid Access for Renewable Electricity

Guaranteed prices for 10-20 years

Incentives for private investment into  
Renewable Energies



## RE share in electricity:

1990 – 3.4%

2000 – 6.3%

2004 – 9.3%

2006 – 12.0%

2009 – 16.1%

2011 – 20%

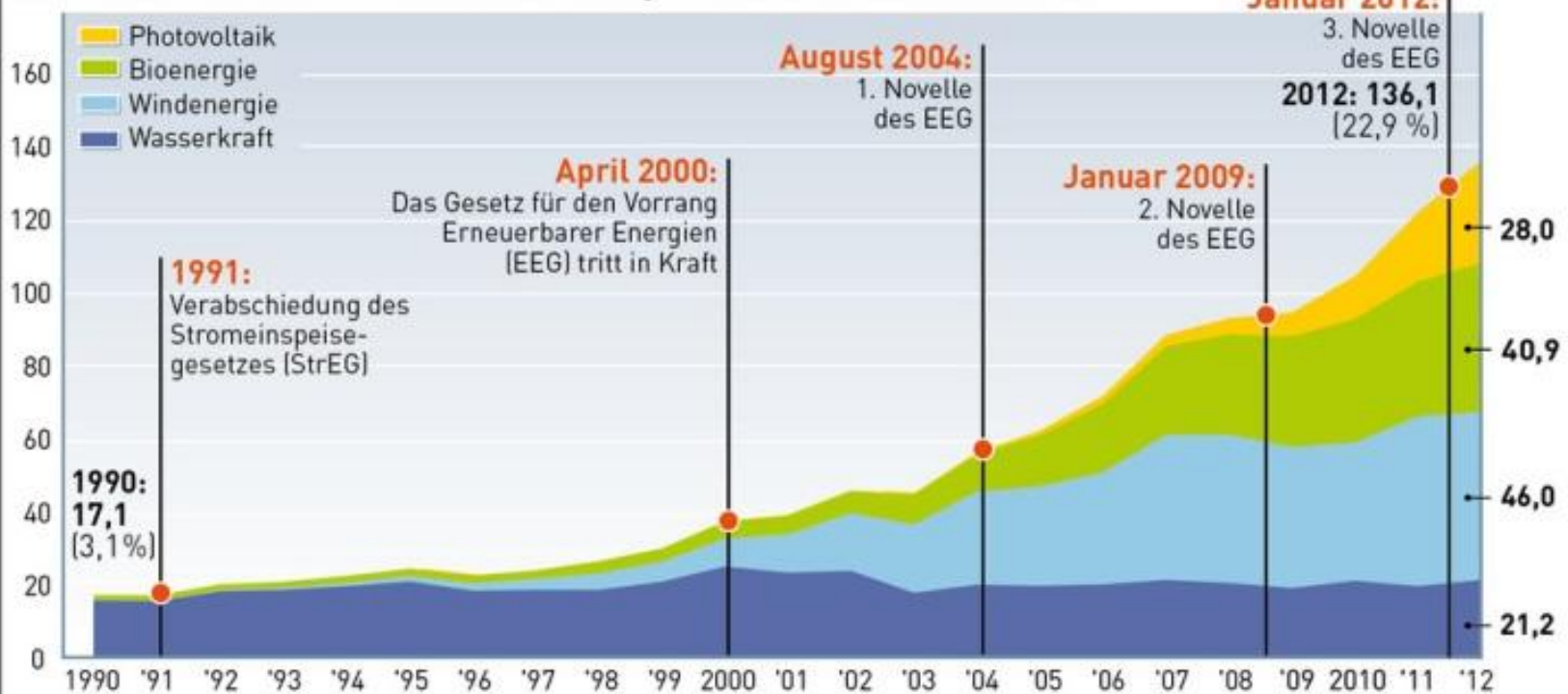
2012- 25%





## Entwicklung der Stromerzeugung aus Erneuerbaren Energien 1990-2012

Milliarden Kilowattstunden (in Klammern: Anteil am gesamten Stromverbrauch in Prozent)



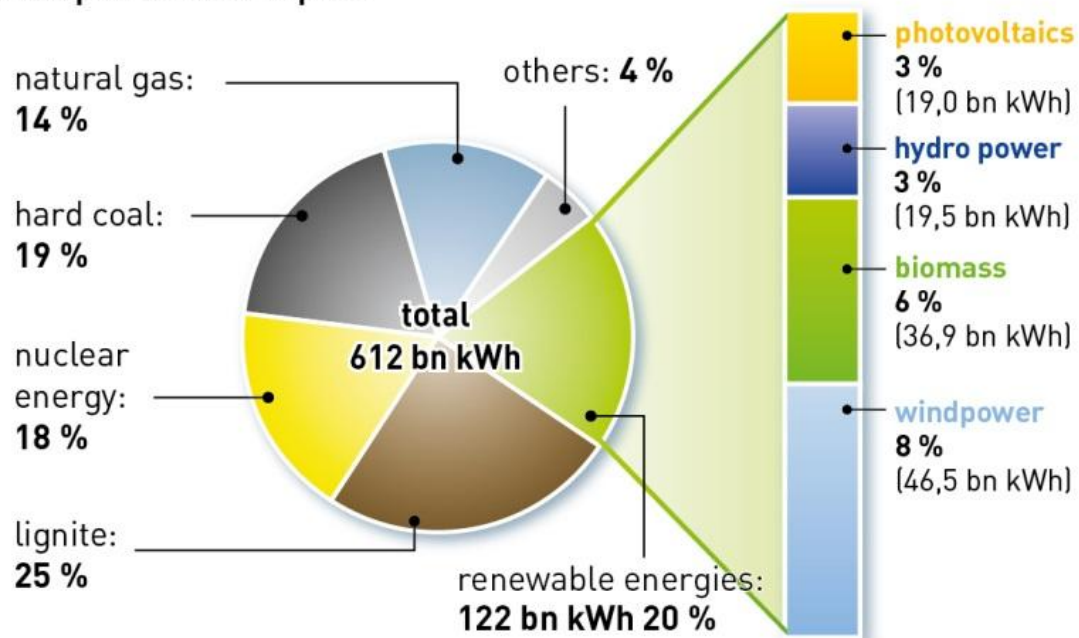
Quellen: BMU, BEE, AEE  
Stand: 2/2013

www.unendlich-viel-energie.de  
Logo of the German Renewable Energy Federation (BNEF)



