### **Climate Policy Goals Germany**



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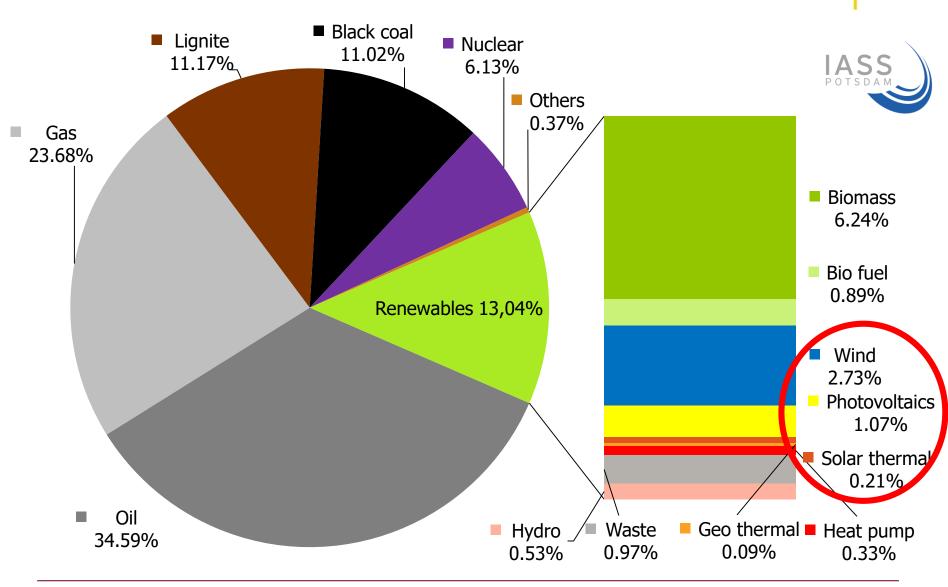


	2017	2020	2050			
Green house gas (GHG) - Emissions reduction						
GHG-Emissions compared to 1990	-31,7 %	min. - 40 %	min. - 80 bis -95 %			

2020 GHG reduction goals will foreseeable not be reached, backsliding on the climate goals by government (focus on goal 2030 -55%)

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# **Primary Energy Consumption Mix**



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#### **Renewable Energy Share Goals**

2017 2020 2050 Renewable energy goals - SHARE in energy consumption Total < 15 % 18 % 60 % Electricity 37% min. 35 % min. 80 % Heat 13% 14 % 5,2 % Transport < 60000 1 Million e-cars

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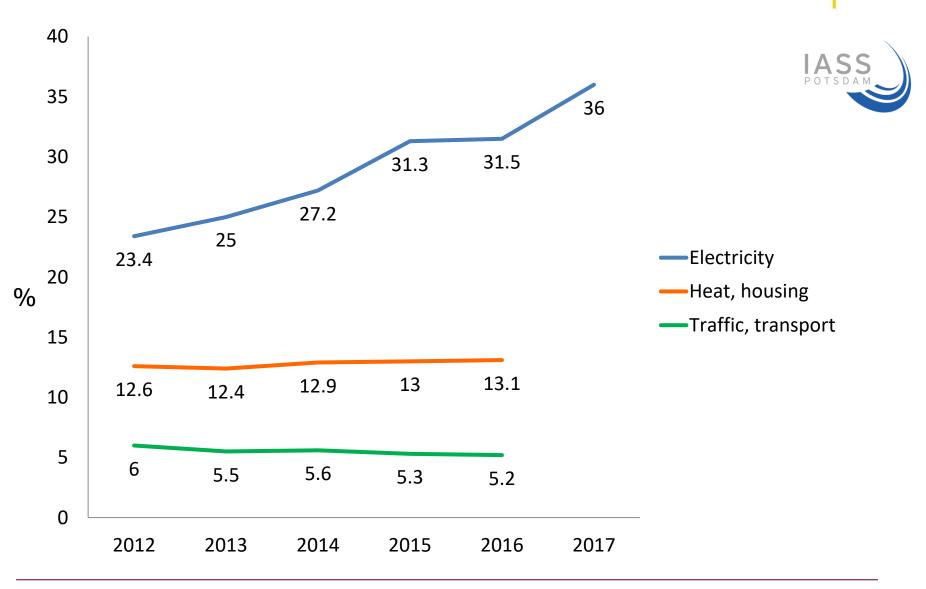


