



The Practices of CNPC In Facing Climate Change Challenges

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Foreword

Today, climate change remains one of the world's most significant challenges. As an global operating energy enterprise, CNPC supported the goal of limiting global warming to less than 2 degrees Celsius by the end of this century. We are identifying the risks and taking actions and measures to addressing climate change in our own way.



Outline

1. Risks and Challenges
2. Measures and Actions
3. Conclusions

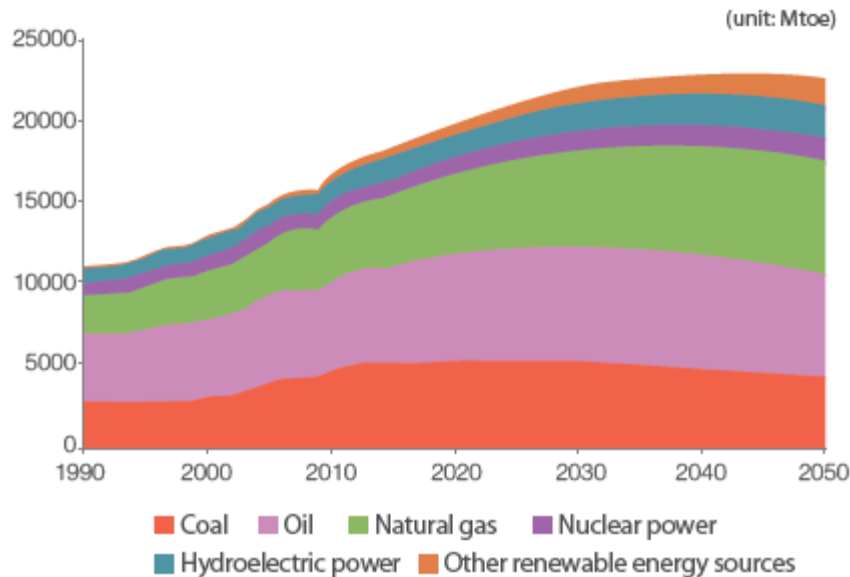
Risks and Challenges

As a oil and gas company, in face of impacts of climate change, there are some risks and challenges below.

1. Growth of Energy Consumption

- The world certainly requires more energy
- Energy consumption of the company

Forecast of global primary energy demand by 2050 *



*Data source: 2016 Energy Statistic Data of CNPC Economics & Technology Research Institute

Risks and Challenges

2. Water Scarcity

(1) Basic water conditions in China:

- Large population and inadequate water

1/4: water resource of per capita

- Unbalanced distribution

20%: Northern areas

80%: Southern areas

(2) Water consumption of the company

3. Impacts of Extreme Weather

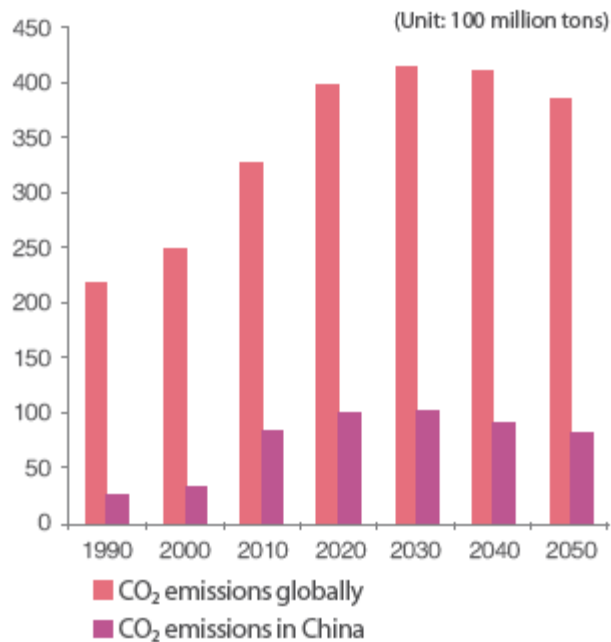
- Flood in summer: Affecting facilities and normal operation
- Gas supply in winter: In late November 2015, North China suffered rare cold weather, gas supply from CNPC in November 2015 increased by 13.9% year on year.