## Germany's electricity mix in 2011

Renewable energies supplied 20 % of gross power consumption

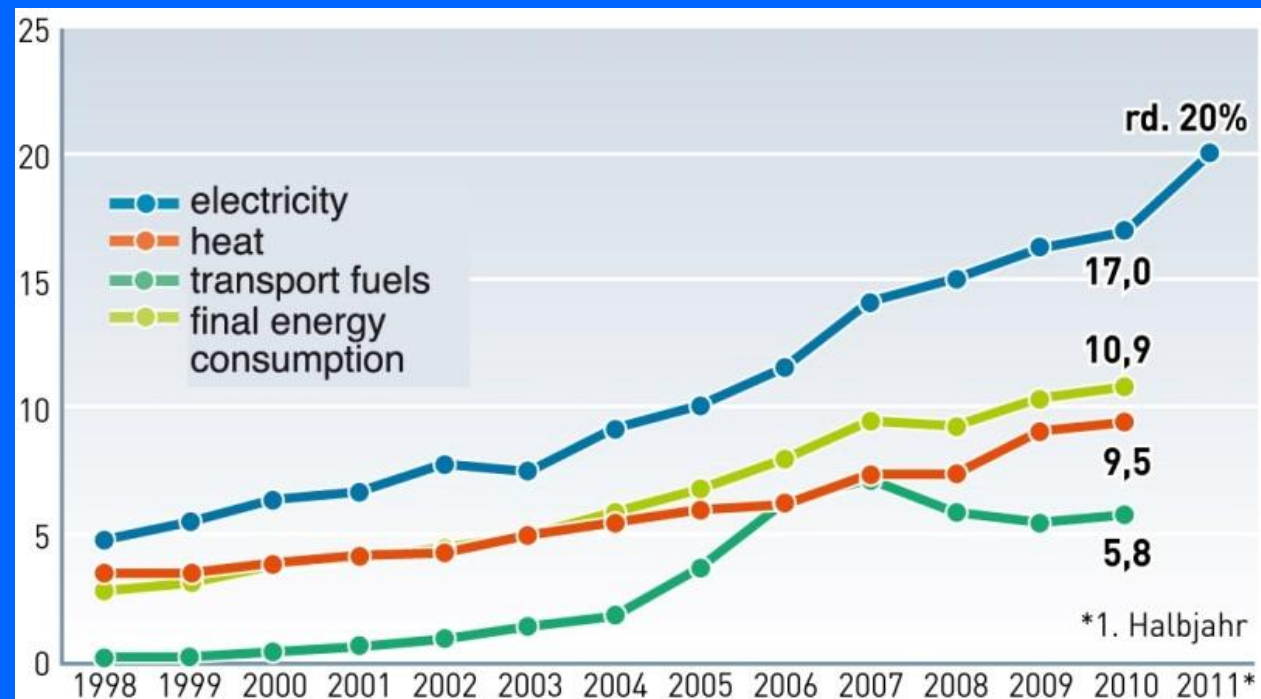


Sources: BDEW, AGEb, as of: 03/2012

[www.renewables-in-germany.de](http://www.renewables-in-germany.de)



