

CEER

**Council of European
Energy Regulators**



**Future Role of Gas
from a Regulatory Perspective
CEER study**

Markus Krug

Madrid Forum, 19 October 2017



Agenda

- Introduction / Motivation for the study
- Future demand for natural gas and renewable gas
- Commodity perspective
- Infrastructure perspective
- Wrap-up



Starting point

- The final customer represents the ultimate focus of CEER
- In particular, the fulfillment of their energy needs in a reliable, competitive and cost-efficient manner is of the utmost importance
- This fundamental objective is valid now and must be equally valid in the future (potentially widely decarbonised) energy market
- While CEER is no gas advocate, the following gas-related aspects need to be considered:
 - ▶ The gas sector has developed to form a backbone of the EU energy sector
 - ▶ As a matter of fact, gas is able to provide a competitive, safe and efficient energy solution
 - ▶ This is based on a mature and Union-wide developed infrastructure, with ongoing substantial investments for renewal and reinforcement
- However, decarbonisation will change the gas sector fundamentally



“Understanding of this change” as motivation for this study

- The CEER Gas Working Group commissioned DNV GL to prepare a study aiming to evaluate the potential future role of gas (incl. its infrastructure) and the consequent regulatory measures that may be required
- The work is structured along the following distinct perspectives:

Commodity perspective

Commodity “natural gas” in its current form or any substitutes of it (from biomethane up to synthetic methane)

Infrastructure perspective

Infrastructure especially for transport but also storage and actual consumption, etc. of the commodity as described above

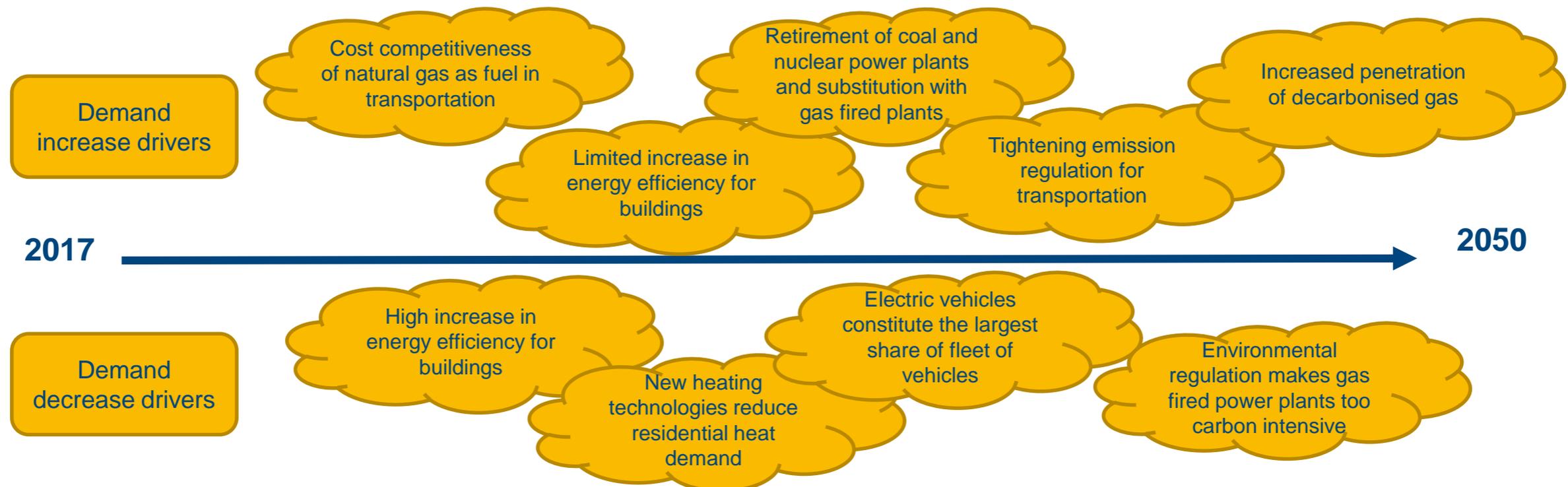
- The results shall enable the regulatory community to:
 - ▶ identify key issues deriving from the future development of the natural gas sector both from a commodity and infrastructure perspective
 - ▶ develop proposals for potential future regulatory initiatives that may be needed to reflect these developments





Scenarios as indicator for the “magnitude of change”

- A number of natural gas demand scenarios have been assessed in order to evaluate the magnitude of demand changes possible in the future and the potential drivers of such changes
- The analysis of different demand scenarios indicates that there are multiple drivers that can steer demand increase or decreases (examples of drives across the scenarios):

