Progress towards the energy access Sustainable Development Goal

China

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INTERNATIONAL RESEARCH NETWORKFOR LOW CARBON SOCIETIES9TH MEETING:

Clean growth and innovation in a changing world

12-13 September 2017

SUSTAINABLE DEVELOPMENT GOALS

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Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

- 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
- 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
- 7.3 By 2030, double the global rate of improvement in energy efficiency
  7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
  7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

- 7.1.1 Percentage of population with access to electricity
- 7.1.2 Percentage of population with primary reliance on clean fuels and technology

- 7.2.1 Renewable energy share in the total final energy consumption

- 7.3.1 Energy intensity measured in terms of primary energy and gross domestic product (GDP)

- 7.a.1 Mobilized amount of United States dollars per year starting in 2020 accountable towards the $100 billion commitment

China: Where are we for Goal 7

- 7.1.1 Percentage of population with access to electricity

  2015: 100% household with electricity supply

- 7.1.2 Percentage of population with primary reliance on clean fuels and technology

  2015: natural gas penetration rate in cities reached 94.17%, Nearly 0 in rural

- 7.2.1 Renewable energy share in the total final energy consumption

  11.2% in 2016(5% based on IEA standard), 13.6% for non-fossil

  – 14.7% if solar heater and other renewable energy included

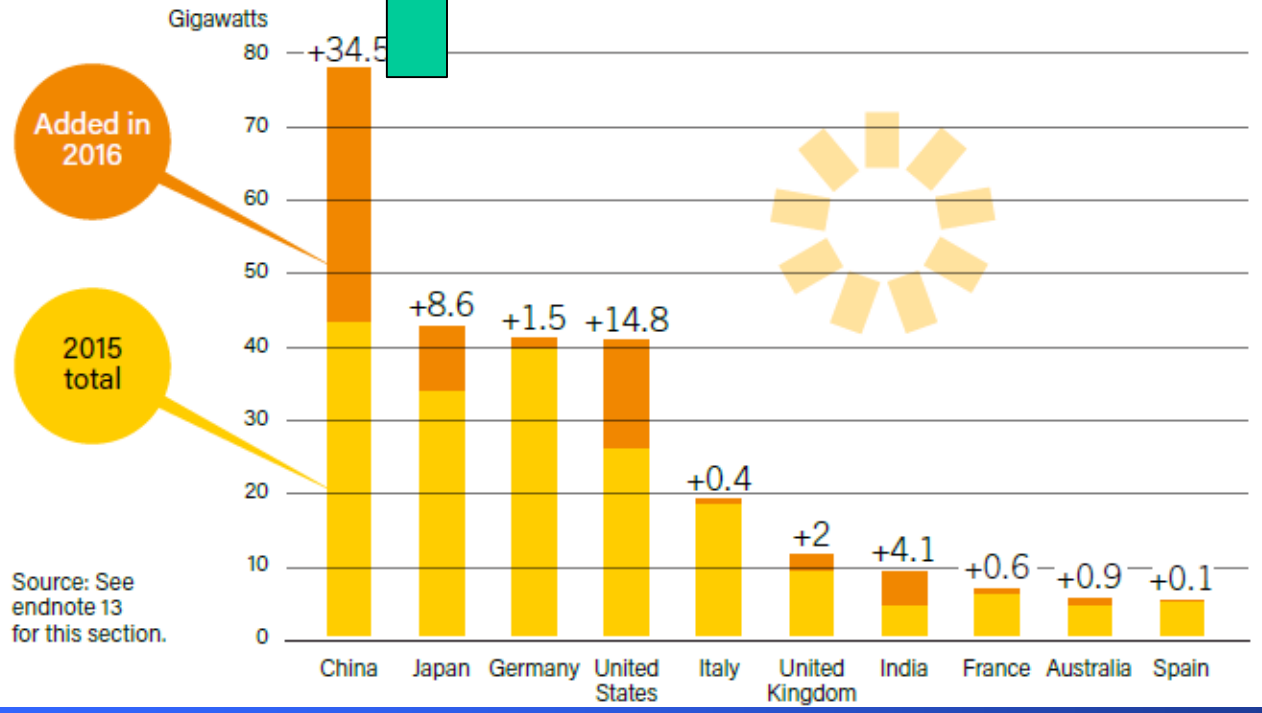
- 7.3.1 Energy intensity measured in terms of primary energy and gross domestic product (GDP)
- 268toe/million US$, 23% lower than that in 2010