# Share of renewables in Germany's energy mix (percent)

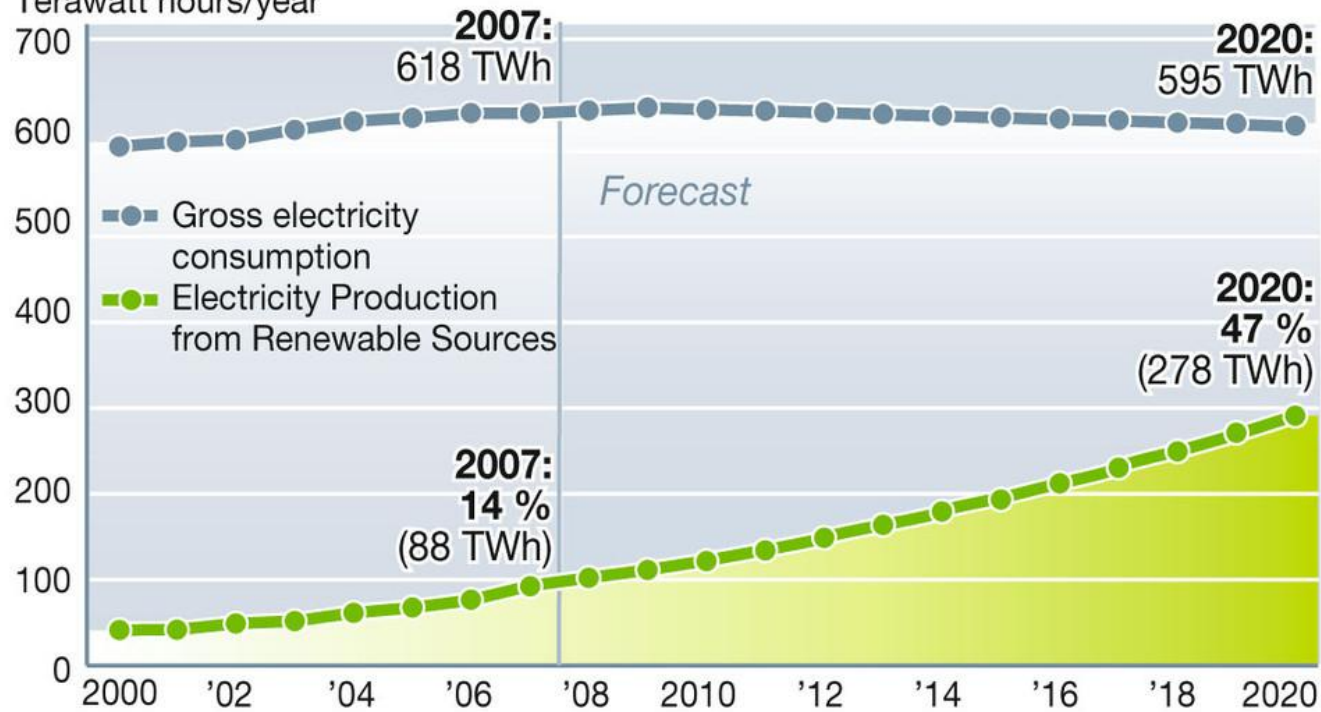




## Share of Renewable Energies in Germany's Electricity Consumption until 2020

Until 2020, the share of Renewable Energies will reach 47 %.

Terawatt hours/year



www.unendlich-viel-energie.de

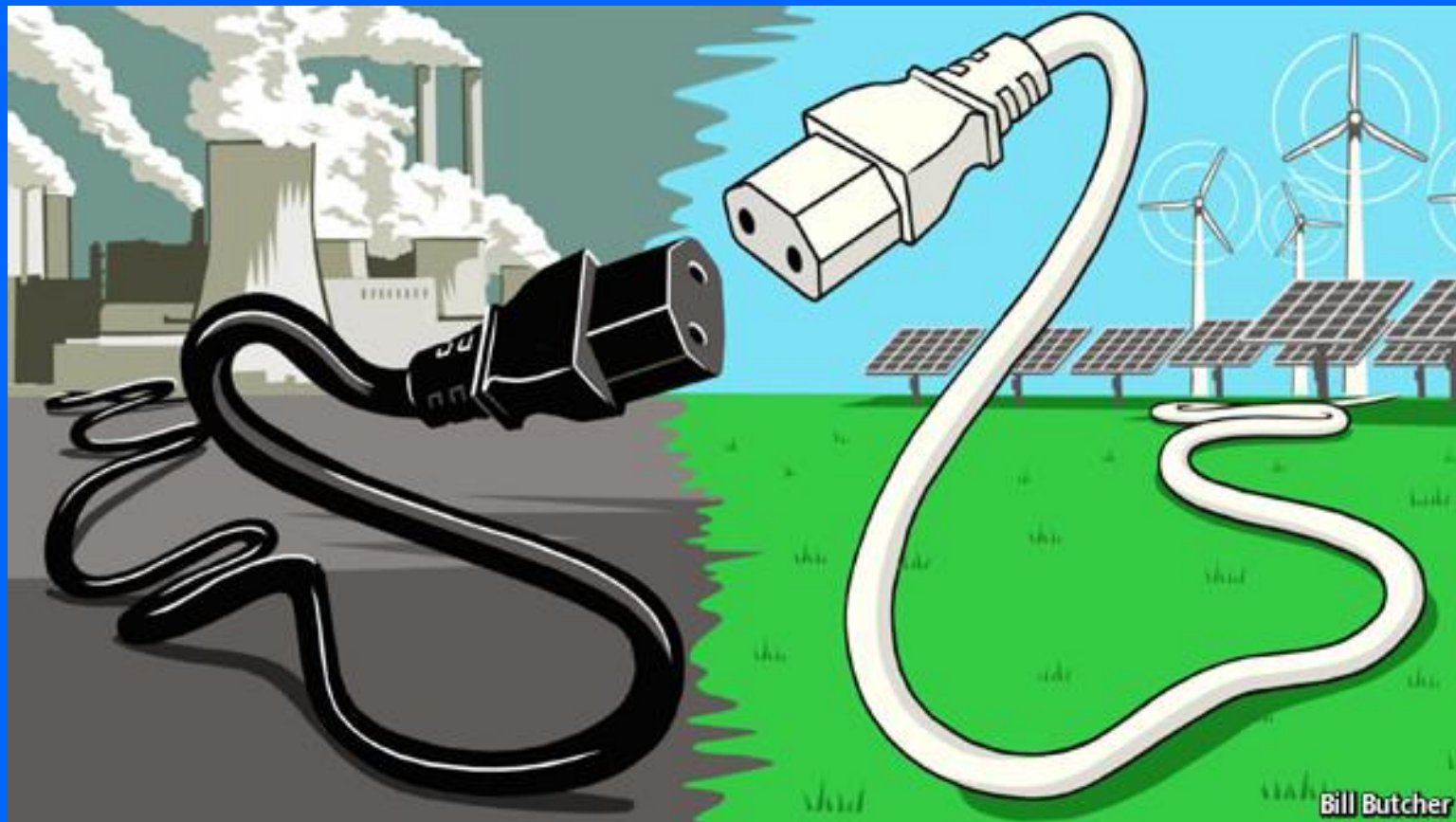
Source: Industry Forecast 2020; Status: 1/2009