#### **Renewable Energy by Sector**

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### **Efficiency Goals**



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	2017	2020	2050		
Energy consumption reduction compared to 2008					
Total	- 6 %	- 20 %	- 50 %		
Electricity	+ 6 %	- 10 %	- 25 %		
Heat	- 7 % (2015)	- 20 %	- 80 %		
Transport (compared to 2005)	+ 1 % (2016)	- 10 %	- 40 %		



## **Feasibility to achieve GHG goals**

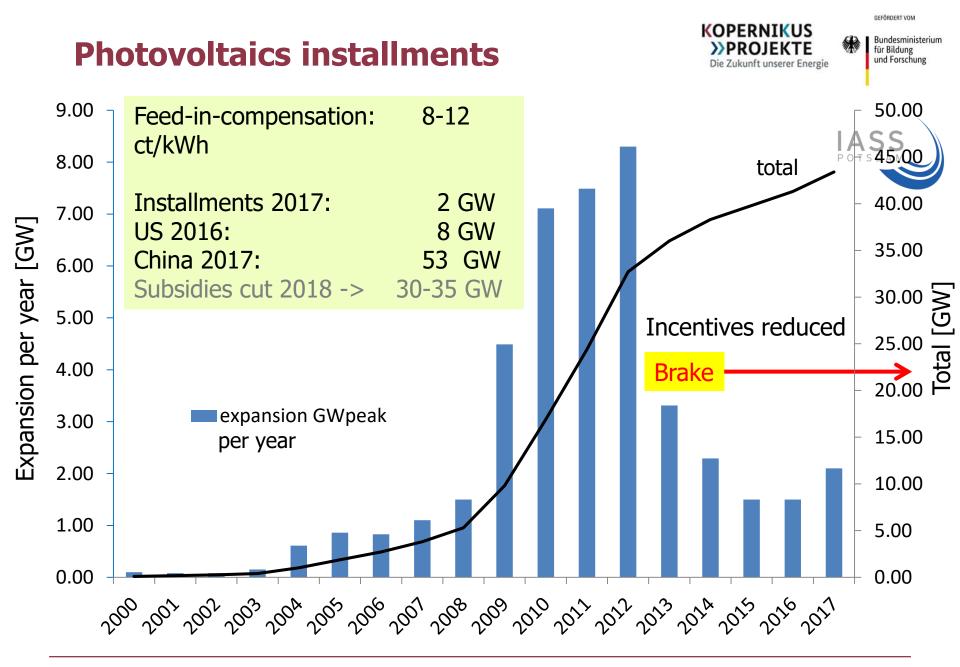
Energy source	Target systems 80-100 % Renewables capacity [GW]	Total installed capacity [GW]
	2050	2017
Wind onshore	170-200	50 (installments limited to +2.8 per year including repowering)
Wind offshore	33-85	5
Photovoltaics	150-250	43 (limited to +2.5 per year)
Hydro	5	5.6
Solar thermal	130-180	14.5
Biomass	50 TWh	47 TWh (installments limited to 150MW per year)
Synthetic fuels (supplied by RE)	80-180	0

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### **New Construction Heating Systems**

45 40 39.9 35 30 25 26.7 25.4 20 15 15 10 5 1.1 1.1 4.4 1.4 0 solarthernics 2ndl districheat nood others *ó*ÌI electricity heat pump 00

#### still > 60 % fossil based heating systems

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# **German Energy Transition 2018**

- 37% renewables share in electricity net consumption mix 2017 (US 15 %) (42% Oct-Dez 2017), however just 13 % renewables share in total
- Robust energy systems with no blackouts
- Phase-out of all nuclear power plants unti
- Coal phase out to be determined

Tenders for RE installations: highest winning bid (Nov 2017 – be built until 2021)

onshore wind 3.8 €ct/kWh offshore wind 1.9 €ct/kWh photovoltaics 4.9 €ct/kWh

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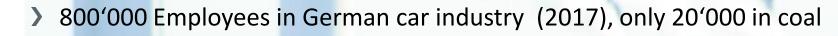




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# Socio-structural change in the coal sector test for mobility sector ?





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# Thank you