

Energy

# Political Framework for Renewable Energies in Germany

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AHK-Program "Renewables Made in Germany"  
Vilnius, Lithuania

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[www.german-renewable-energy.com](http://www.german-renewable-energy.com)



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- Renewable Energy Sources Act (RESA)
- Market Incentive Programme (MIP) and  
Renewable Energy Heat Act (REHA)
- Research and Development
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## Examples for RE support mechanisms in Germany

- ▶ RESA (Renewable Energy Sources Act, „EEG“): Feed-in Tariff for electricity from RE
- ▶ MIP (market incentive program, „MAP“): state subsidies for investment in using heat from RE
- ▶ Renewable Energy Heat Act („EEWärmeG“)
- ▶ Research and Development



## RESA – RE electricity feed-in tariff

- ▶ RESA enacted in 2000, adjusted/amended in 2004, 2007 and 2009
- ▶ Priority for feed-in of RE
- ▶ Extensive regulation for grid access
- ▶ legally regulated payment rates
  - Long-term perspective and investment security (20years)
  - Strong incentive for efficiency boost by degression of payment rates
- ▶ 2005: European Commission attested feed-in tariffs to be an effective and cost efficient instrument

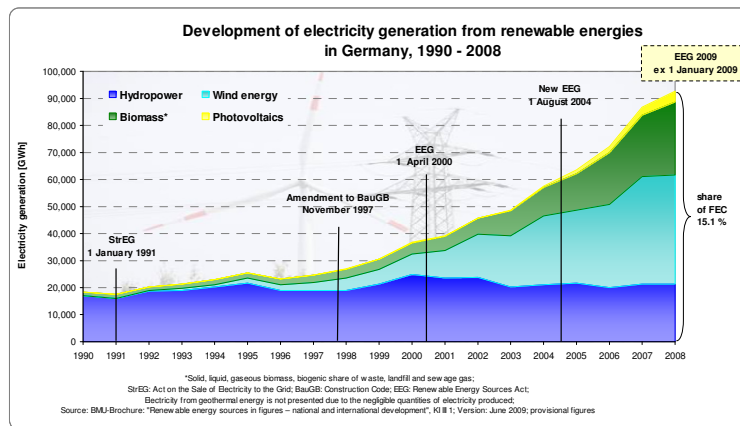


Feed-in tariffs - RESA 2009

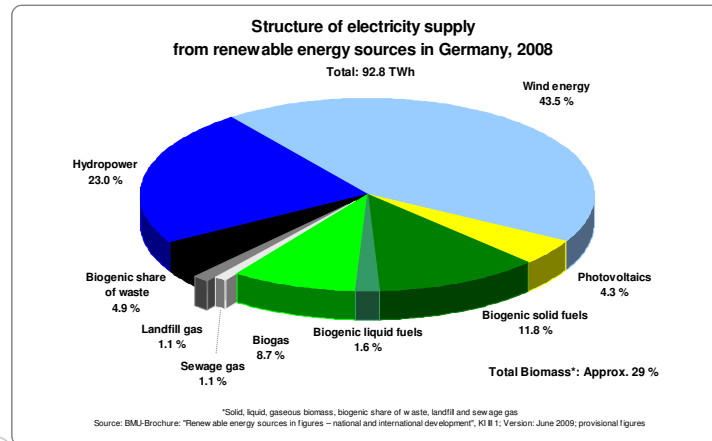
	Cent(EUR)/kWh	Degression
<b>Hydropower (&lt; 5 MW)</b>	7.65 – 12.67	0 %
<b>Biomass (&lt;20 MW)</b>	7.79 – 27.67	1.0 % (on base tariff)
<b>Geothermal Energy (&lt;20MW)</b>	10.5 – 23.00	1.0 %
<b>Wind energy (onshore)</b>	5.02 – 9.7	1.0 %
<b>Wind energy (offshore)</b>	3.50 – 15.00	5.0% (as of 2015)
<b>PV power</b>	31.94 – 43.01	8.0% – 10.0 %



Electricity from RE



## Structure of electricity from RE



## MIP and REHA – Stimuli and demands

### REHA - Renewable Energy Heat Act (1 Jan 2009)

- ▶ new buildings must use RE
- ▶ exceptions and substitutes possible
- ▶ Solar keymark, guaranteed heat, min. efficiencies, heat meters etc.
- ▶ Apply before project start

### MIP - Market Incentive Programme

- ▶ increased budget
- ▶ Open-ended program
- ▶ Focus on energy efficient retrofit (1/3 higher support than for new) & innovative technologies (bonus system)