# Clash of Systems

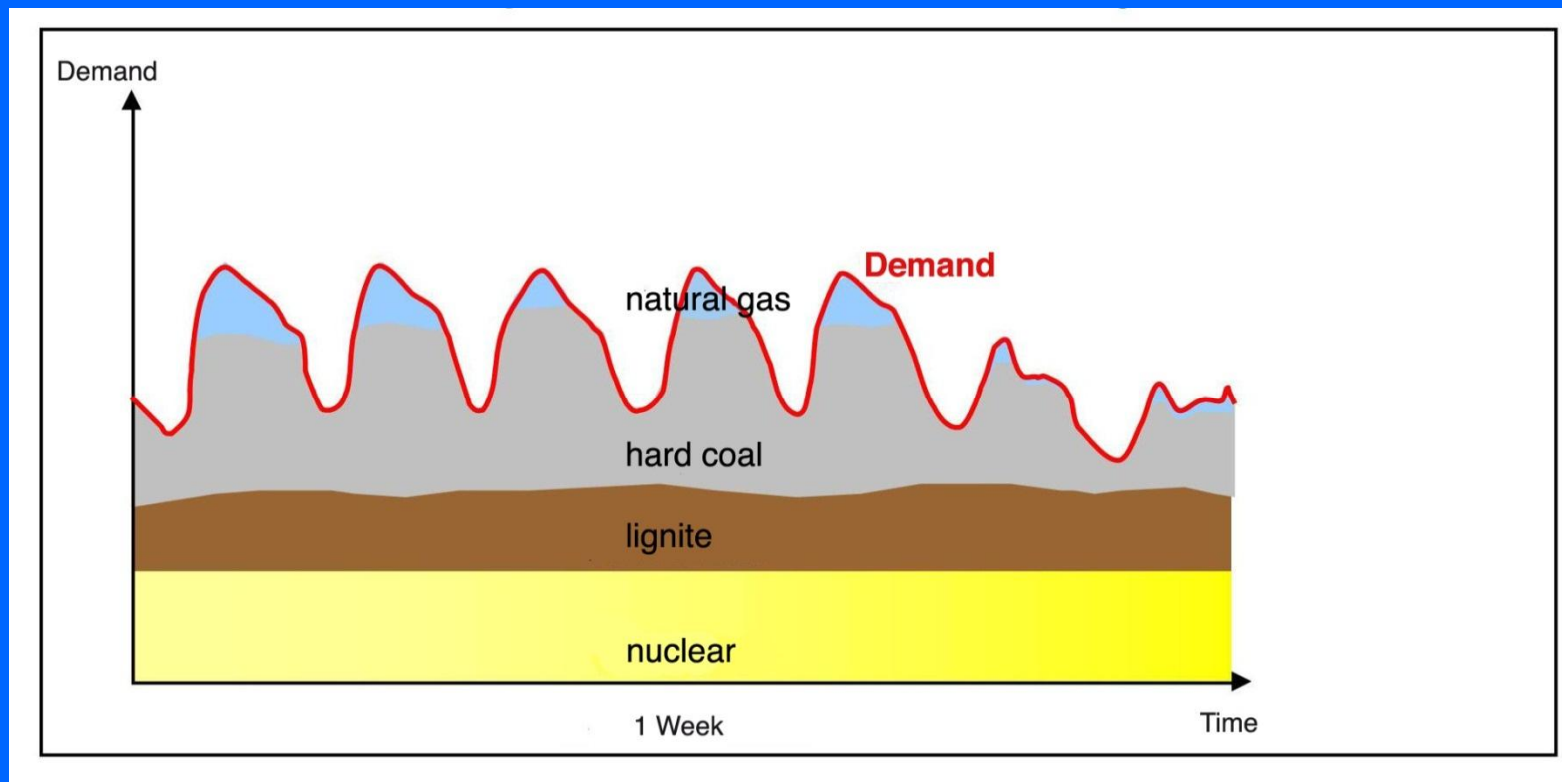




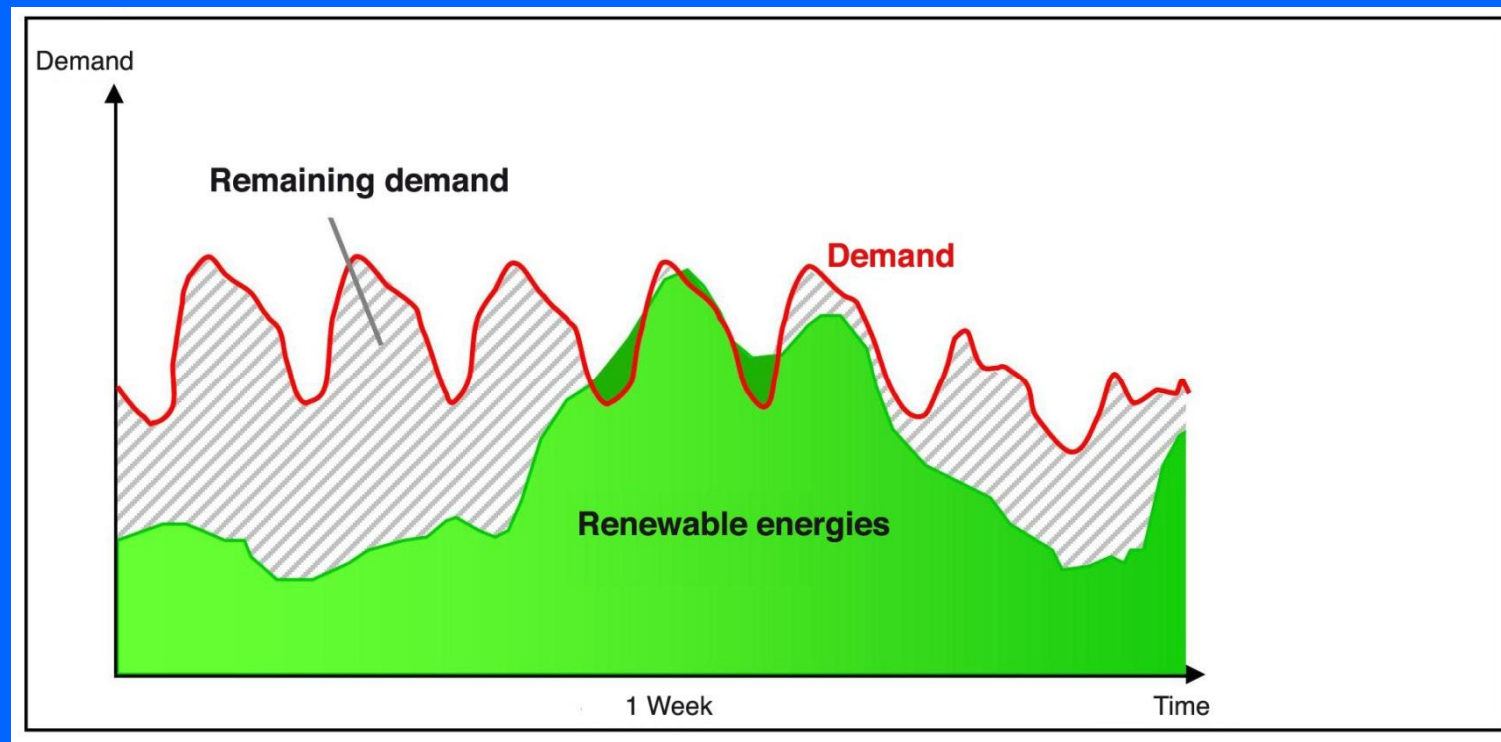
Bill Butcher



# Grid without RE