China: What we are doing and did

- Retrofit for electricity grid in rural area, finished
- Made electricity price lower for rural area, finished
- Cleaner energy use including electricity and natural gas in rural area, due to air pollution control, under going
- poverty alleviation by solar PV development in rural area, launched in 2015, under going

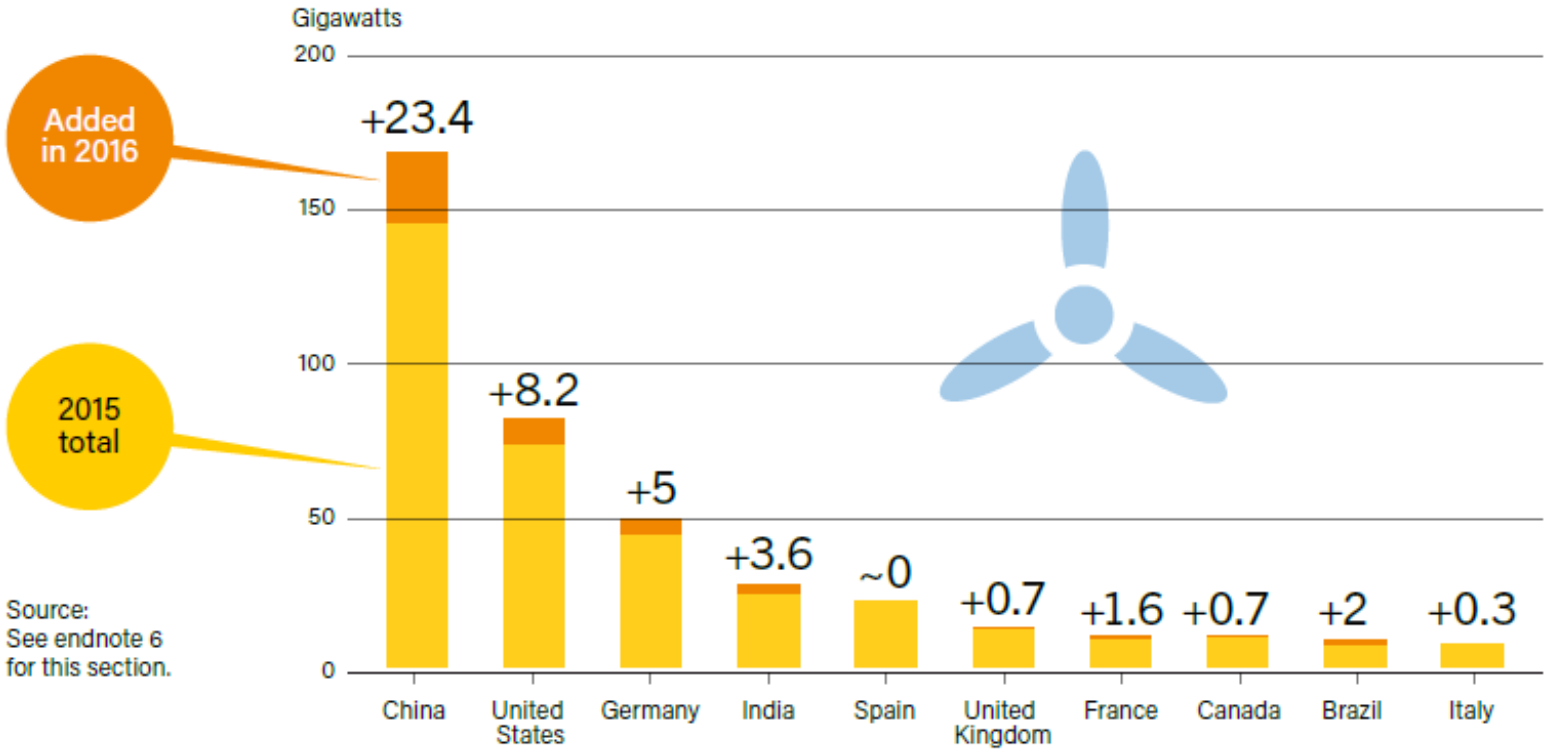
+24.5GW from Jan. to June 2017

Figure 17. Solar PV Capacity [illegible] Additions, Top 10 Countries, 2016



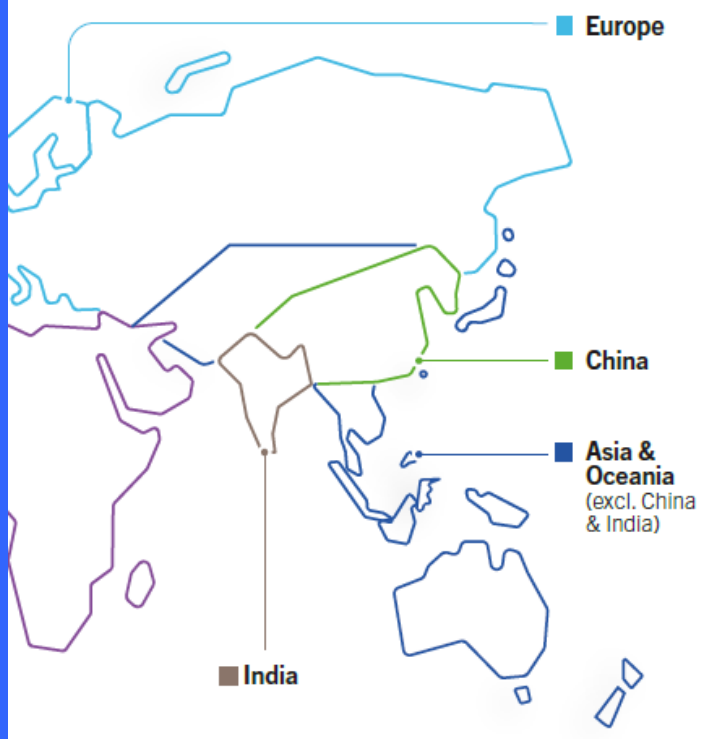
CHINA ACCOUNTED FOR **46%** OF NEW CAPACITY.

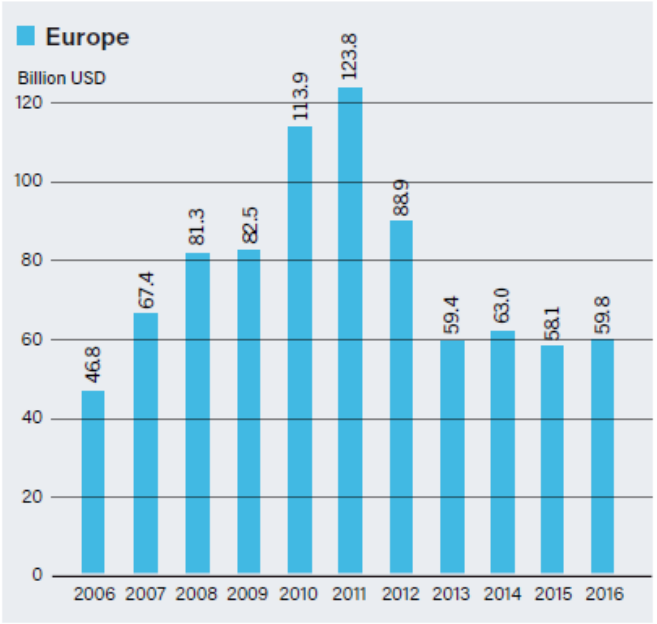
Figure 27. Wind Power Capacity and Additions, Top 10 Countries, 2016

