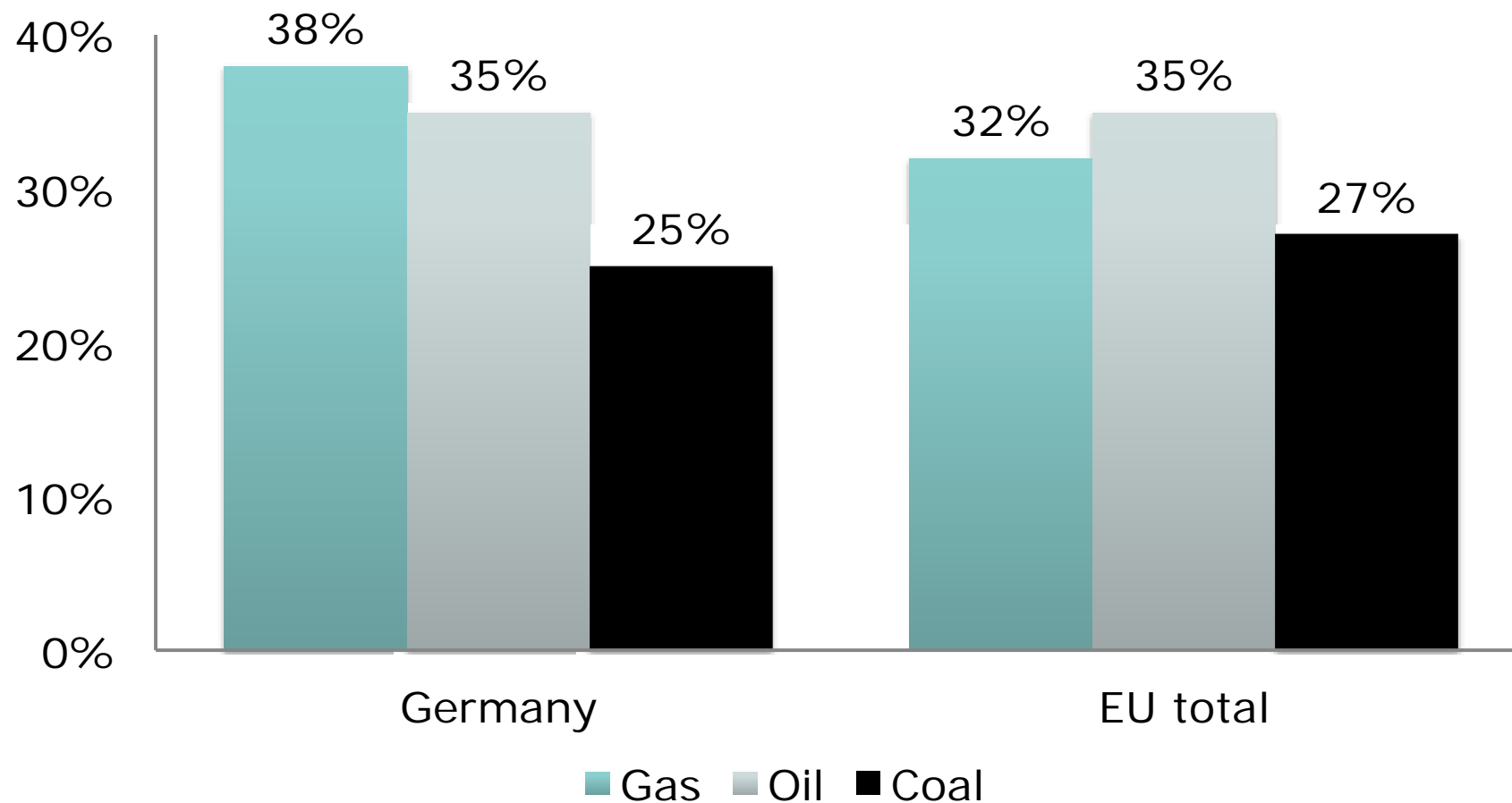


# *Financing the fight against climate change*

## *World Forum Lille 2014*

Hans-Josef Fell  
President of Energy Watch Group  
Member of German Parliament  
(1998-2013)

# Energy imports of Europe from Russian Federation 2013



Global Warming  
Oftener and more powerfull:  
aridity and forest fires, floods and storms



Damage Hurricane Sandy: 100 Billion US \$

# The imperative for climate protection

Cooling down the earth

This is  
possible!

