

The low carbon transition in China

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Social and Economic transition

- Low carbon transition is not only energy issue, but social and economic system transition
- Create new pattern of production and consumption: green and low carbon
- Five new vision of development of President Xi: Innovative, Coordinated, Green, Open, and shared by everyone
- New Era of development: from high speed expansion into high quality upgrades
- low carbon energy transition

Green and low carbon transition

- Build the biological civilization
- Green development as very high priority for social and economic development
- Environment protection become Red Line for economic activity
- Air pollution control become one of the three missions for 2020
- High consistency of Green and Low Carbon transition in China
- More specific and higher urgency of Green transition in current period
- Significant effectiveness on carbon mitigation

Climate change is one of the biggest challenges of human

- Taking the scientific conclusion of IPCC report
- To combat the global warming is the most important task to build biological civilization
- China will 100% fulfill the targets of NDC to Paris Agreement
- Current progress better than planned
- Low carbon technology development speed up
- Low carbon energy develop fast

Energy transition: Energy revolution in China

- Energy revolution claimed by President Xi in 2014
- Revolution of energy consumption, supply, technology, and (institution) system
- Long term direction for energy development strategy of China
- Energy consumption: only satisfy the reasonable demand, set up the total consumption ceilings, priority the energy conservation, energy saving consumption pattern
- Energy supply: diversify the supply sources to decrease the coal, focus on non-coal energy development, increase the share of gas and non-fossil energy

- Energy technology: follow up closely the new trends of world energy technology revolution, Green and Low carbon development is the main direction, energy technology will be the new driving force of industrial innovation and upgrade
- Energy system (institution): advance reform, effective competitive market, energy pricing mainly by market, reform the governmental supervision system.
- Enhance the international cooperation of energy development

Progress of green and low carbon transition

- Pilot program of low carbon development provinces and cities
- 36 provinces and cities as transition pilots, with target of earlier peaking their carbon emission
- Low carbon transition in all aspects of social and economic development
- Influence the urbanization, land use planning, transportation system, building, infrastructure, industrial structure, and energy supply and consumption
- Energy efficiency improved significantly, for industries, building, transportation, residential use
- Carbon intensity decrease targets will be fulfilled earlier than committed

Low carbon energy transition

- Primary energy consumption ceiling set up for 2020, quota distributed annually to each of the provinces
- Coal consumption decrease targets for many provinces and cities
- Coal consumption very likely already peaked, and will decrease continuously, although some fluctuation
- Carbon emission peak earlier than 2030 is possible, suggested before 2025 by studies
- Non-fossil energy develop faster than planned

Oil consumption to be peaked

- Electric car development and utilization encouraged by comprehensive policy measures
- Technology study and development promoted by policy, subsidy, fund, and tax
- Electric charge infrastructure develop to support utilization
- Total electric car over 2 million, rank the first in the world
- Oil consumption peak before 2030
- Natural gas consumption increase very fast, mainly replace the coal

Non-fossil energy growth

- Nuclear power development keep going
- Although Fukushima impact slow down the speed
- 37 power reactors constructed and commissioned, with 35.8 Gw
- 19 new power reactors under construction
- Ambitious long term target: from 150 Gw to more than 400 Gw
- New projects will build generation 3 reactors, including EPR, AP1000, HUALONG 1, and future CAP1400, etc.
- New technology under development and demonstration: High temperature gas cooling, fast reactor, and others

Renewables grow faster than planned

- Hydro power generation capacity 341 Gw, total capacity will over 450 Gw
- Wind power already 163 Gw, increased 10.5% last year
- Solar power 130 Gw, increased 53 Gw last year
- Cost of wind power and PV decrease significantly, manufacture capacity can support development with large scale
- Technology innovated, and competition furious