Energy policies in Eastern European partners – three approaches for strengthening energy security and sustainability

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Key messages

• Belarus, Georgia and Ukraine are reducing the role of Russian gas

• But, they embark on completely different strategies and policies
  • **Belarus**’ fully state-owned sector is embracing nuclear power
  • **Ukraine** is on a bumpy road to liberalization and privatization. Higher gas prices allowed demand reduction, increased domestic production and imports from the EU
  • **Georgia** is planning to meet increasing demand with more – implicitly subsidized - hydro-power
Belarus

- Nuclear power plant in Belarus: first block (1.200 MW) in 2019, second block (1.200 MW) in 2020
- Supposed to cover more than half of power demand
- Total cost estimated at USD 10 bn, financed through a Russian long-term loan
- Electricity and gas prices in Europe much lower than when project was decided

Conclusion
- The integration of significant amounts of relatively expensive (>50 USD/MWh) base-load electricity will be an economic and technical challenge
Electricity demand in Georgia expected to double from 10.9 TWh in 2015 to 19.6 TWh in 2025.

To cover demand, there are about 100 power plant projects with a capacity of about 4,500 MW and cost of about 7.7 bn USD under consideration.

But only 1,000 MW will be needed.

Different combinations of additional power plants are possible:
- Building only hydro-power would be very expensive, as most hydro-capacities are unavailable in Winter.
- Only gas or coal would be expensive as well.
- In technical terms, Georgia could rely on imports – which would be cheap in the short term, but carries political risk.

**Conclusion**
- A combination of hydropower, a gas unit and imports has acceptable cost and sufficient supply security.
- Other renewables might help.

### Options to cover future demand

<table>
<thead>
<tr>
<th>Options to cover future demand</th>
<th>Annual net cost in mn USD</th>
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Source: own calculations based on GSE

*number of hours, demand is larger than X

**Load duration curve** 2015 and 2025

Source: own calculations based on www.gse.com.ge

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Source: own calculations based on GSE

*DSR = demand side management
Ukraine - electricity

**Electricity demand recovers**
- After electricity demand dropped significantly, it slowly starts to recover

**Nuclear dominates**
- Gas irrelevant for electricity production since 2013
- Coal-based electricity fell due to coal supply shortages, which have been resolved
- Share of nuclear reached a record of 54% - albeit capacity factors remain low

**Reform**
- Ukraine committed to transpose Energy Community rules
- Significant market power undermines electricity market reform

**Conclusion**
- No acute electricity crisis, but sector requires massive investment

*Source: Ukrstat*
Reverse-flows and low demand allowed Ukraine to stop gas imports from Russia in November 2015.

Gas storage levels currently a bit worrying—16 bcm (1Dec16) compared to 19 bcm (1Dec15).

Lower import volumes and lower import prices reduced gas import bill from 11 bn USD to 4.5 bn USD.

Gas production stable around 20 bcm/y.

**Conclusion**

Gas imports from Russia currently an option, but not a necessity.
Massive tariff increases:
• brought prices in line with cost
• price-harmonisation reduced space for corruption
• Reduced inefficient gas demand
• Stabilised Naftogaz
• Incentives for gas production
• Went surprisingly smoothly

Significant reforms
• Gas law drafted by Energy Community
• Transmission and storage to be unbundled
• New Naftogaz management
• …

Risks
• Domestic: Assets still in state-ownership and fight for control ongoing
• External: conducive environment might end (NS2, Western donors, gas oversupply)
- If no gas transit through Ukraine, it will be difficult to bring gas from West to Ukraine
- Gazprom might sell more gas in NWE at competitive prices, while keeping prices high in the East
What can the EU do?

- Support countries to increase energy tariffs
  - Provide conditional finance
- Rules for electricity trade shall stimulate the modernisation of EaP‘s energy sectors
  - Belarus, Ukraine and Georgia keen to export electricity to Entso-E
- Provide a regulatory anchor, to enable private long-term investments
  - European development banks can take some political risks
  - Lend European legal infrastructure for energy dispute settlement for a transition period
  - Strengthen Energy Community – complement legal expertise with economic expertise
Thank you!

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