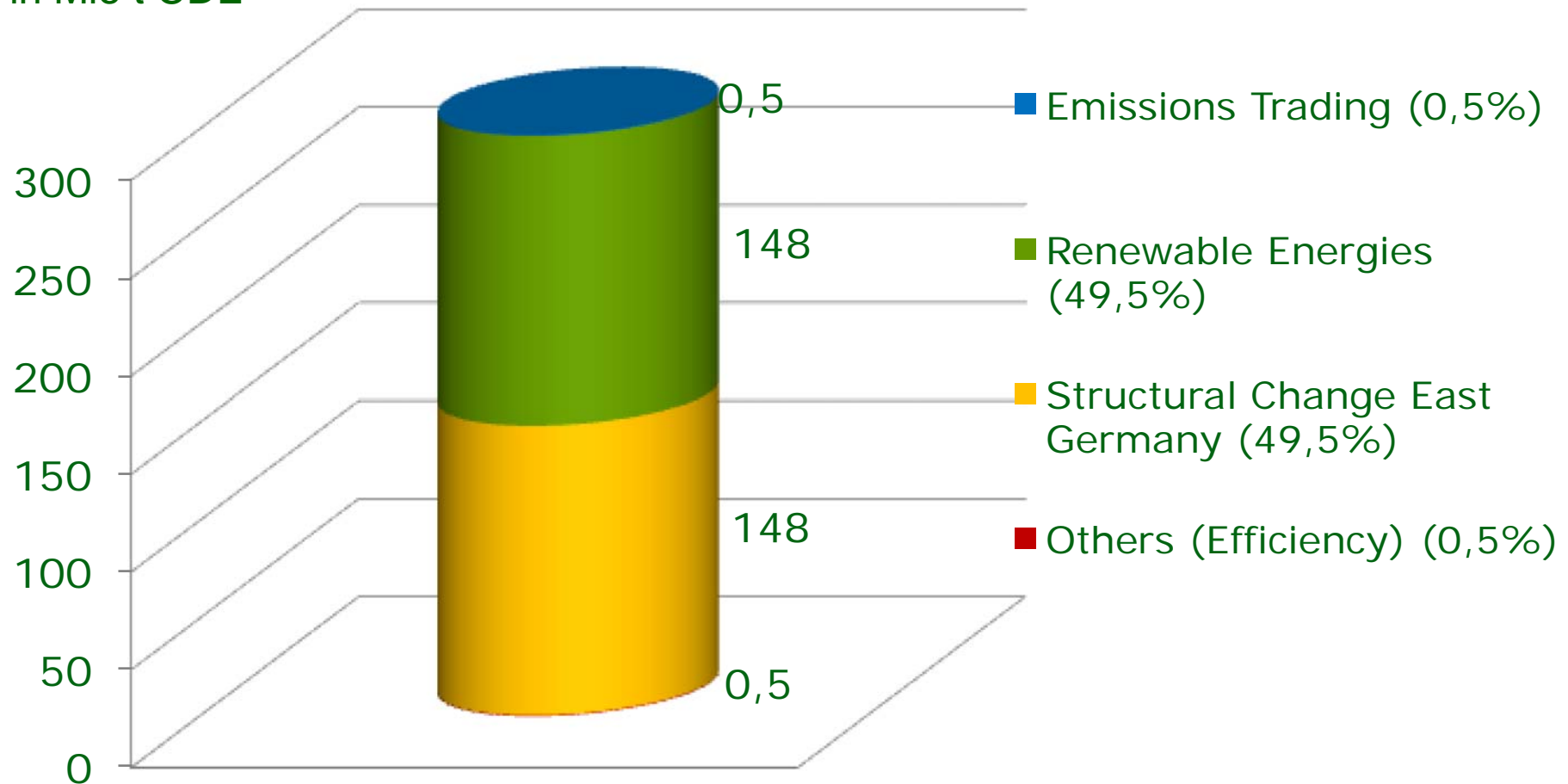
# Climate cooling, Energy security is possible

- First pillar:  
zero emissions
  - Go 100% Renewable Energy
  - green chemistry
  - energy saving
  - substitutes for ferro-concrete
- Second pillar:  
carbon purification of the earth's atmosphere
  - greenland, reforestation and organic agriculture
  - biochar, biocoal, untreated vegetable oils
  - Greening the deserts

**Goal: 330 ppm instead of 2°C global warming**

# CO<sub>2</sub>-Savings in Germany in 2013: ca. 297 Mio t; ca. 25% less than in 1990

in Mio t CDE



Source: BMU, 2009; Quaschning, Volker, 2012: [www.volker-quaschning.de/](http://www.volker-quaschning.de/)  
AEE, 2014

Hans-Josef Fell  
[www.hans-josef-fell.de](http://www.hans-josef-fell.de)

# A new alliance for climate protection: finance industry (political actor & financier)

- Make money with climate protection and not with climate pollution.
- Switch energy investment from fossil/nuclear to renewables.
- Promote for political strategies.
- You can join this new alliance.

