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# Fighting Climate Change – Industrial Energy Efficiency Upgrading

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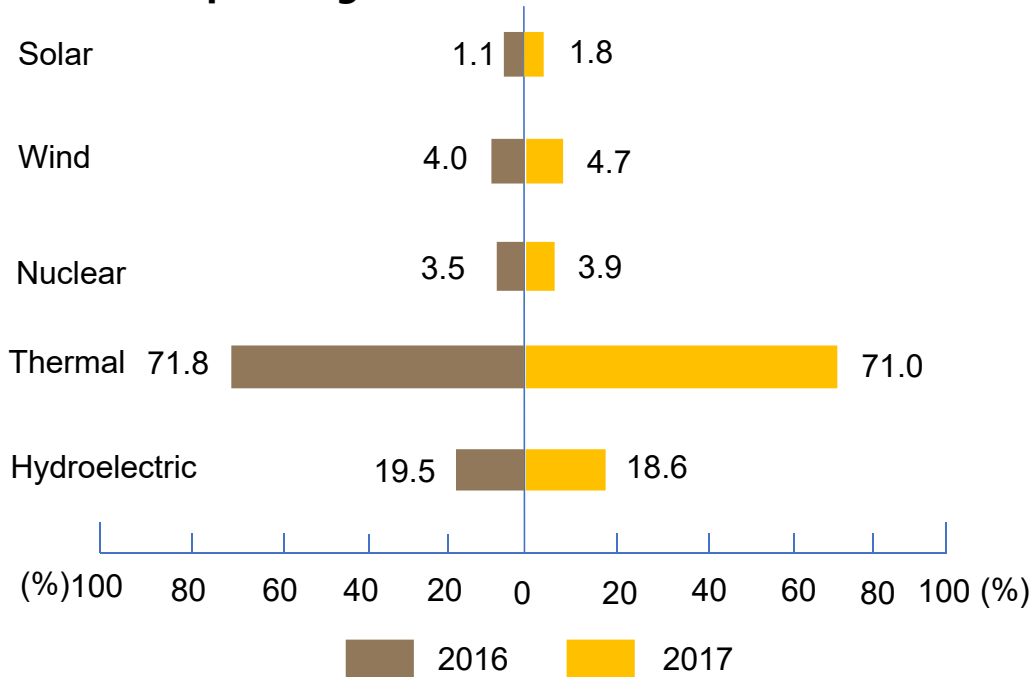
# Fighting climate change: low-hanging fruit remains

- Since the Eleventh Five-Year Plan, China's industry has developed rapidly. In 2017, the added value of industry accounted for 33.9% of GDP.
- Industry is an important part of the national economy and the main driving force for economic growth. Industry is also the main area of energy consumption and greenhouse gas emissions in China.
- In 2015, industrial energy consumption reached 2.92 billion tons of standard coal, accounting for 68% of the total energy consumption of the whole society
- After years of focus on global warming and all the easy measures for reducing greenhouse gas emissions had been taken, some surprisingly low-hanging fruit remains.
- One of the most prominent problems is the uneven level of industrial technology and equipment, the overall level of energy efficiency of electric equipment is rather low.

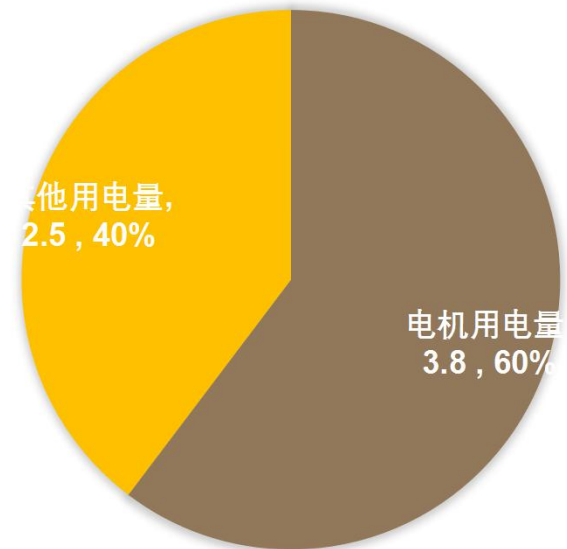
# Energy Efficiency is the key to climate change

- Electricity production generates a large share of greenhouse gas emissions. About 71 percent of our nation's electricity comes from burning fossil fuels, mostly coal.
- Electric motor and motor system is the largest single technology responsible for 60% of the total electricity consumption and 80% of the total industrial electricity consumption in China. The motor industry has great potential for energy saving.