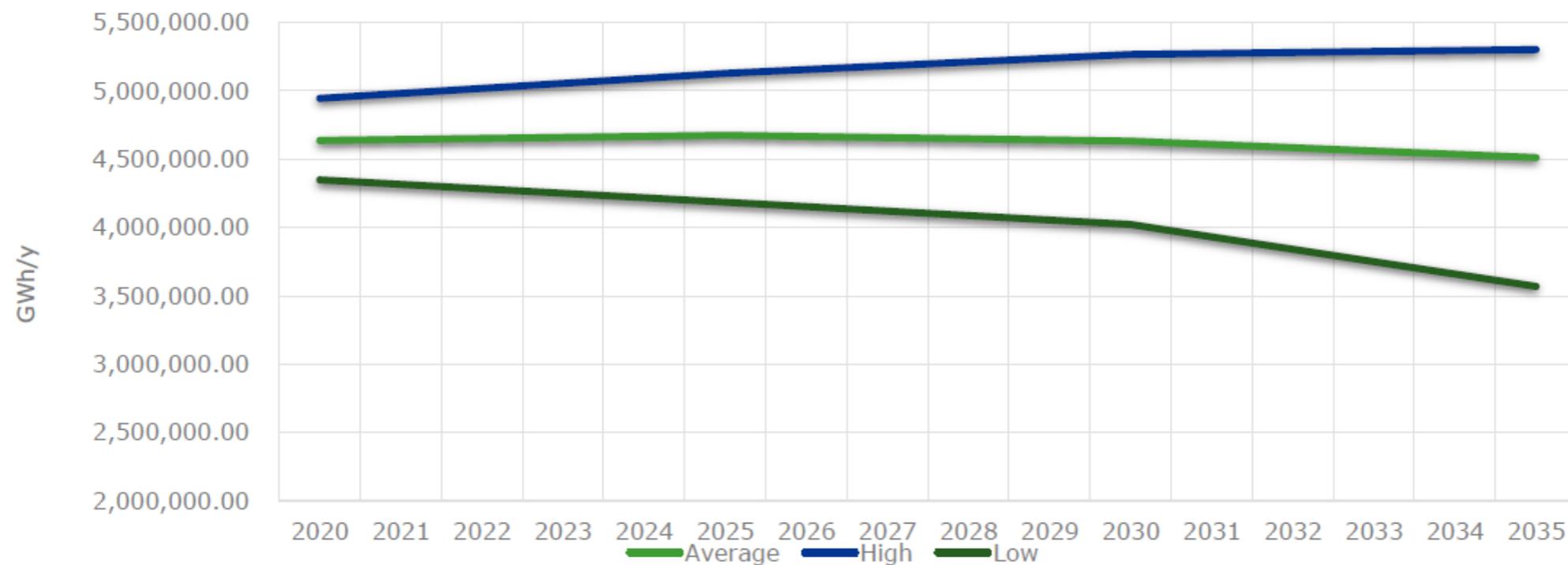


- Drivers for natural gas demand appear across most sectors of the economy and can be generally generated either by changes in the competitiveness of natural gas within each sector or by technological developments
- Both changes in competitiveness and in technology can have positive or negative effects on natural gas demand



Scenarios as indicator for the “magnitude of change”

- The three demand scenarios chosen identify substantial differences in the outlook for natural gas consumption in the EU 28:



Sources: ENTSOG (2017) TYNDP, IEA WEO 2016 (own conversion of data to GWh/y)

The following data has been used: ENTSOG (2017) TYNDP – Yearly demand data – EU total demand // IEA WEO 2016 – Total Primary Energy Demand data

- While this study does not challenge these scenarios or aim to identify the most realistic ones, it uses their very different results as an illustration of the very different shades of future development
- The study also considers the use of renewable gasses to meet decarbonisation targets
- Based on that, the regulatory implications are derived and structured along 3 demand scenarios for natural gas



Main findings: Commodity perspective I

- Competitiveness of natural gas and penetration of decarbonised gas will determine the future efficient use of gas infrastructure
- Natural gas remains competitive in the residential/heating sector
 - ▶ Natural gas can compete on an equal level with other sources of heat (district heating)
 - ▶ Regulatory measures should focus on the enhancement of retail competition by smoothing switching processes for end-users between different sources of heat, and abolishment of price regulation except for vulnerable customers
- Natural gas competitiveness is high in transportation sector (through the use of CNG and LNG as a fuel)
 - ▶ Demand for natural gas in transportation is expected to increase under the three scenarios supported primarily by the cost competitiveness of natural gas as a fuel and ability to reduce carbon emissions
 - ▶ The transportation business can be considered as contestable – there is no evident need of price regulation in such contestable businesses
 - ▶ On a policy level, there are multiple measures that can be considered to support the use of natural gas (e.g. technology neutral well-to-wheels emission targets instead of current tank-to-wheels emissions targets, incentives and tax breaks for the purchase of natural gas vehicles)
 - ▶ These measures aim to promote the development of certain new technologies with favourable environmental impact (positive externalities and innovation)