Let us create a new alliance:

FICC – Financial Initiative for Climate Cooling

# Policies for Energy Security as well for Climate protection

Promoting Renewables, chemistry & organic farming:

- laws for feed-in-tariffs, instead of tendering
- Get Fit Systems for developing countries
- tax relief for renewables
- carbon tax
- canceling subsidies for intensive agriculture, for fossil and nuclear energy and chemistry
- research and education offensive for renewables and organic farming
- reducing obstacles for approval

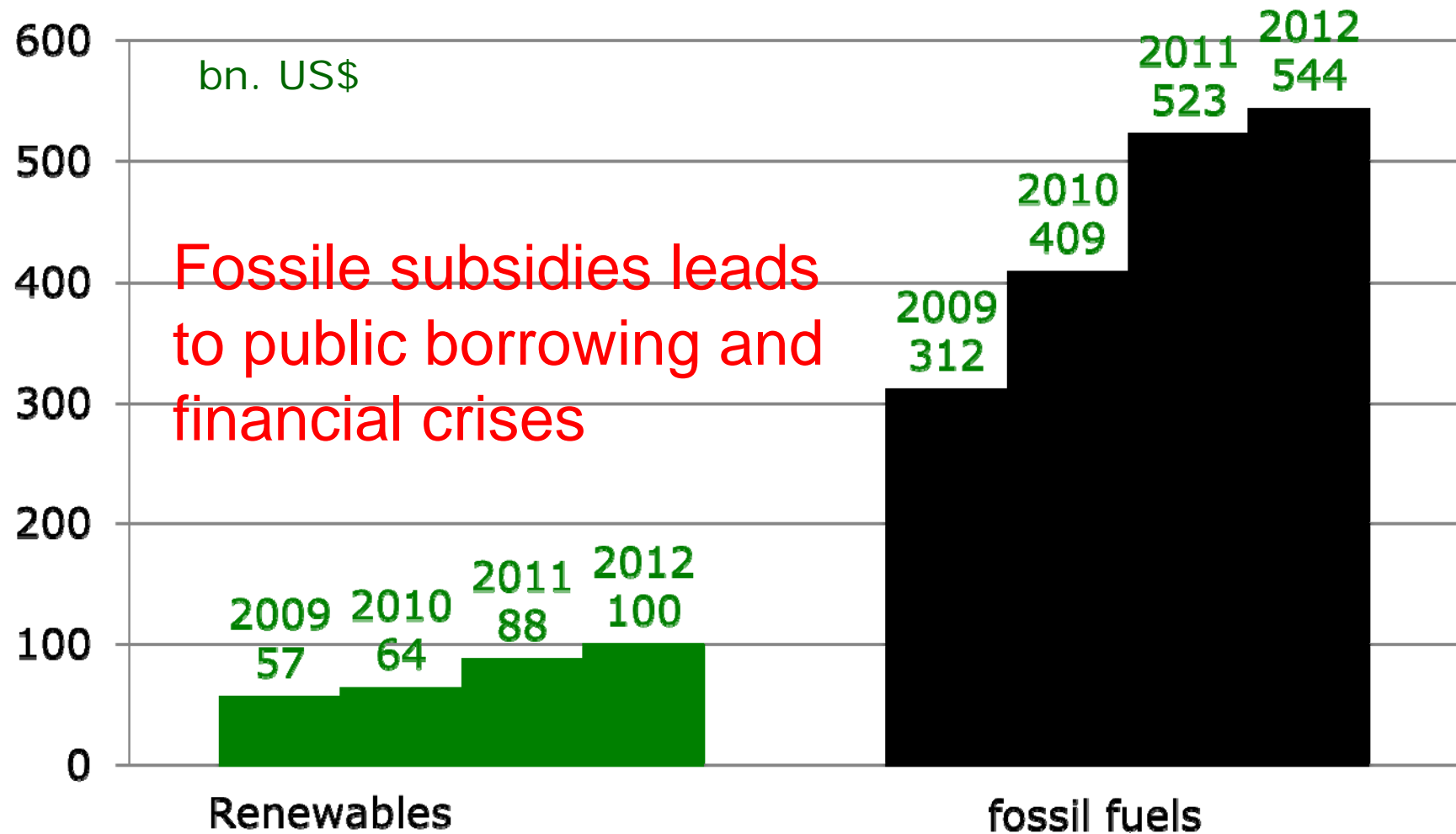
not suitable for promoting climate protection:

- quota or certificate systems, emission trading



# Global subsidies: renewables/fossil fuels

Global warming subsidies: 100 US\$/t CO<sub>2</sub>



Source: OECD/IEA/bearb. VDI nachrichten 45/10 and 6/13

Hans-Josef Fell  
[www.hans-josef-fell.de](http://www.hans-josef-fell.de)

# A Path to Sustainable Energy by 2030



‘Wind, water and solar technologies can provide 100 percent of the world’s energy, eliminating all fossil fuels.’

*(Mark Z. Jacobson & Mark A. Delucchi)*

# Costs of renewable energy vs. costs of continued use of fossil fuels

Estimated costs fossil, nuclear energies (US \$)	
Petroleum	3350-4475 Bn.
Natural Gas	550-830 Bn.
Coal	150-300 Bn.
Electricity	1490-2150 Bn.
Sum p.a. (without external costs)	5000–7750 Bn.
<b>Sum 2010-2030</b> (+ 20% rise)	<b>200 000 Bn.</b>
<b>Sum to replace world's energy with 100 % renewables by 2030</b>	<b>100 000 Bn.</b>

Sources: Jacobson/Delucchi, 2009, A plan for a sustainable future, in: Scientific American; Dr. Werner Zittel, 2010, Worldwide Estimated Yearly Energy Costs (EWG 2010)

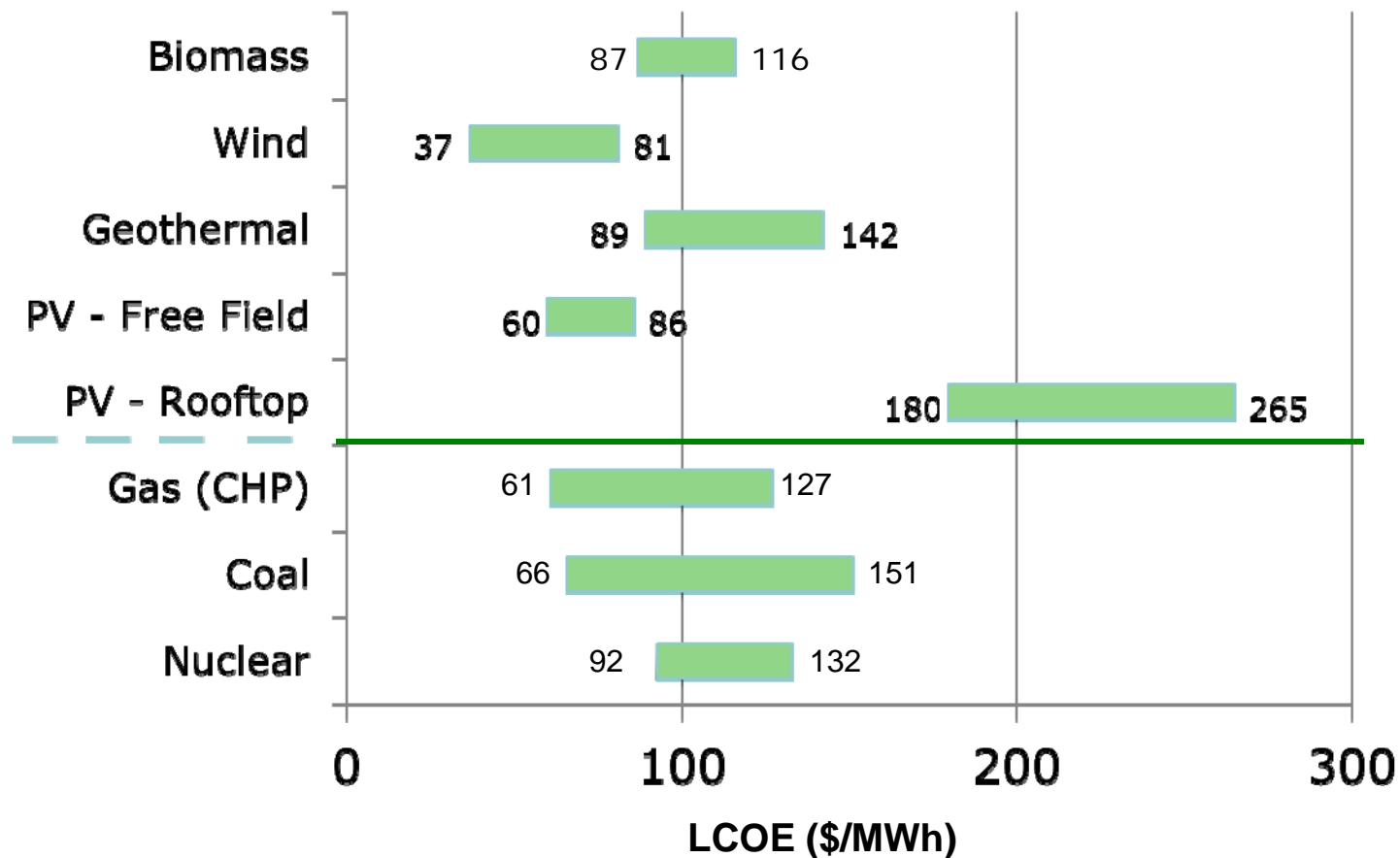
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# How to finance climate protection

