

# The Developing Trend of Renewable Energy in China

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# The Global Status of Renewable Energy

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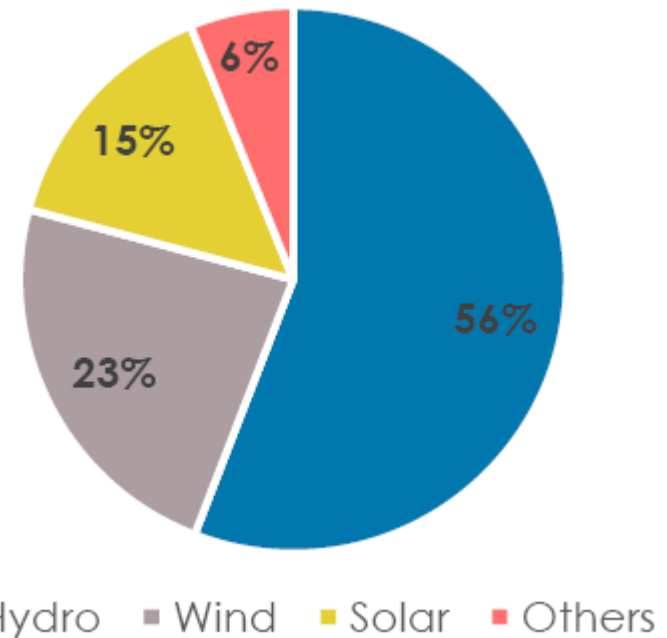
## Total Renewable Energy from 2009 to 2016

Label	Unit	2009	2010	2011	2012	2013	2014	2015	2016
Total Global Capacity	MV	1,133,347	1,223,089	1,326,016	1,444,143	1,563,539	1,690,177	1,845,180	2,006,202
Hydropower	MV	991,919	1,024,581	1,056,283	1,089,474	1,132,761	1,170,107	1,207,853	1,242,961
Marine energy	MV	269	271	525	528	527	527	533	536
Wind Energy	MV	150,142	182,684	222,052	271,714	303,675	350,225	415,304	465,505
Solar PV	MV	22,578	38,903	69,746	99,347	135,426	172,289	220,132	290,791
Concentrated Solar Power	MV	782	1,260	1,727	2,591	3,858	4,418	4,659	4,873
Bioenergy	MV	63,701	69,413	74,740	81,412	88,794	94,516	101,108	109,731
Geothermal Energy	MV	9,903	10,125	10,015	10,482	10,787	11,457	11,848	12,628
Off-grid capacity	MV	565.02	613.78	765.01	883.67	1,006.44	1,204.39	1,587.18	2,786.64

# •The Global Status of Renewable Energy

- By the end of 2016, the global installed capacity of renewable energy power generation reached 2,006G, in which hydropower reached 1122GW, wind power and solar energy installed capacity were 467GW and 296GW. In addition, there are 110GW biomass energy, 13GW geothermal energy, and 500MW ocean energy (tides, waves, currents).