Risks and Challenges

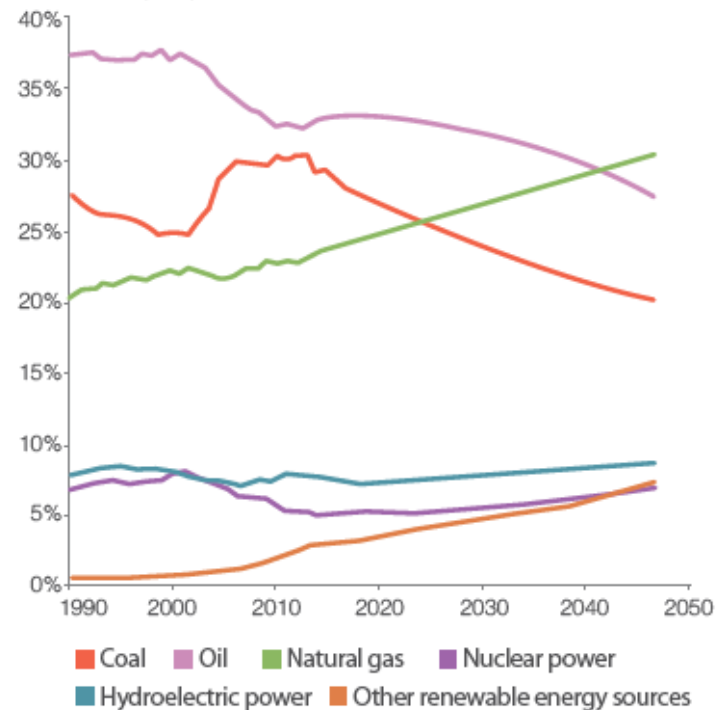
4. Changing of Energy Structure

- Fossil fuels remain the major source powering global economic growth, whereas non-fossil fuels are expected to grow at a rapid speed.

Forecast of global and China's energy-related CO₂ emissions by 2050 *



Forecast of global primary energy demand by category by 2050 *



*Data source: 2016 Energy Statistic Data of CNPC Economics & Technology Research Institute

Outline

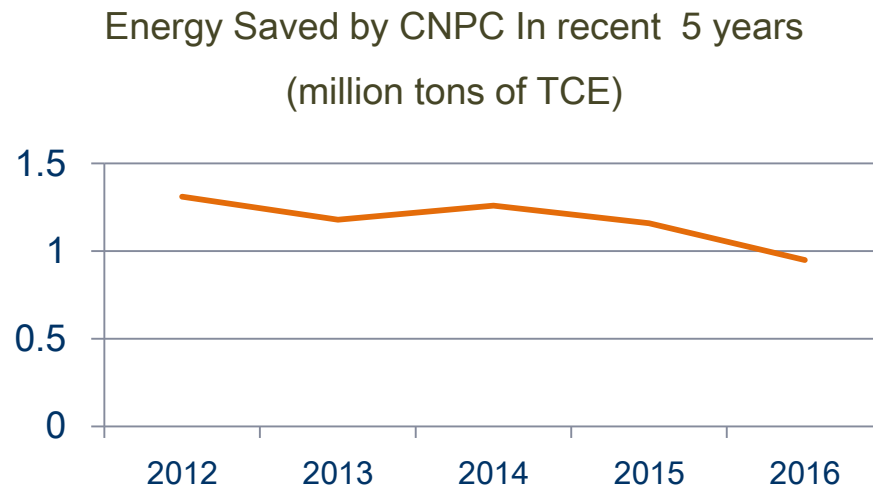
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Measures and Actions

CNPC has incorporated addressing climate change into the company's development program and been taking initiative steps.

1. Increasing Energy Efficiency

- Striving to reduce the consumption of fossil fuels and increase energy efficiency by reducing energy intensity
- Reinforcing energy use management in the production process, and conducting monitoring and evaluation of energy devices and equipment.



Measures and Actions

2. Water Resources Management in Full Life Industry Cycle

We improved water management by using wastewater treatment and reclaimed water reuse technologies to reduce freshwater consumption.