# Grid with high RE content

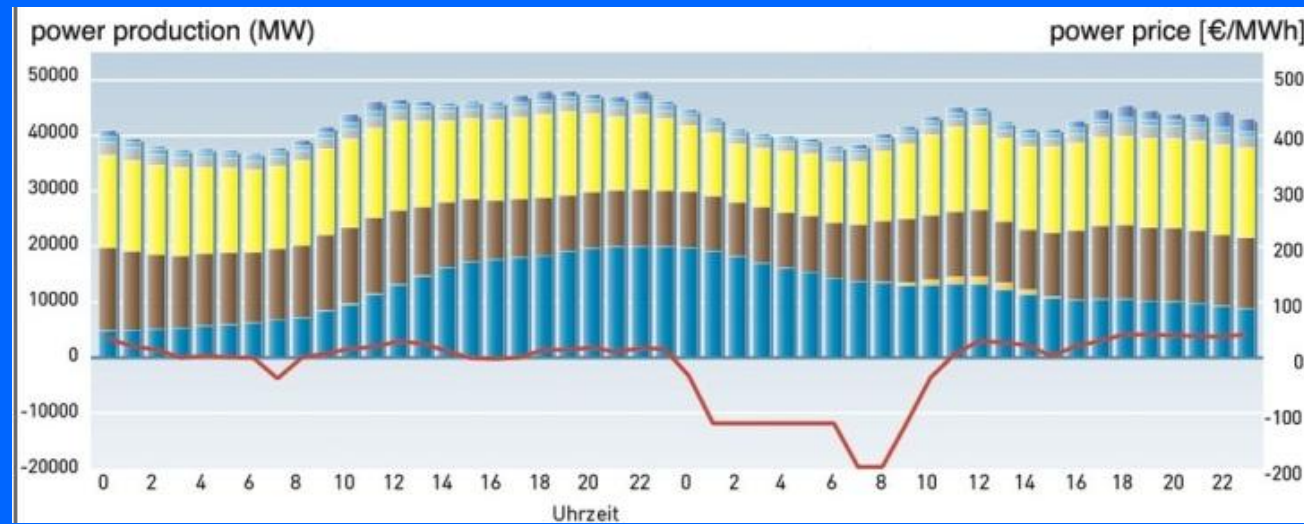


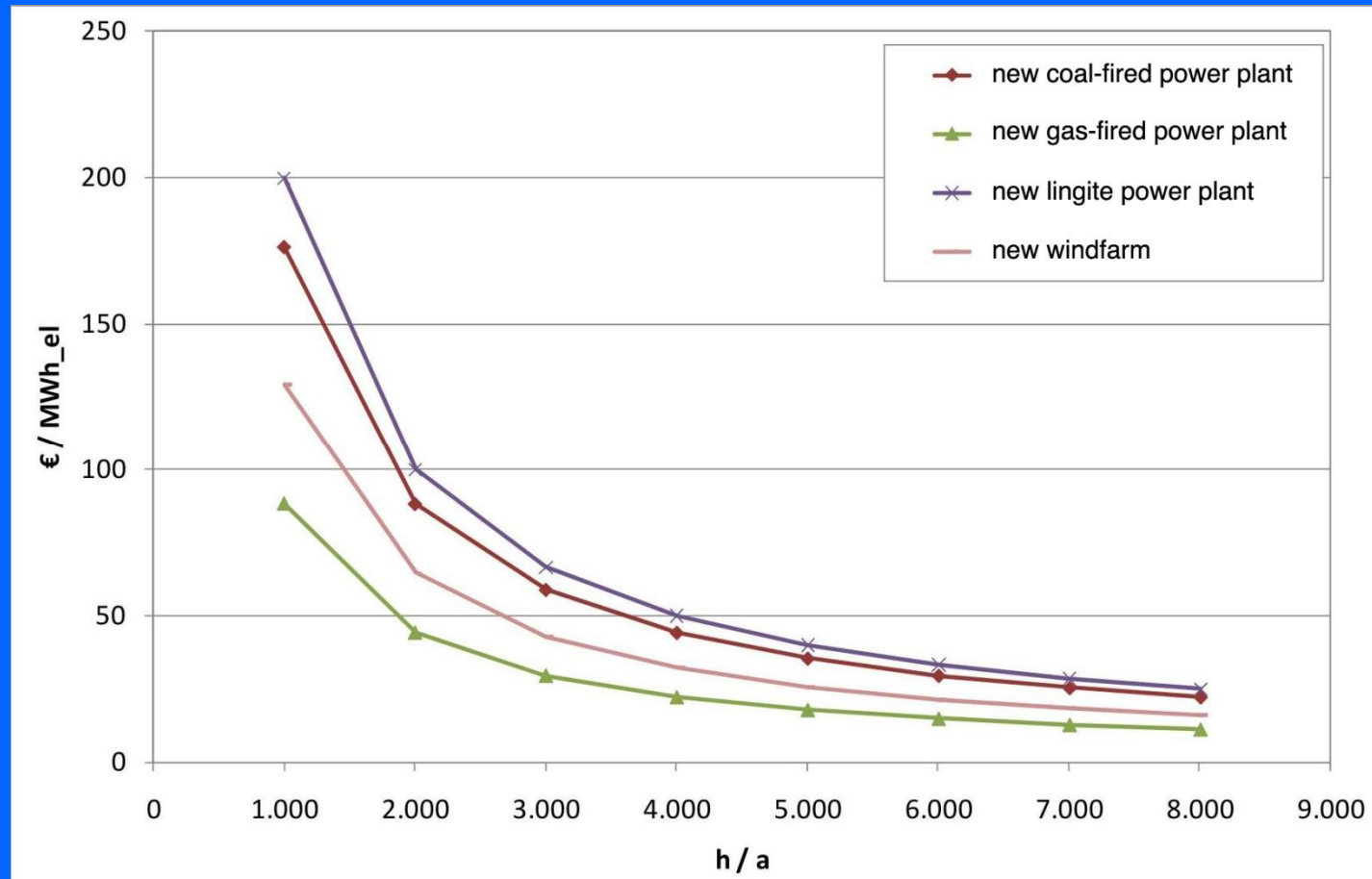
# Consequences for prices:



