

# **Shale Gas and Emissions Reduction**

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# North America Shale Gas and Emissions Reduction

- Recent announcement of Obama government invokes reduction of CO<sub>2</sub> by 26%-28% of the 2005-level in 2025.
- US energy has drastically changed the last decade, became a gas exporter and domestic oil production exceeded imports.
- Gas (from shale) seen as a transition energy source to build more renewable energy capacity; replacement of old coal-firing electricity plants.
- But what about other greenhouse gases (GHG) such as methane and the flaring of gas in tight-oil producing regions (Bakken)?
- And what if oil and gas prices stay at a prolonged low level?

# China Energy Landscape Transformation

- China also has the intention to reduce GHG emissions: peaking of CO<sub>2</sub> by 2030 or earlier with 20% of non-fossil fuel for primary energy but even then energy consumption will be 28% higher than today.
- Energy efficiency (less energy intensive) and aggressive growth of non-fossil energy.
- Gas as a transition energy source to triple by 2030 but will remain relative small compared to use of coal for power generation.
- Obstacles such as natural gas price controls, diversity of suppliers and open access to pipelines will hamper rapid development of gas energy sources.

# Europe Sustainable Energy Development

- Germany's Energie-Wende policy has significantly changed Europe's energy landscape.
- But increasing concerns from industry that high energy prices makes Germany less competitive compared to US and other countries with low prices because of shale gas development.
- How to fill the gap in energy supply when nuclear plants close? (Brown) coal shouldn't be the answer.
- How to reconcile supply security with decreasing domestic production in Europe? Gas from the east or for the south? Shale gas development in North Africa will take a long time. Or LNG imported from US (shale gas)?