## Renewable heat: Market Incentive Programme (MIP)

- ▶ Program to stimulate RE use for heat
- ▶ Subsidies for smaller systems  
(biomass < 100 kW, solar thermal < 430 ft<sup>2</sup>, efficient heat pumps)
- ▶ Low interest loans for bigger systems  
(also district heating, geothermal)
- ▶ Bonus for efficient, innovative or combination of technologies
- ▶ Budget 2008 350 Million € (\$ 515 Mio.)
- ▶ Budget 2009 (-2012) 500 Million € (\$ 735 Mio. )
- ▶ Since 1999 965 Million € (\$ 1,419 Mio.)
- ▶ Activated investment 8.2 Billion € (~ \$ 12 Billion)

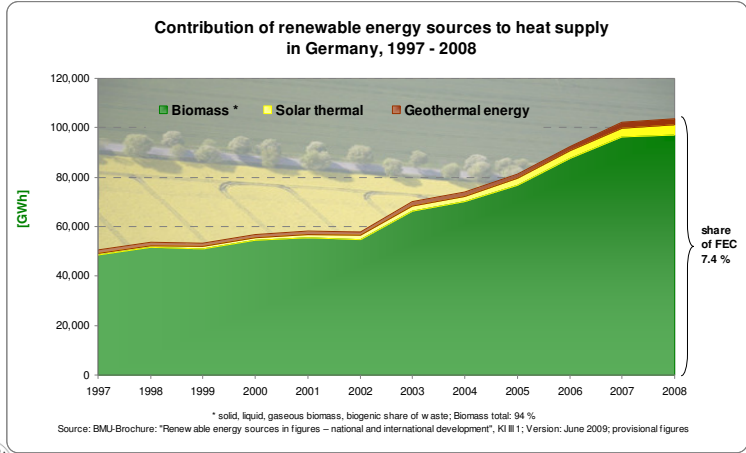


## Market Incentive Programme – Supported technologies

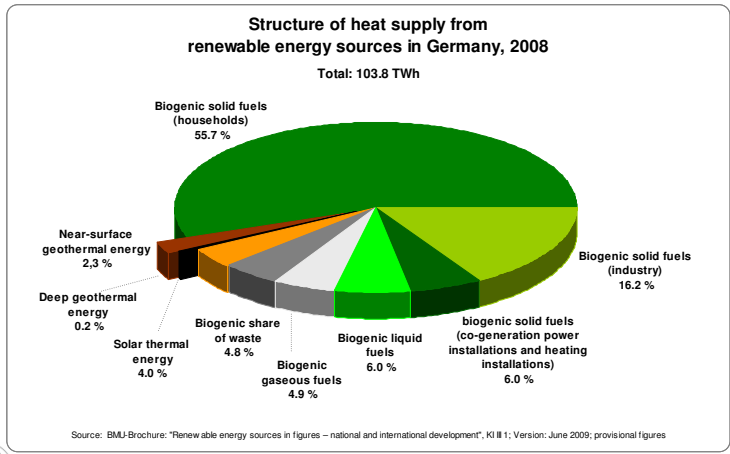
- ▶ Solar thermal (DHW, (process) heating, cooling)
- ▶ Wood boilers (pellets, chips, logs)
- ▶ Heat pumps (incentive only)
- ▶ Small district heat grids (loan only)
- ▶ Deep geothermal heat (loan only)
- ▶ Very innovative technologies
- ▶ Large solar plants
- ▶ Large heat storages etc.



## Contribution of RE to heat supply



## Structure RE heat supply



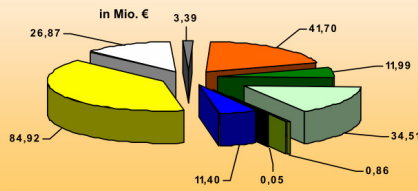
Marktanreizprogramm für Erneuerbare Energien

Teil BAFA: Investitionskostenzuschüsse

Teil KW: zinsvergünstigte Darlehen und Tilgungszuschüsse

Bilanz 2008: 216 Mio. € Fördermittel; 1,64 Mrd. € Investitionen

(BAFA: 154.000 geförderte Anlagen / KW: 459 zugesagte Darlehen)



BMU - KI III 2

15



MIP: Incentives 2009, examples

	Stock	New	Bonus
<b>Solar collectors, DHW</b> <= 40m2 gross collector area	60€/m <sup>2</sup>	45€/m <sup>2</sup>	New efficient boiler (gas, fuel oil) Additional heat pump Efficient circulation/solar pump
<b>Solar collectors, DHW &amp; space, process heat, cooling</b> > 7 / 9 m2 flat plate/vacuum <40m2	105€/m <sup>2</sup>	78.75€/m <sup>2</sup>	See before PLUS: efficiency bonus 50%/100% for very/super efficient buildings
<b>Solar collectors, innovative</b> 20 to 40m2 gross collector area	210€/m <sup>2</sup>	157,50€/m <sup>2</sup>	
<b>Heat pumps (water/water)</b> (per installation):	20€/m <sup>2</sup> (max. 3000 €)	10€/m <sup>2</sup> (max. 3000 €)	Additional solar collectors Efficient circulation/solar pump very/super efficient buildings
<b>Wood pellet boilers</b> (5-200 kW; eta > 89%) per installation):	36 €/kW	27 €/kW	