- Renewables: already today the cheapest energy investment
  - Fossil/nuclear is today's stranded investment
  - It is stupid for funds, banks, hedge-funds to invest still in fossil/nuclear
  - To get profits: Energy investment must switch to renewables
- Help the poorest of the poor with microcredits
- Collect investment money with cooperatives

# Levelized Cost of Energy Comparison

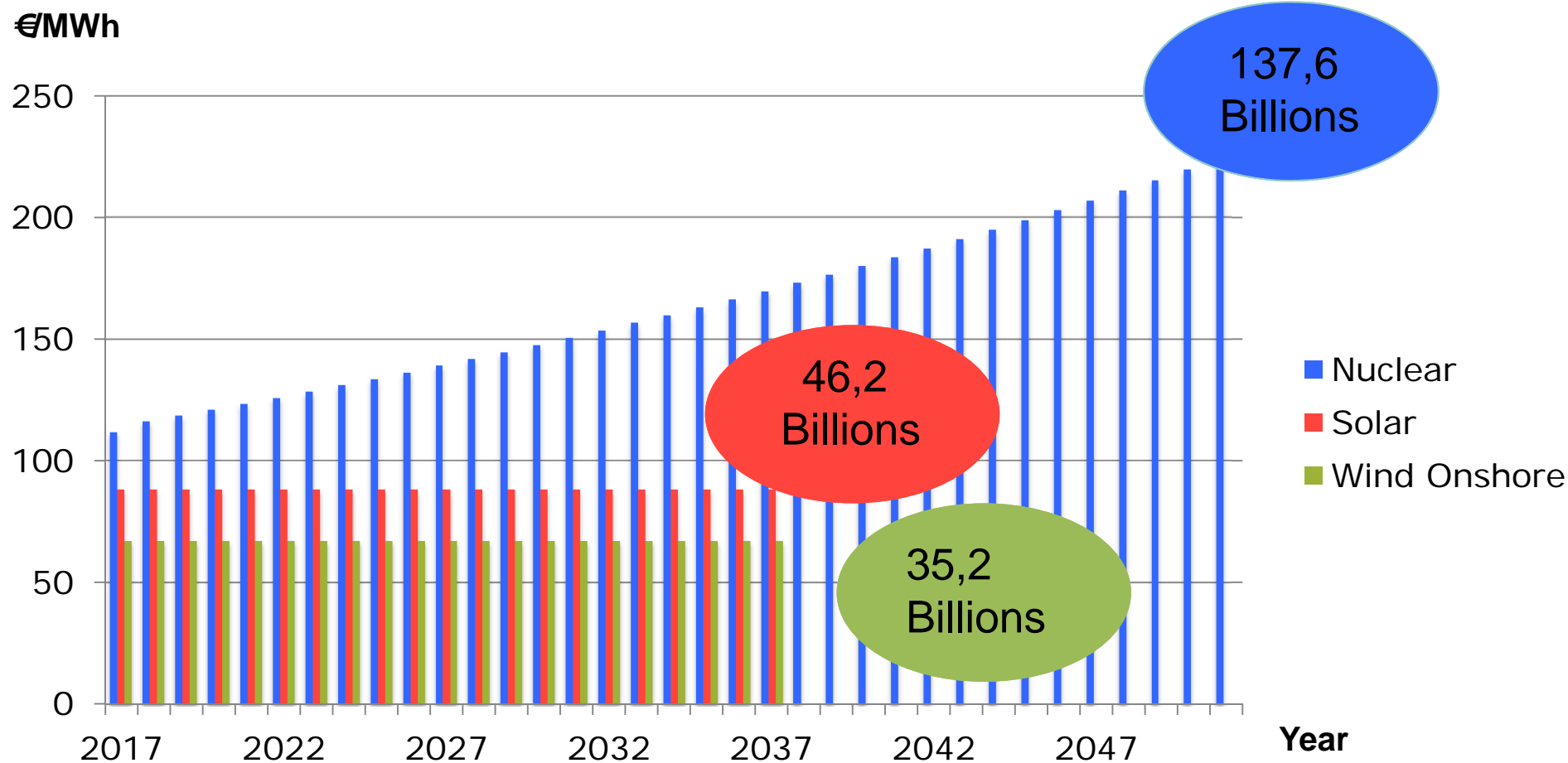
US Minimum and Maximum Price in March 2014



