



What it needs to assure sustainability

in oil & gas sector with special reference to China

- 1. Energy Sustainable Development in CHINA**
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Presentation: CNOOC of CHINA



Energy Sustainable Development

Energy development is an important link in building a resource-conserving and environment-friendly society, which is a powerful guarantee for realizing sustainable development.

It should be better resolve the conflict between continuity of human development and natural resource carrying capacity as well as ecological environmental capacity.

In China's Planning, (green low carbon development)

- in 2020, carbon intensity will decrease 18%
- unit GDP's energy consumption low15%.
- Proportion of non-fossil energy to primary energy consumption will reach 15%.
- forest coverage 23.04% and forest volume 11.5 billion cubic meters.
- Output of the main resources will increase 15%.

Strengthen Exploration & Development to Develop of Marginal Fields

Due to heterogeneity and the low (pressure, permeability and reserve abundance).

Defined as marginal fields, could not economically developed with conventional techniques.

With Fracturing, waterflooding and horizontal wells become the key techniques of successful development of the low properties fields located in Ordos basin.

At low oil pricing, the key point is “reduce cost and increase efficiency”.

The technology has not only promoted development effect of the fields greatly, but also increased economic benefits for the economically marginal fields.

Shale Gas Revolution

Make shale gas to be an important part of gas supply

According China's “Shale Gas Development Plan (2016-2020)”, strive to achieve annual shale gas production of 30 billion M³ in 2020 and 80 to 100 billion M³ in 2030. Till 2016, cumulative gas production of shale gas field (Puling Field) has reached 10 billion M³.

Policy to promote shale gas development in China are as:

- (1) To enhance exploration and evaluation of shale gas resource.
- (2) To research the key technology of shale gas in exploration and development.
- (3) To make fiscal and taxation policies encouraging shale gas development .
- (4) To strengthen environment assessment and environment public communication.



CNOOC Clean Energy-LNG

CNOOC: a safe, green and harmonious offshore oil industry, make policies to encourage natural gas utilization,

To promote the development of natural gas industry, and promote green energy utilization.

To establish national offshore gas import passage, and establish leadership of LNG industry.

- put on production of **7** LNG receiving stations and **2** under construction,
- reach processing capacity of **33.8** million tons per year.

Past 5-year, offshore gas production and LNG imports steadily increased.

In 2015, sales of gas in China were 31.5 billion M³

Till the end of 2016, CNOOC accumulated LNG imports 100.59 million tons.

(16.52 million tons in 2016 about 63% in China).



Conclusion

1. "to emphasize usage and overlook development"
as low carbon economy development
2. To take using all reserves, it included the difficult and margin field
3. To develop new type resource, it included shale gas and others
4. To make clean energy possible, including LNG and renewable resources

Thanks