The Global Installed Capacity of Renewable Energy

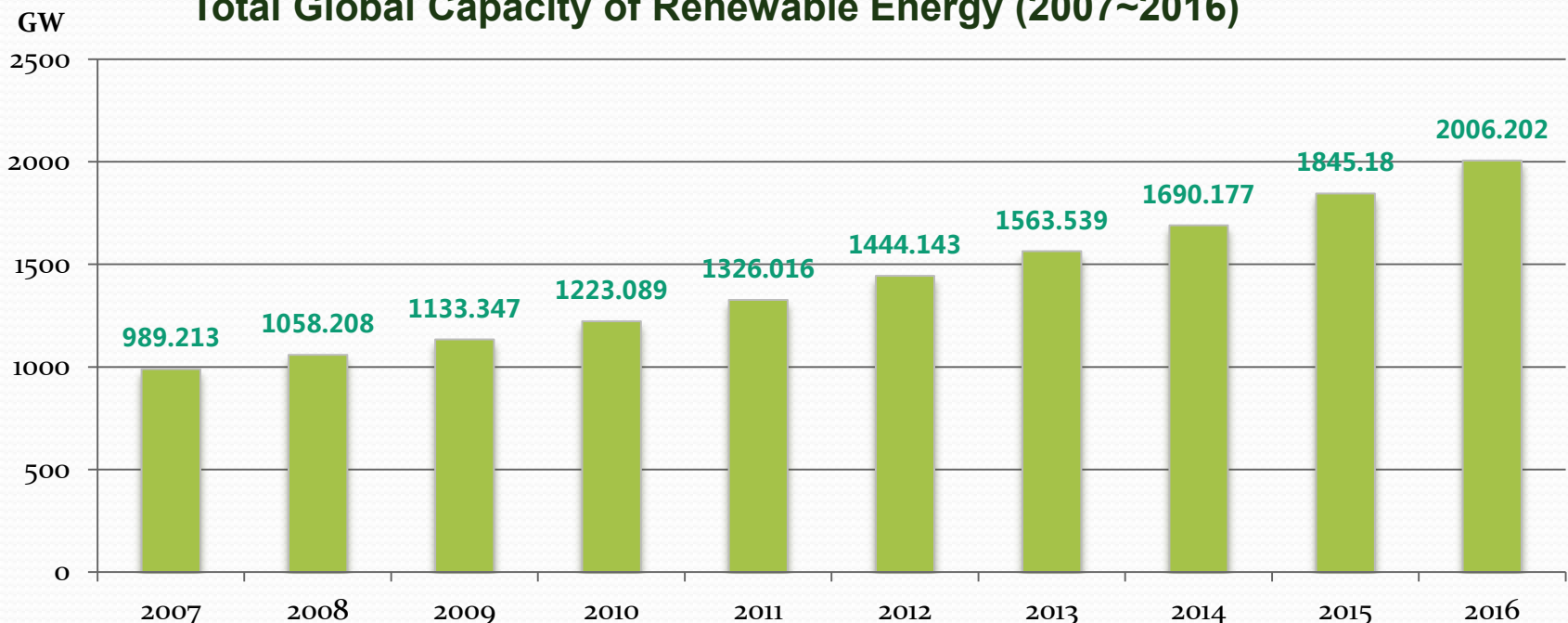


Source : IRENA

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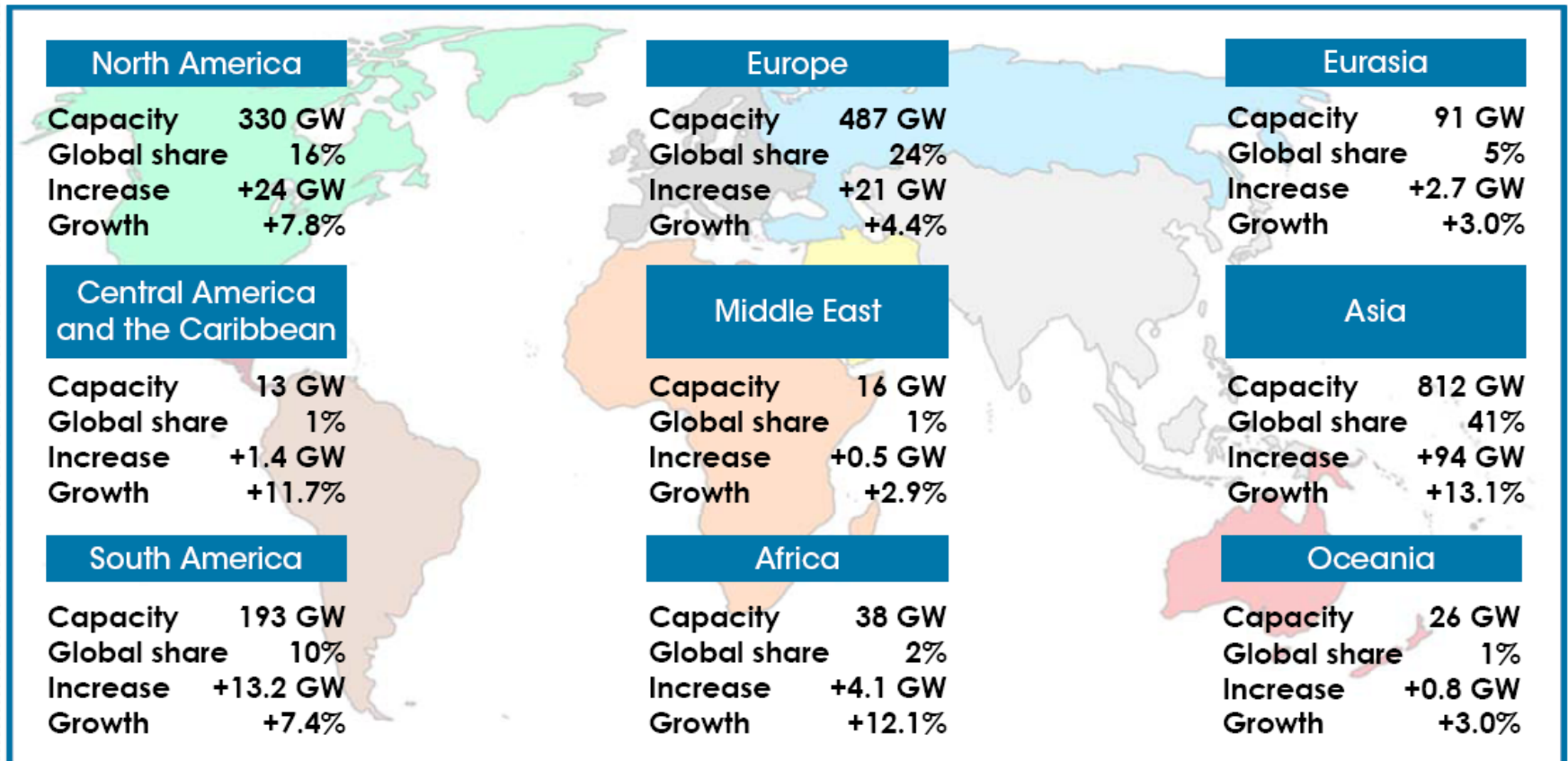
- In order to reduce greenhouse gas emissions and consumption of fossil fuels, countries have already acted following the Paris agreement came into force.
- The investment in renewable energy has been strengthened and the market has been expanding.