**The proportion of different types power generation in 2017 of China**



**Total national electricity consumption in 2017 (unit: trillion kWh)**



# Energy efficiency improvement is crucial to a sustainable energy future

- More and more countries have imposed MEPS – Minimum Energy Performance Standards , to require low-efficiency motors to be phased out.
- The payback time of high efficiency motors is generally 1~2 years, with considerable economic and social benefits.
- If the current installed low-efficiency motors are replaced by high efficiency motors, it will save 270 billion kWh electricity per year and reduce carbon dioxide emissions by 270 million tons, which is equivalent to the annual power generation of about 2.7 Three Gorges projects.
- However, taking account the compliance issue, reduction potential mentioned above may take long time to achieve.



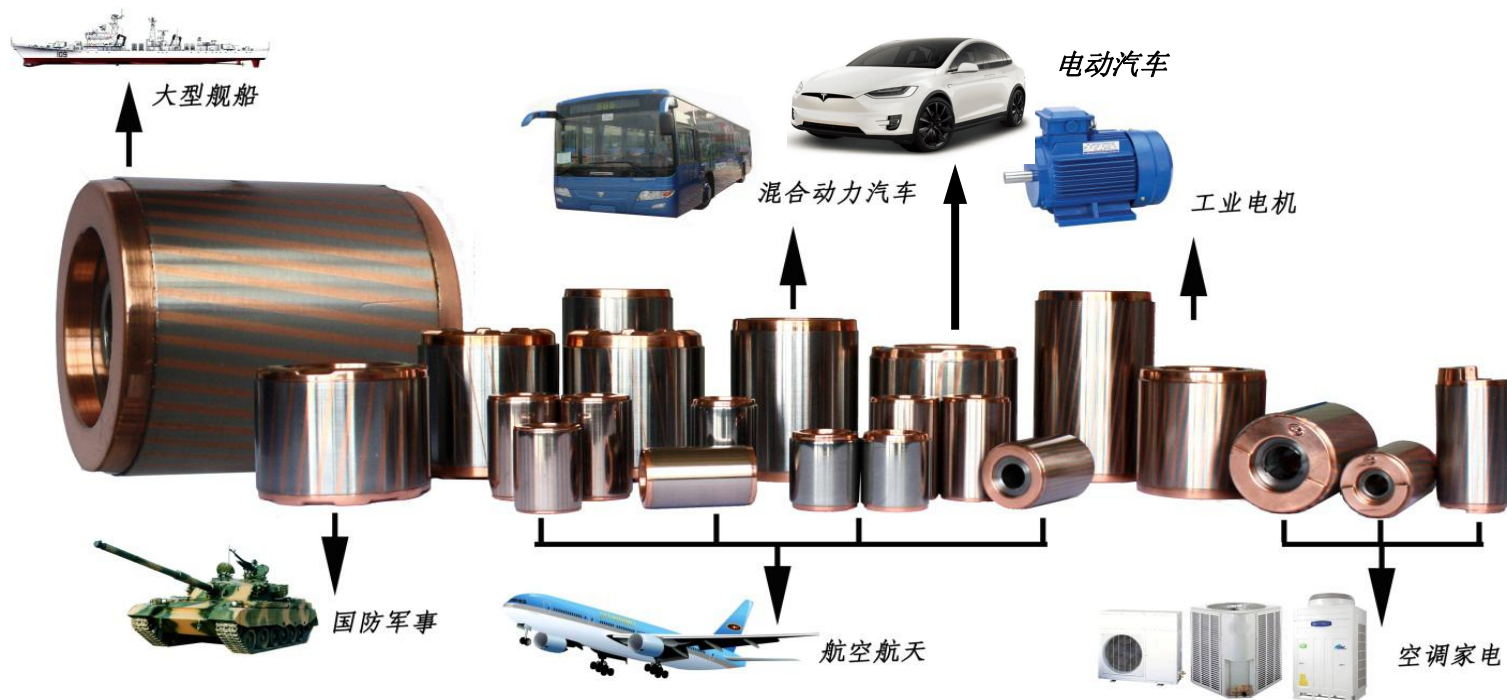
## 2017 China Motor Capacity and Efficiency

GB 18613-2012	IEC 60034 - 30 - 1	Efficiency	2017 Capacity ( million KW )	Ownership Ratio
Grade 1	IE4	93.1%	340	20%
Grade II	IE3	91.5%		
Grade III	IE2	90.1%		
Below Grade III	IE1	87.0%	1405	80%

# Energy Efficiency is the most cost-effective way to fight climate change

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- Of all the actions that can and are being taken to limit carbon emissions and mitigate the effects of climate change, improving energy efficiency is the most promising solution.
- Most investments in energy-efficient technology are paid back within a year or two through lower energy costs, they can significantly boost competitiveness and through the replacement of old equipment generate additional economic activity, reduce overall energy consumption, therefore reduce greenhouse gas emissions.







“Energy efficiency is one of the fastest and most cost-effective ways to save money, cut greenhouse gas pollution and help businesses strengthen their bottom lines”

Ernest Moniz  
United States Secretary of  
Energy