Source: Lazard's LCOE Analysis, Version 8.0 (2014)

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# Costs of Feed-in Compensation for New Nuclear Power Plants in Great Britain, PV and Wind Power Plants in Germany



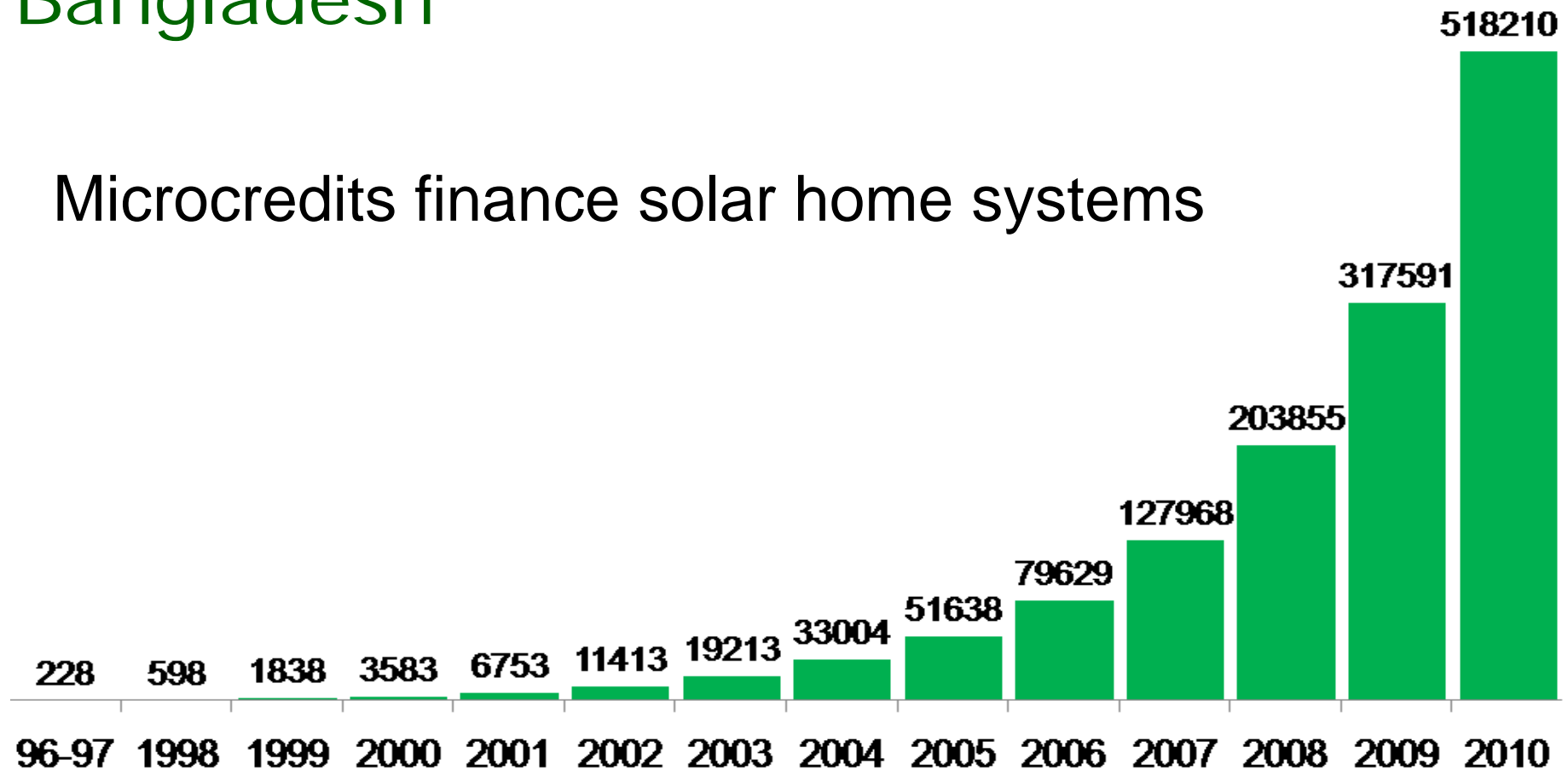
Source: Agora Energiewende und Prognos, 2014