**Total Global Capacity of Renewable Energy (2007~2016)**



# •The Global Status of Renewable Energy

## The Regional Distribution of Global Renewable Energy



Source : IRENA

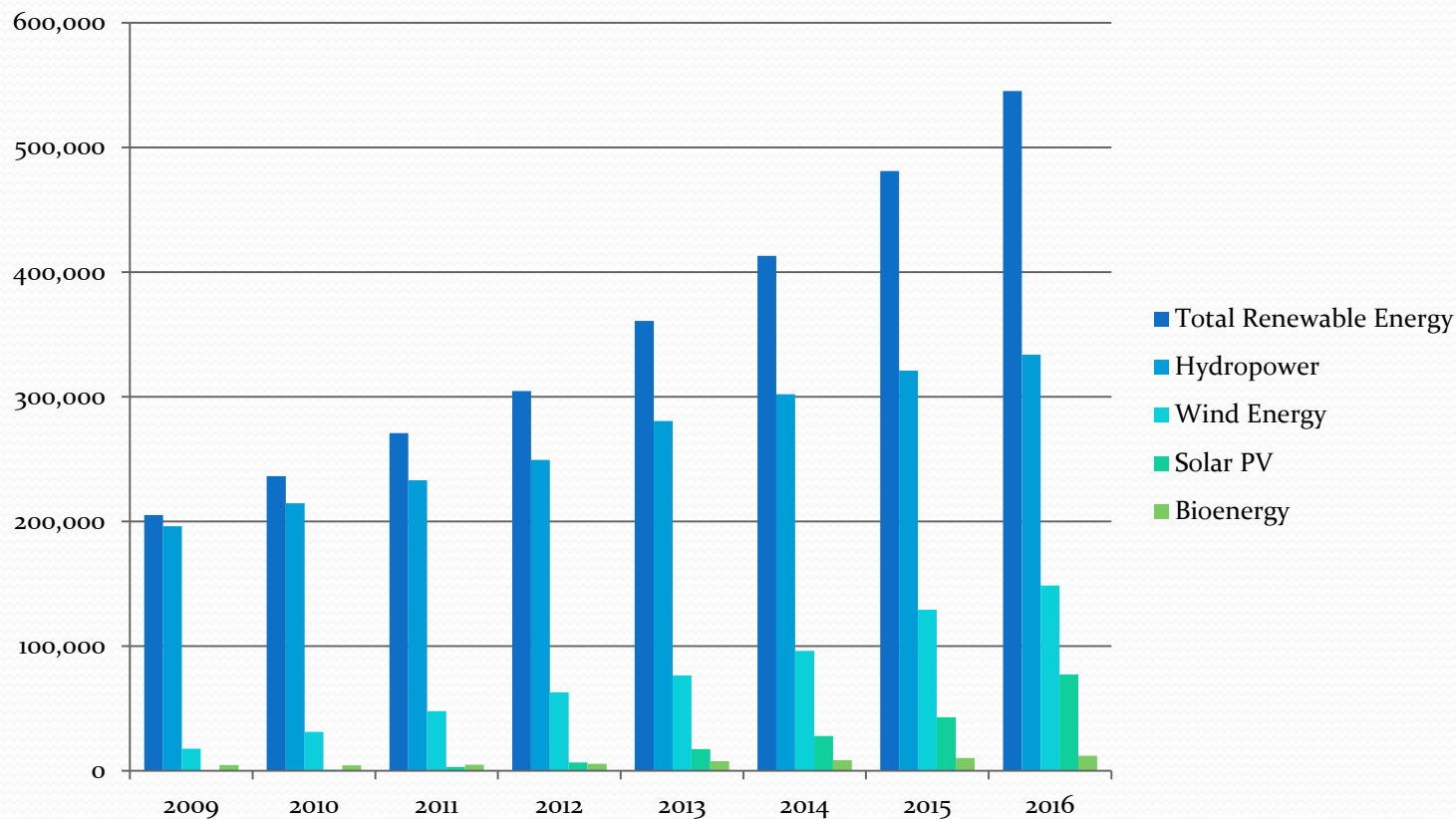


# The Status of Renewable Energy in China

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## Total Capacity of Main Renewable Energy from 2009 to 2016