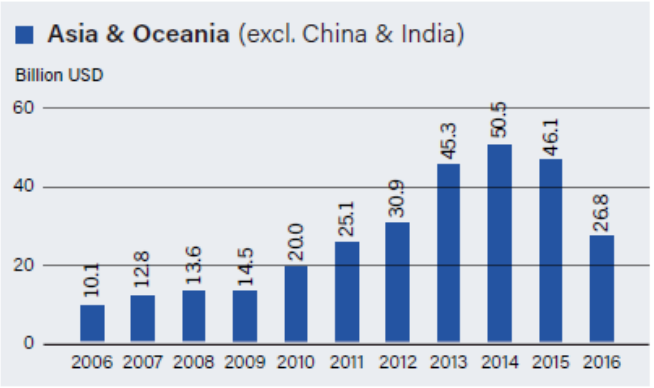


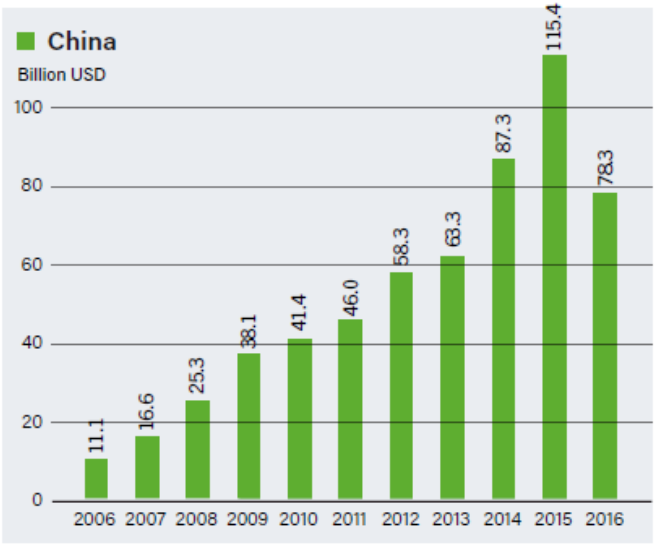
Source:
See endnote 6
for this section.

Note: Germany's additions are net of decommissioning and repowering. "~0" denotes capacity additions of less than 50 MW.

