Light Tight Oil and Unconventional Gas: ‘Golden Rules’ to Stay On-track

Maria van der Hoeven
Executive Director
International Energy Agency

Houston, August 2012
Deglobalization of gas markets

Source: ICE, EIA, IEA, German Customs, Japanese Customs, McCloskey

Avg. gap in 2011: USD 5.8/MBtu

Avg. gap in 2011: USD 5.0/MBtu

Source: ICE, EIA, IEA, German Customs, Japanese Customs, McCloskey
Global gas resources represent 250 years of current gas production

- Natural gas can enhance security of supply: global resources exceed 250 years of current production
- Thanks to unconventional gas, gas resources are more homogenously spread between regions
Light Tight Oil (LTO) Stops US Output Decline, Cuts Imports

- Companies employing horizontal drilling, hydraulic fracturing to target liquids-rich shales.
- Expect LTO to grow by 1.1 mb/d by 2016
- NGL supply revised up because producers are targeting liquids-rich gas plays and light tight oil plays.

Source: IEA Oil Market Report
Rolling back shale gas production would lead to a less secure and less sustainable energy system.

Selected natural gas trade volumes, 2035

<table>
<thead>
<tr>
<th>Region</th>
<th>Golden Rules Case</th>
<th>Additional net trade in Low Unconventional Case</th>
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<tbody>
<tr>
<td>China</td>
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<td>European Union</td>
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<td>United States &amp; Canada</td>
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<td>Russia</td>
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Gas trade in the Low Unconventional Case is up 30%, some trade patterns are reversed, gas prices are higher & the position of the main conventional exporters reinforced.
Hydraulic fracturing can be done safely, but ‘golden rules’ are essential to maintain social acceptance
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