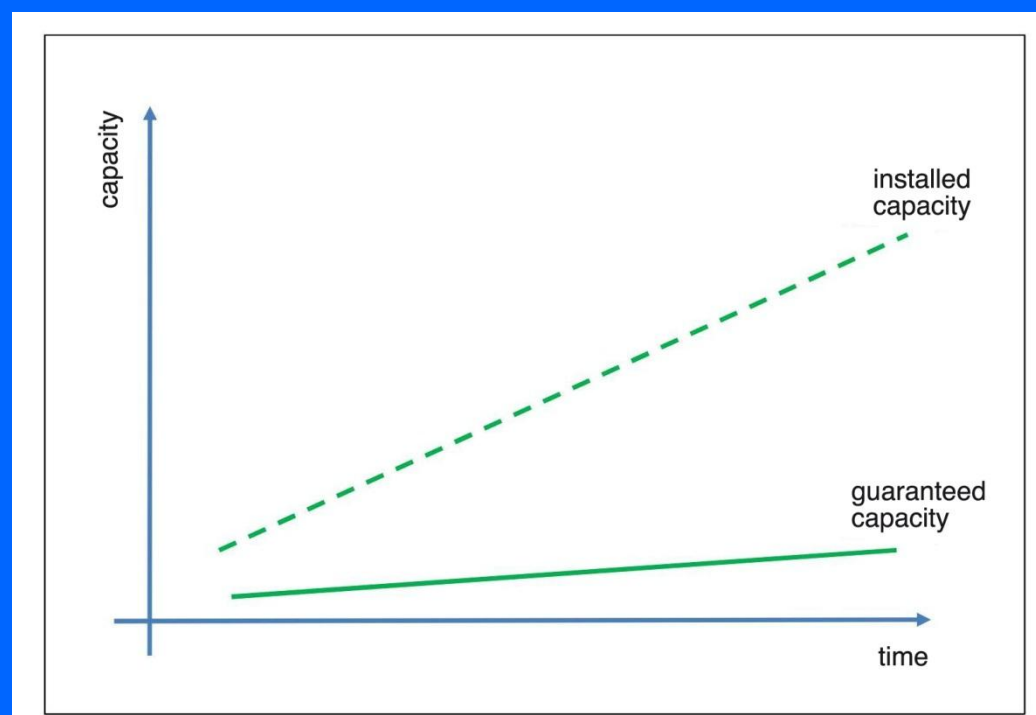
## Electricity production & price Dec 25-26, 2009

Strong wind and low demand – Price down to -200 €/MWh !

