Air pollution issues encourage gas use in China

China’s gas demand by sector, 2013-19

- Gas demand in China will gain 150 bcm over 2013-19: this is 2 times UK’s gas consumption and 2 times China’s gas production growth
Europe: flat and lacking options

Even in a context of anemic demand, Russia remains a large component of Europe’s supplies
Africa will be one of the fastest-growing regions

Africa’s gas demand, 2000-19 (bcm)

- Africa’s thirst for natural gas means that most of the incremental production will be dedicated to the domestic market
The gas-price stalemate

Global gas prices, 2004-14

- The wide gap between US and Asian gas prices prompts Asian buyers to seek spot-indexed gas, invest in new LNG export regions or consider developing an Asian trading hub.
Demand grows at 2.2% per year

Incremental gas demand by region, 2013-19

- OECD Asia Oceania: 6%
- OECD Americas: 10%
- Middle East: 22%
- Latin America: 8%
- Africa: 8%
- Non OECD Asia: 15%
- China: 30%

Demand in the FSU and Europe does not increase

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Supply is growing, but not all is available for export

- OECD Americas and Asia Oceania will represent 40% of additional supply, while FSU production falls significantly behind
Two OECD regions contribute 40% of the additional supply

LNG liquefaction capacity, existing and under construction

- 150 bcm of LNG export capacity is under construction; much of that is coming from Australia
Most of the new LNG will be consumed by Asia

Consequently, global LNG trade will rise from 320 bcm in 2013 to 450 bcm in 2019

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LNG exports are crucial for Canada’s gas production

Canadian LNG liquefaction projects approved by NEB (May 2014)

<table>
<thead>
<tr>
<th>Project</th>
<th>Capacity (bcm/yr)</th>
<th>Major stakeholders</th>
<th>Expected FID</th>
<th>NEB’s approval</th>
<th>Target timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitimat LNG</td>
<td>13.6</td>
<td>Chevron, Apache</td>
<td>2014+</td>
<td>Oct 2011</td>
<td>2018+</td>
</tr>
<tr>
<td>BC LNG</td>
<td>2.4</td>
<td>LNG partners, Haisla First Nations</td>
<td>2014+</td>
<td>Feb 2012</td>
<td>2018+</td>
</tr>
<tr>
<td>LNG Canada</td>
<td>32.6</td>
<td>Shell, PetroChina, Kogas, Mitsubishi</td>
<td>2014+</td>
<td>Feb 2013</td>
<td>2019+</td>
</tr>
<tr>
<td>Pacific NorthWest LNG</td>
<td>16.3+</td>
<td>Petronas, Japan Petroleum Exploration (JAPEX), Petroleum Brunei, IOCL, Sinopec</td>
<td>2014</td>
<td>Dec 2013</td>
<td>2018+</td>
</tr>
<tr>
<td>Prince Rupert LNG</td>
<td>28.6</td>
<td>BG</td>
<td>2015</td>
<td>Dec 2013</td>
<td>2021+</td>
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<tr>
<td>WCC LNG</td>
<td>40.8</td>
<td>Imperial Oil, ExxonMobil</td>
<td>n/a</td>
<td>Dec 2013</td>
<td>2021+</td>
</tr>
<tr>
<td>Woodfibre LNG Export</td>
<td>2.9</td>
<td>Woodfibre</td>
<td>2015+</td>
<td>Dec 2013</td>
<td>2017+</td>
</tr>
<tr>
<td>Triton LNG (FLNG)</td>
<td>3.1</td>
<td>AltaGas, Idemitsu</td>
<td>2014+</td>
<td>Apr 2014</td>
<td>2017+</td>
</tr>
<tr>
<td>Aurora LNG</td>
<td>16.3+</td>
<td>CNOOC, Inpex, JGC</td>
<td>2015+</td>
<td>May 2014</td>
<td>2021+</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>156.6+</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Canada has to look at other export options than pipeline gas to the United States; LNG has therefore become crucial
Conclusions

- China and non-OECD Asia
- Europe
- LNG – Australia and North America
- Enough investment to meet demand in 2020s?
Medium-Term Gas Market Report
International Economic Forum of the Americas, Montreal
June 10, 2014
Maria van der Hoeven,
Executive Director, International Energy Agency

Market Analysis and Forecasts to 2019