Data in € at future prices

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# Amount of the installed solar home systems by the Grameen Bank in Bangladesh

Microcredits finance solar home systems





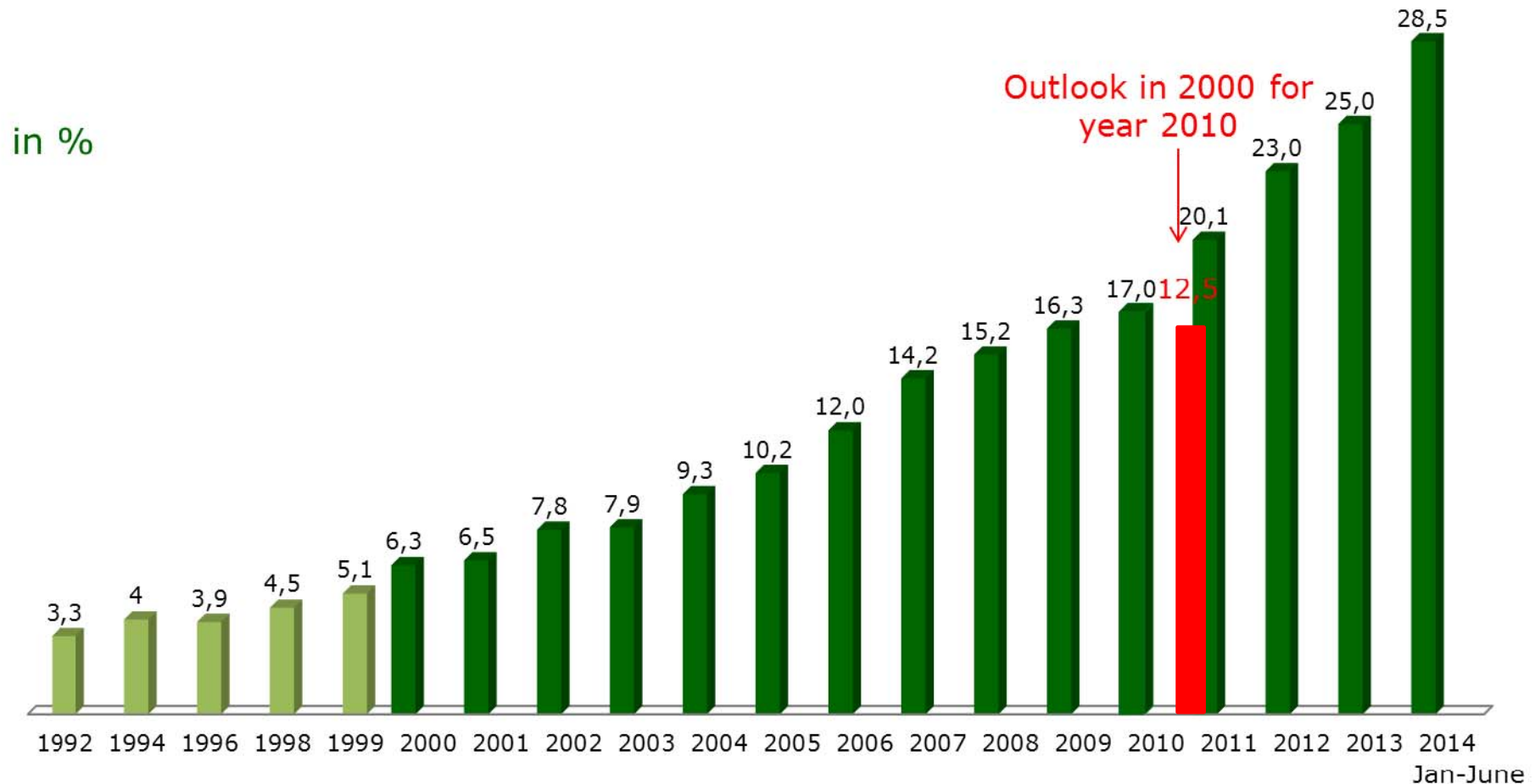
**Cooperative in Großbardorf 2005-2012**  
**15 Million Euro from 1000 citizens**  
**Renewables: 90 % Heating; 470 % Electricity**