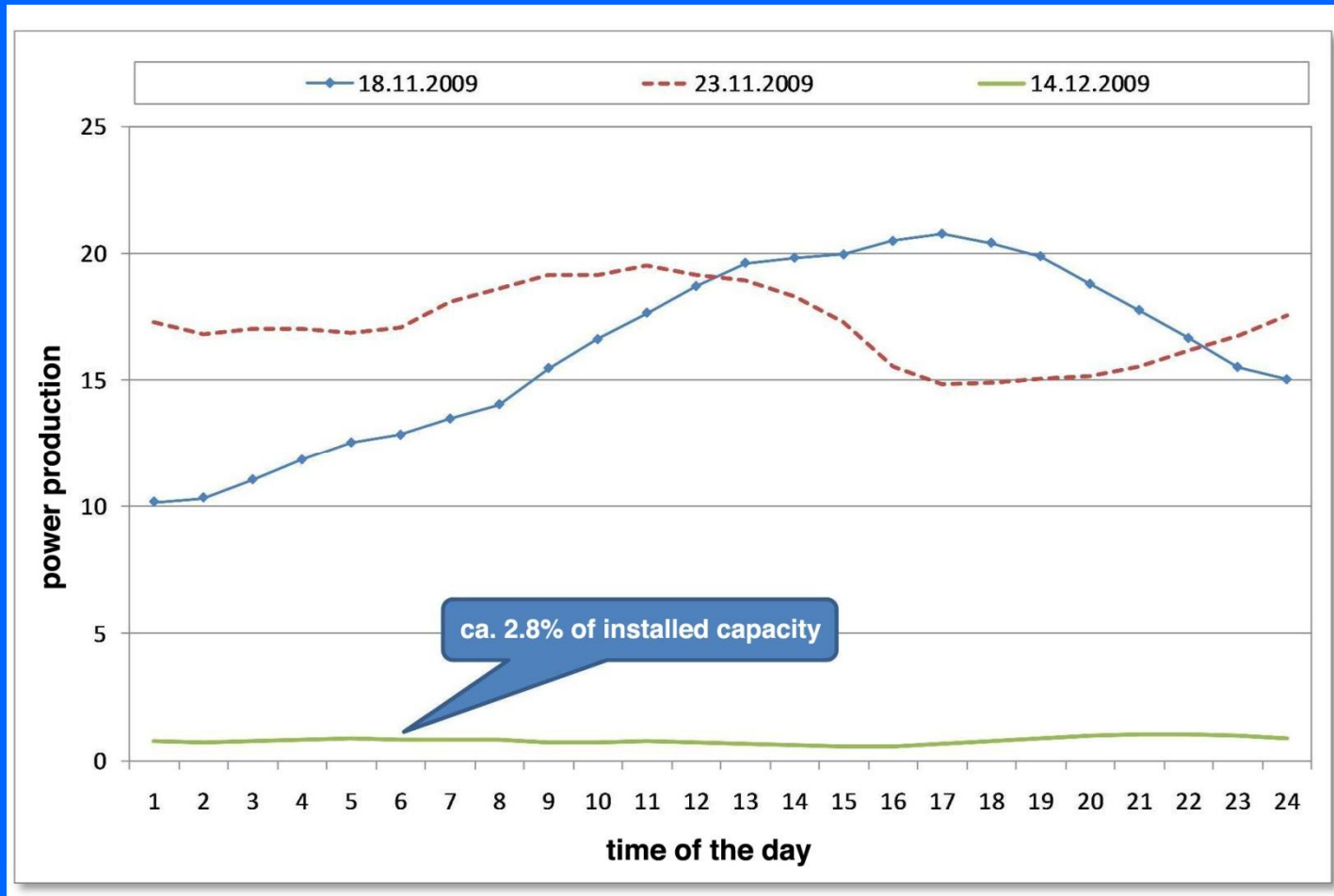




# Installed and guaranteed capacity - timeline

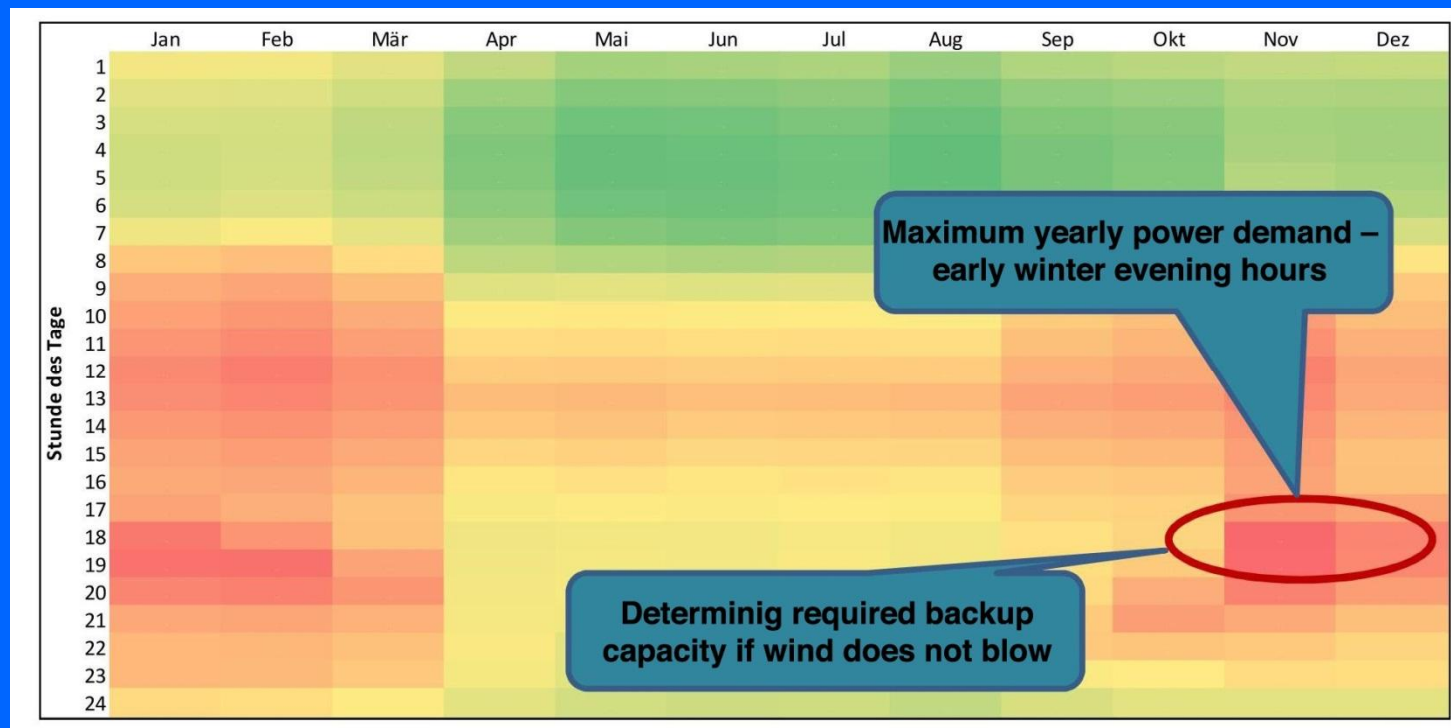






# Average electricity demand in Germany

Red = high, green = low



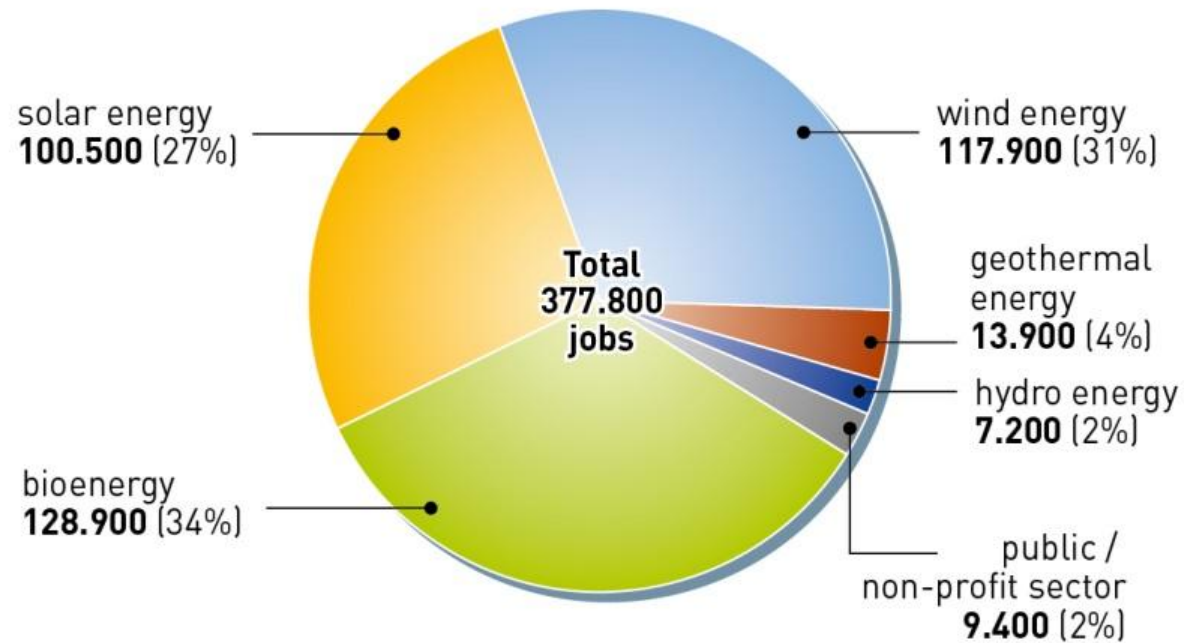
Feed-in system: €9bn annual costs  
compared to conventional electricity  
Per household: €6 monthly  
Initiates €17bn private investments  
Substitutes energy imports worth €11bn





## Renewable energies: 378.000 Jobs in 2012

Number of jobs according to sector