100% of oil extraction wastewater in our oil and gas fields are treated

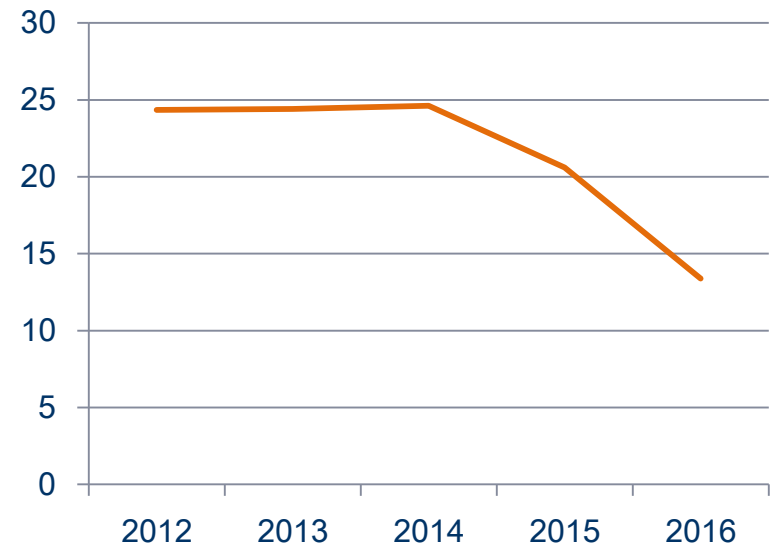


Managing the impact on water resources by constructions; Water impact assessments



Steam condensate water recovery, wastewater treatment and reuse

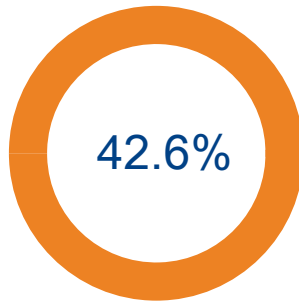
Water Conserved by CNPC In recent 5 years (million cubic meters)



Measures and Actions

3. Optimizing the Business Portfolio

One of the biggest impacts of Climate change for oil companies is to drive them optimize the business structure. As the energy consumption mix is getting more diversified, CNPC make consistent efforts to optimize asset portfolio and products supply structure. In particular, we intensify natural gas as a strategic and growth-oriented project.

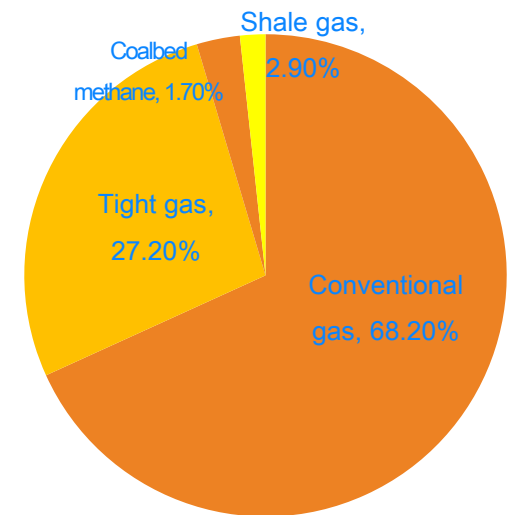


Gas mix in CNPC's domestic production of oil and gas equivalent (2016). 6 percent growth comparing to 2012.



Gas supply volume in 2016

CNPC's domestic gas production



Measures and Actions

4. Carbon Emission Reduction

It has become a public consensus to pursue a green and low-carbon consumption mode and lifestyle. As a member of society, CNPC has taking actions to reduce the carbon emission.

- Four Working Mechanism: Greenhouse gas emissions accounting, Quota management, Carbon asset management and Emission trading.
- Full-chain CCUS base in Jilin Oilfield: covering CO₂ separation, capture and oil displacement with 940,000 tons of carbon dioxide sealed up underground.
- Co-founder of the Tianjin Climate Exchange (TCE), the first comprehensive emissions trading institution in China.
- The China Green Carbon Foundation: co-founder with the State Forestry Administration, total of 22.07 million hectares of carbon sink forests.

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Addressing climate change is also a process of choosing and managing climate risk. As a oil and gas company, we need to continuously enhance the capacity of adapting climate change.

1. Developing and Providing Clean, Affordable Energy

- Fundamentally, oil and gas industry shoulders important responsibility in developing and providing clean and affordable energy Under the background of climate change.

2. Promoting International Cooperation

- Cooperation brings efficiency and progress. We can enhance climate resilience effectively through cooperation. In 2015, CNPC joined the Oil and Gas Climate Initiative (OGCI), are playing a important role in emission reduction in the oil and gas industry by taking the initiative in carbon reduction and sequestration.

THANKS



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