Unit: MW

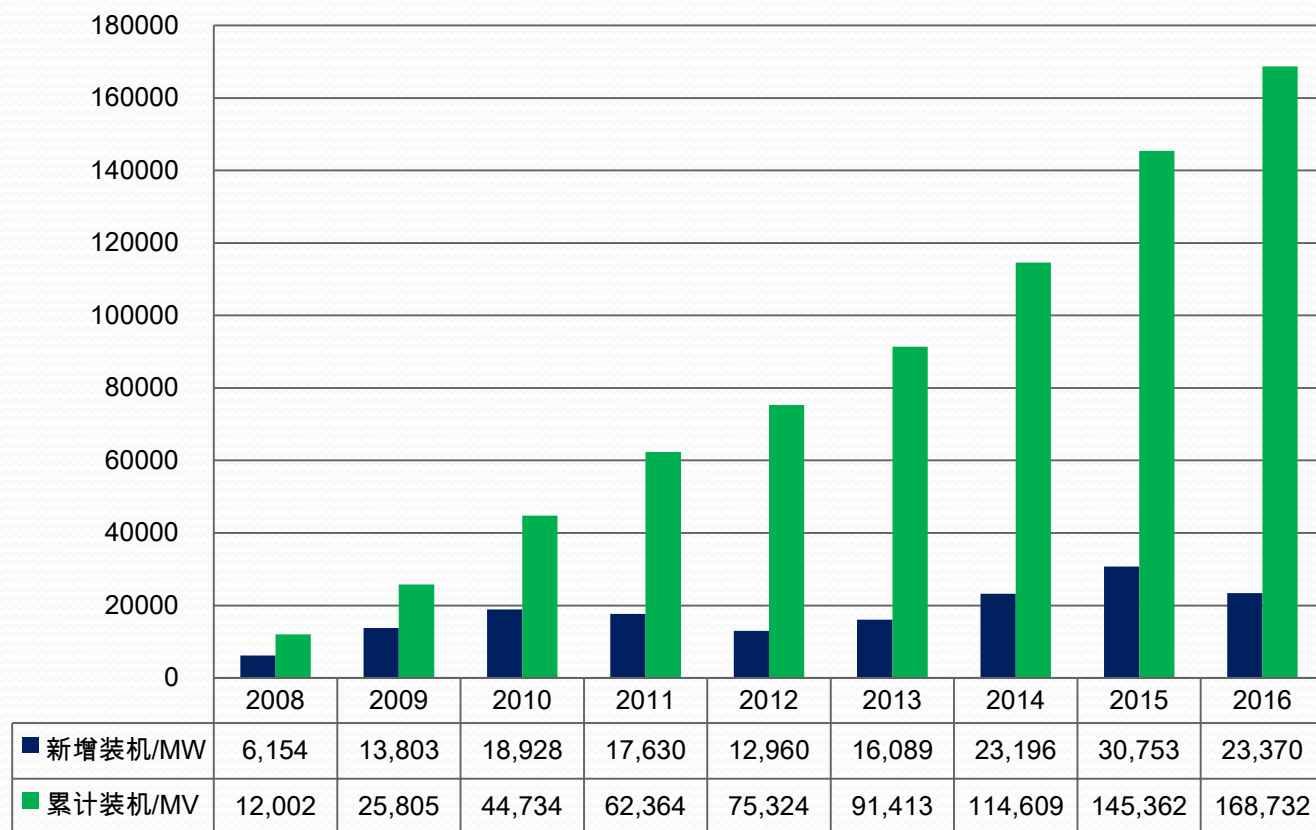




# China Wind Market

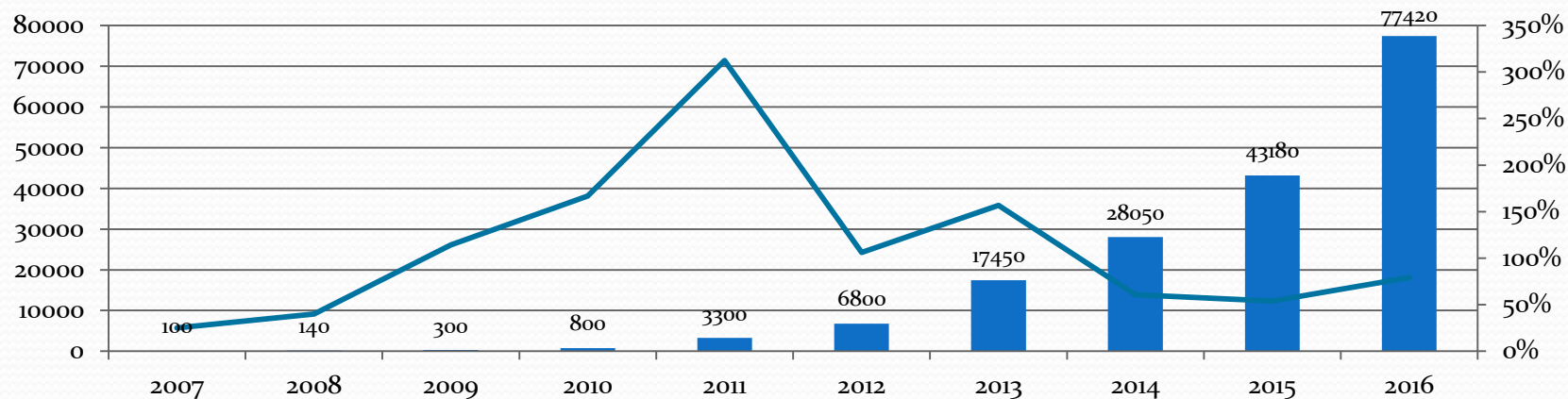
In 2016 China's wind power installed capacity of 23.37 GW, the cumulative installed capacity reached 169 GW;

In 2016, China's wind cumulative installed capacity accounted for 34.7% of the global market share.