Main findings: Commodity perspective II

- Natural gas retains a key role in power generation to back-up RES
 - ▶ AGTM recommendations still valid: striving for win-win-win situations for generator, TSO/DSO, and market by introducing short-term capacity products with reasonable short-term multipliers for gas-fired power generation
 - ▶ Further improvement of the effectiveness of the wholesale gas market, for example merging of hubs/market zones when economically efficient, subject to CBA
 - ▶ Improvement of coordination between gas and power sectors, for example operational decisions, time alignment, infrastructure planning
- Regulation can have a key role to play in supporting renewable gases
 - ▶ Policy decision: supporting the increased production of decarbonised gas
 - ▶ Specific economic measures can be used, including
 - tax incentives
 - investment grants for pilot projects
 - introduction of trade certificates for the production and trade of such gases that would allow market players to reduce their CO₂ emission footprint
 - ▶ Regulators in favour of market-based instruments in order to achieve decarbonisation in the most cost-efficient way



Main findings: Infrastructure perspective I

- Addressing stranded assets in a low demand scenario
 - ▶ Stranded assets that are identified across natural gas transmission networks could be dealt with from a regulatory point of view
 - Before stranding emerges:
 - adjustments to their depreciation
 - adjustment to the cost of capital
 - When stranding has emerged
 - re-assessment of their value in the RAB
 - adjustment to the cost of capital
 - explicit compensation to transmission system operators for their decommissioning
 - ▶ Clear policy framework will enable NRAs to deal with stranded assets in the least disruptive way for final customers
- Coordinated Decommissioning
 - ▶ Coordinated decommissioning of infrastructure assets required for assets crossing or affecting two or more Member States
 - ▶ The cost of decommissioning should be allocated between the transmission system operators involved based on the share of benefits/costs that the decommissioning will generate for each party involved
 - ▶ A cost-benefit analysis of the decommissioning of an asset should therefore be done before a decision to decommission such asset is taken



Main findings: Infrastructure perspective II

- CNG / LNG and Infrastructure Development
 - ▶ Regulatory measures appear necessary in the area of fuel availability and fuelling infrastructure
 - ▶ Such infrastructure is still fragmented and partly limited in Europe, which can impede the growth in use of natural gas in transportation across the sub-sectors assessed
 - ▶ Network operators have already decided in some cases to get involved in contestable activities as the delivery of LNG or CNG for transportation, but also P2G plants and others and become enablers of development of new technologies
 - ▶ Where network operators are capable of providing a mixture of services, i.e. regulated and contestable services, the regulatory framework should not create a barrier
 - ▶ Regulators may consider adapting the existing unbundling rules, by recognising explicitly the specific circumstances and the motivation for such involvement of the regulated business into contestable activities
 - ▶ A coordinated European approach would support the development of fuelling infrastructure





Main findings: Infrastructure perspective III

- Decarbonised Gases and the Role of Regulation
 - ▶ Regulation for biogas/biomethane and hydrogen infrastructure could be included in an early phase
 - the adjustment of provisions for blending of these gases with natural gas
 - favorable connection procedures for new gases to the natural gas network
 - the steering of the roll-out of the technologies to produce such gases
 - ▶ The tariffs can be set for decarbonised gases injected into the natural gas network or to be used to produce heat and electricity
 - ▶ The use of green certificates can be used to support the establishment of regional markets for decarbonised gases
 - ▶ Certificates similar to the ones used in the power sector for renewable energy can also be used to certify the decarbonised nature of the gas being purchased
- Innovation and Decarbonisation
 - ▶ Activities in the areas of research and development, product development and prototype development can generally be defined as innovation initiatives and be granted regulatory support
 - This can be incorporated into the regulatory framework by using special allowance based on a proportion of the allowed revenues
 - Also it might be consider to use depreciation allowances, e.g. accelerated depreciation allowance (front-loaded profile, shorter asset life) would allow the regulated companies to recover the cost of the investment quicker
 - Alternatively, additional return (WACC premium) can be used to support investment



Wrap-up

- Decarbonisation of the EU energy market shall be based on cost-efficient measures, minimising CO₂ abatement costs
- The gas sector shows significant potential to contribute to such a decarbonisation process
- Gas TSOs/DSOs are enablers of energy system transformation, they:
 - ▶ raise synergies of an integrated power and gas system
 - ▶ develop necessary infrastructure for new technologies supporting decarbonization
 - ▶ support innovation
 - ▶ foster market-readiness of systemically sensitive solutions
- Regulators need to be committed to support this process
- Effective forward-looking regulation of gas markets requires policy clarity regarding the future role of (decarbonised) gas and its underlying infrastructure



Thank you for your attention!

**Council of European
Energy Regulators**

CEER