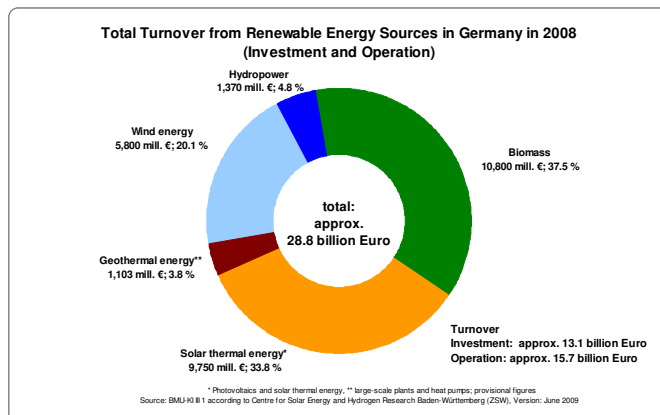


## Conclusion policy measures

- ▶ Big future challenges
- ▶ German approach has been very successful so far – electricity: targets exceeded
- ▶ Technologies are available / strong industry has developed
- ▶ Increased & improved support needed for heat & fuels to reach targets
- ▶ Smart support schemes must aim at making technologies competitive
- ▶ International cooperation needed

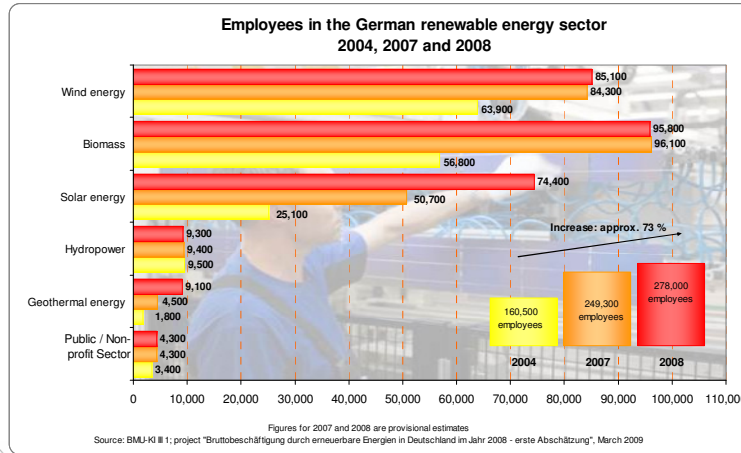


## RE business: construction & operation turnover



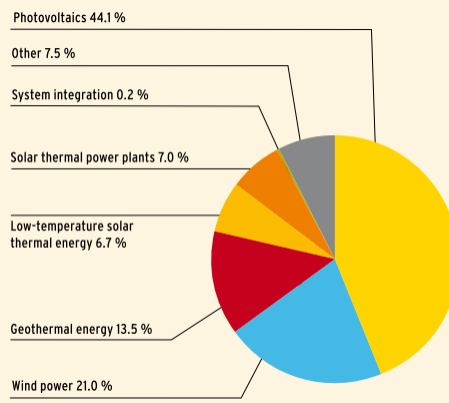


## RE and employment



## Research in Renewable Energy


- ▶ German Environmental Ministry
- ▶ Average budget (2005-2008): 90 Mio €
- ▶ Budget 2008: ca. 105 Mio. € (project value 150 Mio) for 169 projects





Energy

Conclusions



Conclusions

- ▶ RE are climate friendly, technologically mature, a „job wonder“, highly popular, approaching competitiveness,... => i.e. a widely accepted option for today AND tomorrow
- ▶ Political will / smart support is essential for further market development
- ▶ EU RE targets: in fact not „burden sharing“ but sharing of new business opportunities



### Companies present at this event

- ▶ MWM GmbH – Mr. Klaus Kohlhase
- ▶ Prolignis Energie Consulting GmbH & Co. KG – Mr. Julius Chaloupka
- ▶ ATRES engineering biogas – Mr. Gunther Pesta
- ▶ SHW – Storage & Handling Solutions GmbH – Mr. Jürgen Blessing
- ▶ REHAU Ag+Co – Mr. Andreas Jenne
- ▶ Gothaer Allgemeine Versicherung AG – Mr. Thiomias Schuindler



### Thank you!

Thank you for your attention!

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