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European gas market – Quo vadis?

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Natural gas demand in North West Europe stagnates – demand recovery expected up to mid 2020ies

Source: WoodMackenzie 2015 H1
Definition of “Europe” includes Turkey and LNG as bunker fuel
North West Europe includes: Austria, Belgium, Denmark, Finland, France, Germany, Greenland, Ireland, Luxembourg, Netherlands, Norway, Sweden, Switzerland, UK
Outlook on future demand development varies across the different demand segments

<table>
<thead>
<tr>
<th>Demand Segment</th>
<th>Outlook / Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households and small enterprises</td>
<td>Stagnating or even diminishing if renewables are used for heating (e.g. batteries in households)</td>
</tr>
<tr>
<td>Industry</td>
<td>Stable, gas price sensitive</td>
</tr>
<tr>
<td>Power generation</td>
<td>CO2- and gas price sensitive, High potential</td>
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<tr>
<td>Transport</td>
<td>Positive/High</td>
</tr>
</tbody>
</table>
Despite moderate demand growth European import dependency is expected to increase significantly

**European gas supply & demand**

- Decreasing gas supply from Norway, UK and Netherlands
- European import gap expected to be in a range of 50-75% in 2030 (today 50%)

**Additional gas imports particularly needed in North West Europe**
Contracting degrees from existing sources are declining, requiring a strategic choice.

European gas supply: LTCs vs. flexible volumes

- Share of contracted gas decreases from 2022 with implications on security of supply
- Pipeline gas will need to form the basis for supply to Europe
- LNG is likely to be diverted whenever Asian premium increases

Source: WoodMackenzie
Europe well positioned for additional gas supplies from different supply regions

- Unconventional gas unlikely to play a major role up to 2030
- Limited potential for additional North African gas due to high local demand in the region
- Southern Corridor supply-levels into North West Europe partly depending on SEE/CEE infrastructure
- LNG-supply volumes depend on global price-based competition


- Reserves (in bcm)
- Existing and potential LNG supply routes
- Existing and potential pipeline supply routes

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Russia is needed in EU supply mix – Nord Stream II contributes to enhancing security of supply to Europe

Shareholders of Nord Stream II

- Gazprom: 51%
- Shell: 10%
- E.ON: 10%
- OMV: 10%
- Tennet: 10%
- Gasunie: 9%

Key facts

- Nord Stream II is an extension to the Nord Stream I pipeline system already in place
- After its completion, Nord Stream II will add 55 bcm/a doubling the existing transport capacity
- Second direct pipeline connection between the Russia and Germany increasing security of supply
- Additional capacity will contribute to substituting the declining European indigenous production in future years

Signing ceremony on 04 September 2015

Source: Gazprom, E.ON
Although uncertainties remain, all gas sources will have their place in the market.

Further transport-routes supporting traditional and new supply options

Supply volumes from different regions

→ Strong and trustful relationships between producers and European customers are key to ensure long-term security of supply
Thank you for your attention

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