Sources: DLR/DIW/ZSW/GWS/Prognos,  
as of: 3/2013

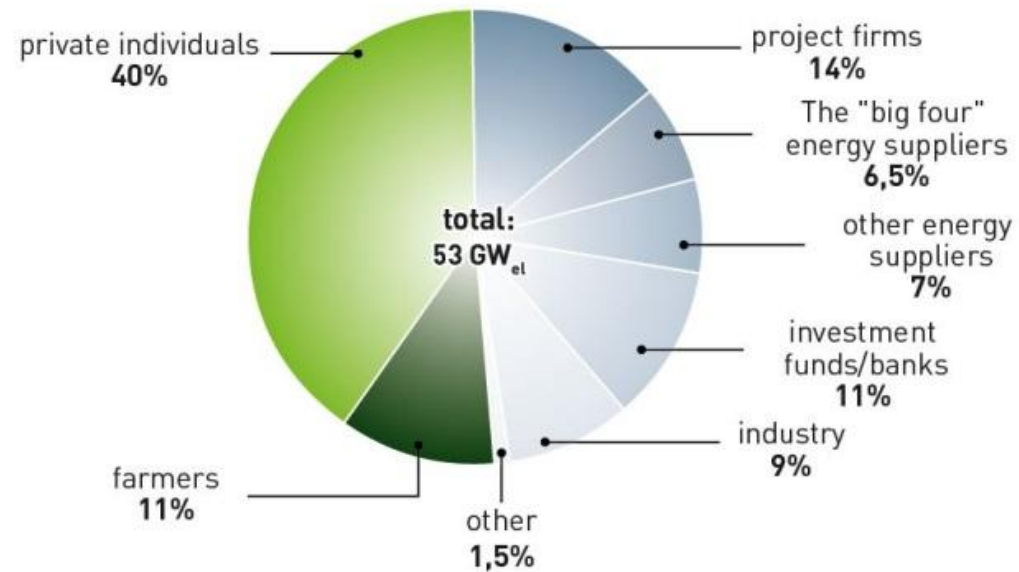
[www.renewables-in-germany.de](http://www.renewables-in-germany.de)





## Renewable Energies in the hands of the people

Ownership distribution of installed RE capacity for electricity production in 2010 (53 GW)



source: trend research; latest update: 10/11

www.unendlich-viel-energie.de



RE industries key industry of the future

RE industries can only develop with  
domestic market

Domestic market depends on political  
regulation