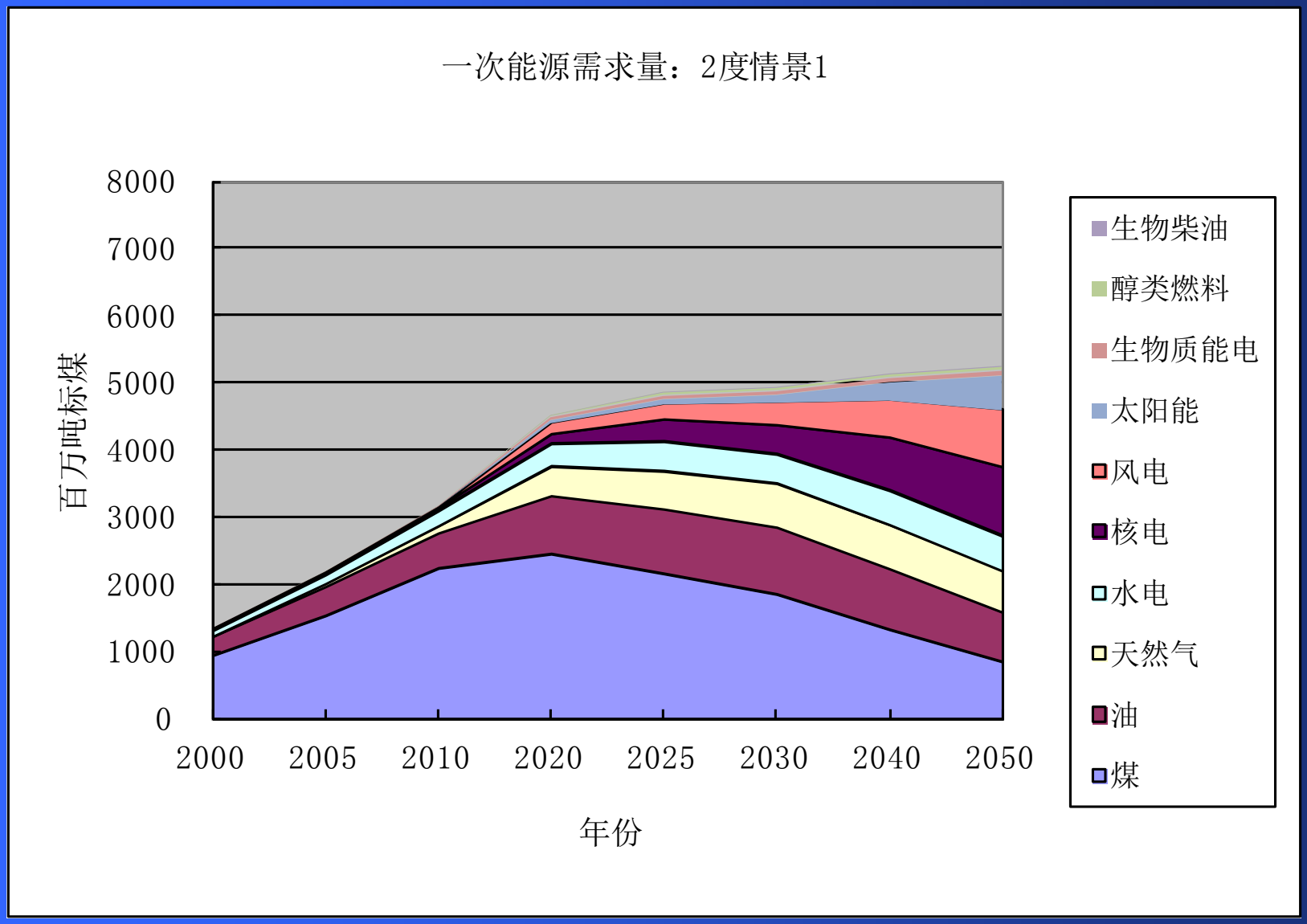

Europe
China
Asia & Oceania (excl. China & India)
India

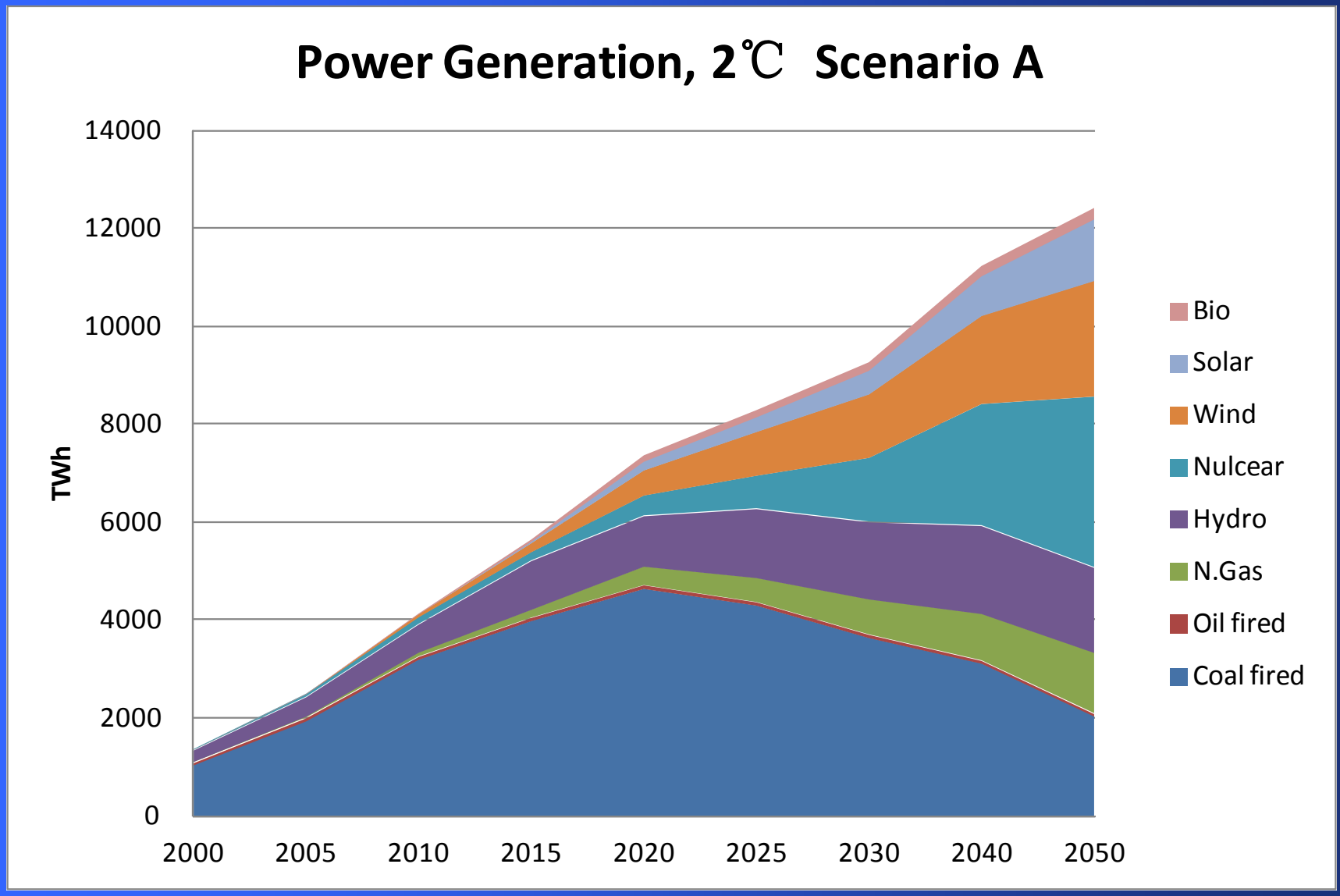

Europe
Billion USD
120
100
80
60
40
20
0
46.8
67.4
81.3
82.5
113.9
123.8
88.9
59.4
63.0
58.1
59.8