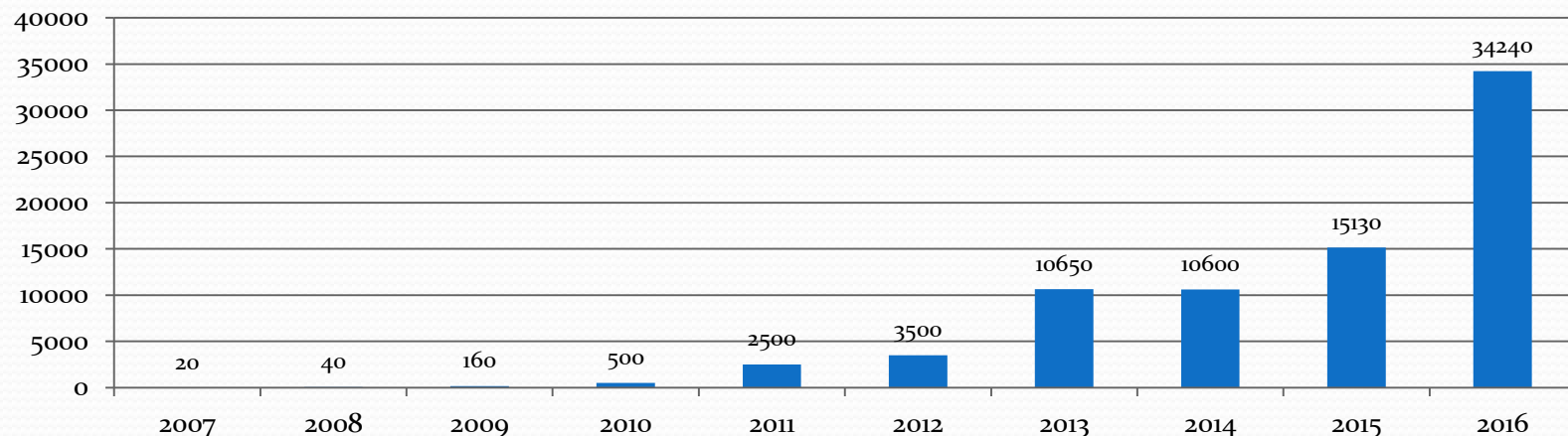


# China Solar Market

- In 2016, China's new installed capacity of 34.54 GW (including DPV 4.24GW), the cumulative installed capacity of 77.42 GW.



2007-2016年中国光伏发电累计装机容量及增长趋势



2007-2016年中国光伏发电新增装机容量

# •The Trend of Renewable Energy in China

## **The Ideas and Goals on Developing Renewable Energy**

- During the 13th Five-Year Plan, we will actively develop hydropower, comprehensively coordinate and promote the development of wind power, promote the diversified utilization of solar energy, develop biomass energy according to local conditions, accelerate the development and utilization of geothermal energy, and promote the demonstration application of marine energy.

## **The Safeguarding Measure of Renewable Energy**

- To establish the target guidance system.
- To monitor the early warning mechanism.
- To set up subsidy optimization mechanism.
- To guide the decline in Feed-in Tariff, but also to solve the problem of insufficient supply of renewable energy sources.

# 十三五的可再生能源的主要发展目标

## Main development goals of renewable energy of 13<sup>th</sup> Five-year-Plan

2016年底，国家发改委印发了《可再生能源发展“十三五”规划》：

- ❑ 到2020年非化石能源占能源消费总量比例达到15%，2030年达到20%
- ❑ 到2020年，全部可再生能源年利用量7.3亿吨标准煤；全部可再生能源发电装机6.8亿千瓦，发电量1.9万亿千瓦时，占全部发电量的27%
- ❑ 到2020年，风电项目电价与当地燃煤发电同台竞争，光伏项目电价与电网销售电价相当
- ❑ 到2020年底，全国风电并网装机确保达到2.1亿千瓦以上，海上风电开工建设1000万千瓦；太阳能并网装机确保实现1.1亿千瓦以上；太阳能热利用集热面积达到8亿平方米。

# 中国能源革命的三步走战略

## Three - step Strategy of China 's Energy Revolution

结合大气环境质量治理，全面遏制化石能源特别是煤炭消费过快增长的势头

- 加强经济发展转型和技术进步
- 大幅度提高天然气的消费比例，为大比例提高可再生能源比例奠定基础

- 形成完整的低碳产业链，低碳经济发展初具规模

从现在起到2020年，开启能源革命之路

2020-2035年，完成能源清洁化进程

2035-2050年，全面实现能源低碳化，到本世纪末实现零碳化

# Thank You !

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