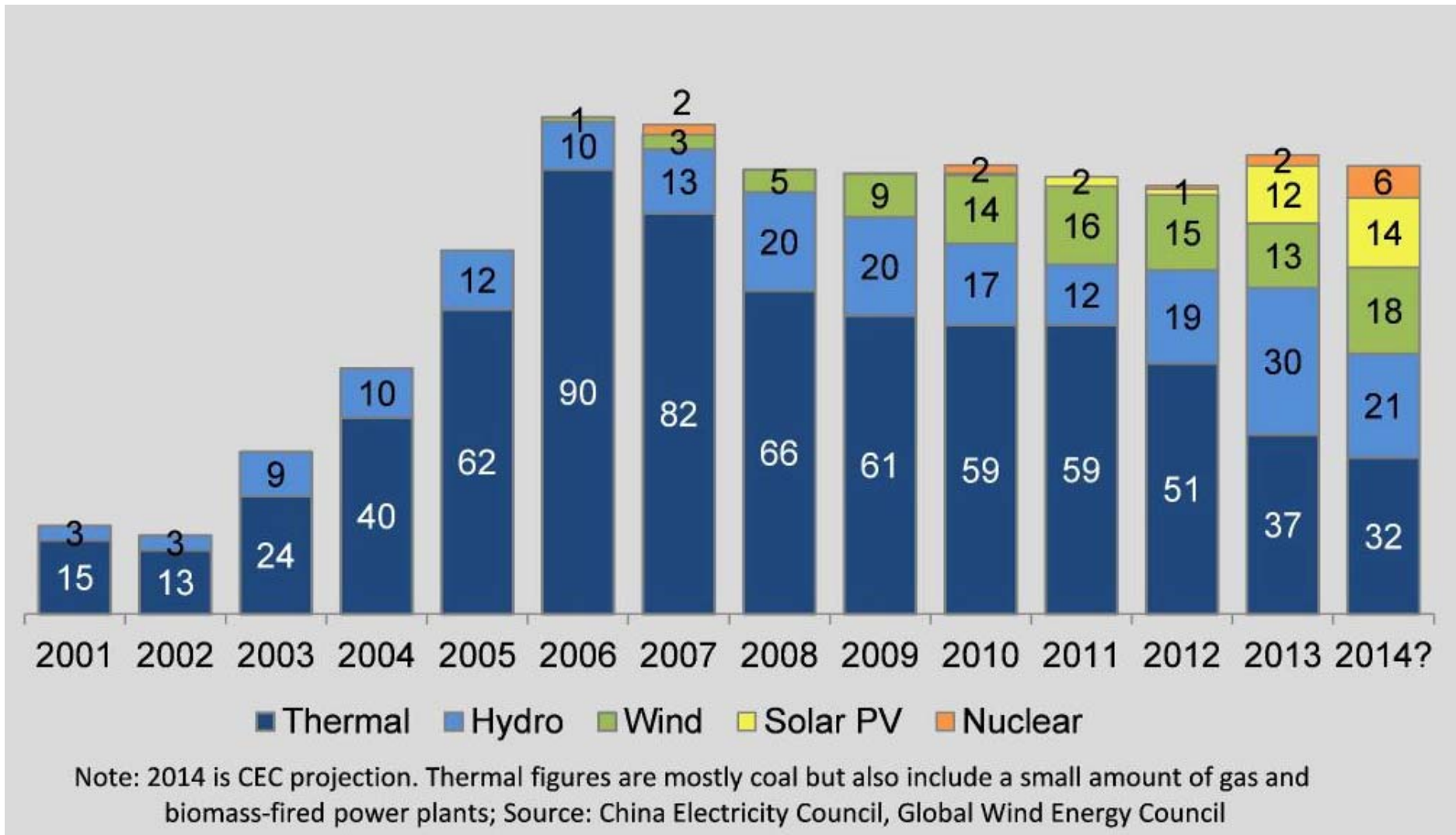


# With political support, renewable energy grows very fast

(Share of renewables in the gross electricity consumption in Germany)



## China annual power grid capacity additions (GW)



# Global Cooling



published in summer  
2012.

paperback edition for  
19 €.

[www.globalcooling-climateprotection.net](http://www.globalcooling-climateprotection.net)

***Thank You Very  
Much for Your  
Attention!***

[www.hans-josef-fell.de](http://www.hans-josef-fell.de)