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

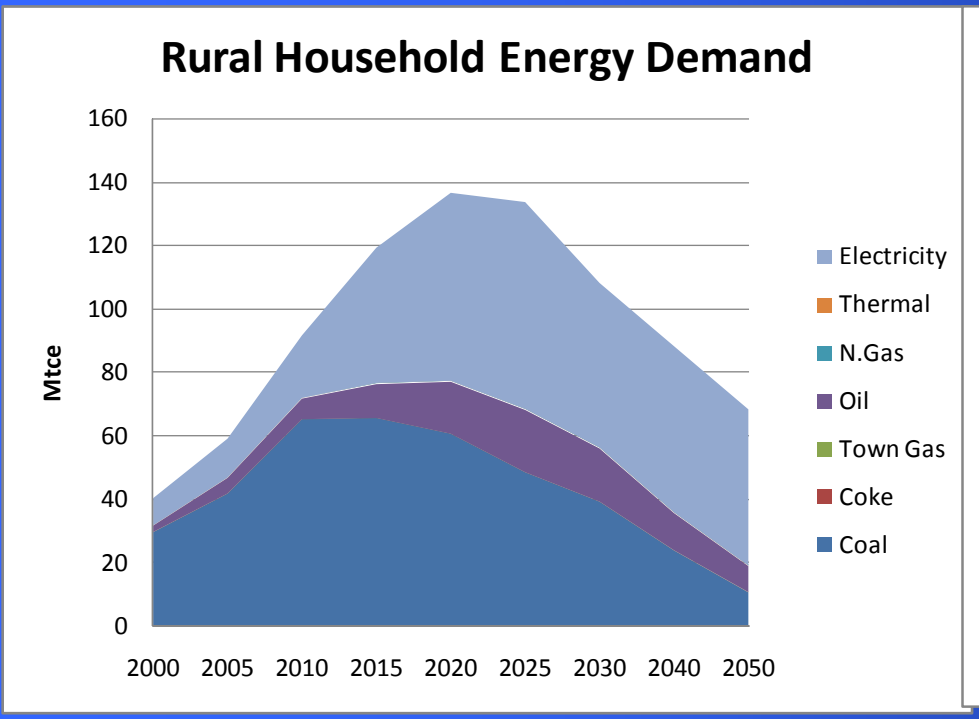

Asia & Oceania (excl. China & India)
Billion USD
60
40
20
0
10.1
12.8
13.6
14.5
20.0
25.1
30.9
45.3
50.5
46.1
26.8
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

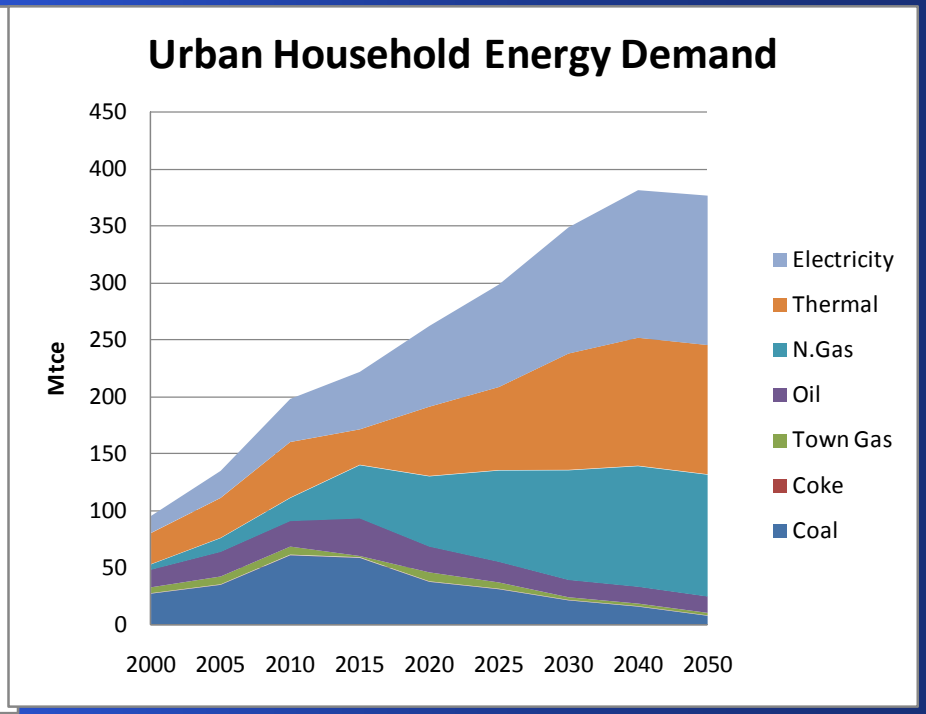

China
Billion USD
100
80
60
40
20
0
11.1
16.6
25.3
38.1
41.4
46.0
58.3
63.3
87.3
115.4
78.3
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

	1	2	3	4	5
POWER					
Renewable power (incl. hydro)	**China**	United States	Brazil	Germany	Canada
Renewable power (not incl. hydro)	**China**	United States	Germany	Japan	India
Renewable power capacity *per capita* (among top 20, not including hydro[3])	**Denmark**	Germany	Sweden	Spain	Portugal
Biopower generation	**United States**	China	Germany	Brazil	Japan
Geothermal power capacity	**United States**	Philippines	Indonesia	Mexico	New Zealand
Hydropower capacity[4]	**China**	Brazil	United States	Canada	Russian Federat.
Hydropower generation[4]	**China**	Brazil	Canada	United States	Russian Federat.
CSP	**Spain**	United States	India	Morocco	South Africa
Solar PV capacity	**China**	Germany	Japan	United States	Italy
Solar PV capacity *per capita*	**Germany**	Italy	Belgium	Japan	Greece
Wind power capacity	**China**	United States	Germany	India	Spain
Wind power capacity *per capita*	**Denmark**	Sweden	Germany	Ireland	Spain
HEAT					
Solar water heating collector capacity[5]	**China**	United States	Germany	Turkey	Brazil
Solar water heating collector capacity *per capita*[5]	**Austria**	Cyprus	Israel	Barbados	Greece
Geothermal heat capacity[6]	**China**	Turkey	Japan	Iceland	India
Geothermal heat capacity *per capita*[6]	**Iceland**	New Zealand	Hungary	Turkey	Japan


一次能源需求量：2度情景1
百万吨标煤
8000
7000
6000
5000
4000
3000
2000
1000
0
2000
2005
2010
2020
2025
2030
2040
2050
年份
生物柴油
醇类燃料
生物质能电
太阳能
风电
核电
水电
天然气
油
煤


Power Generation, 2℃ Scenario A
TWh
14000
12000
10000
8000
6000
4000
2000
0
2000
2005
2010
2015
2020
2025
2030
2040
2050
Bio
Solar
Wind
Nulcear
Hydro
N.Gas
Oil fired
Coal fired


Rural Household Energy Demand
Mtce
160
140
120
100
80
60
40
20
0
2000
2005
2010
2015
2020
2025
2030
2040
2050
Electricity
Thermal
N.Gas
Oil
Town Gas
Coke
Coal


Urban Household Energy Demand
Mtce
450
400
350
300
250
200
150
100
50
0
2000
2005
2010
2015
2020
2025
2030
2040
2050
Electricity
Thermal
N.Gas
Oil
Town Gas
Coke
Coal