

Amsterdam, 15<sup>th</sup> May 2019

# **Projects of Common Interest**

### **Stream A – Opening up Central and Eastern Europe**

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Image Courtesy of Thyssengas





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### **Introduce ENTSOG**



### ENTSOG: who we are

#### European Network of Transmission System Operators for Gas





Since its foundation, ENTSOG member TSOs have provided wide coverage of the European gas market. In addition, according to ENTSOG's articles of association TSOs from EU countries currently derogated from the Third Energy Package, such as two of the Baltic States, are associated partners and are able to participate in its activities.

Since 2011, TSOs from Third ParTy countries (candidates for EU accession, members of the Energy Community or EFTA) interested in following development of the network codes were also admitted to the association as observers.

#### AUSTRIA, GERMANY AND SWITZERLAND



# ENTSOG: what we do



Our key deliverables include:

- Ten Year Network Development Plan (TYNDP)
- Winter and Summer Supply Outlooks
- Coordinating our Members' regional investment plants (GRIPs)
- Network Codes development and Monitoring
- Transparency Platform
- Functionality Platform
- Innovative Projects Platform





### **PCI process**



# **Role of TYNDP**



#### TYNDP



#### **Stakeholder engagement**

#### **ACER and European Commission**

### TEN-YEAR NETWORK DEVELOPMENT PLAN

EU TYNDP is built on **TEN-E Regulation** and plays a role as a starting point in the wider process of **PCIs selection**, managed by the European Commission and Regional Groups.



EVERY 2 YEARS

Every two years ENTSOG (together with ENTSO-E) **plan, assess and test** the infrastructure against possible future scenarios to **secure energy demand** for the next decades. TYNDP is a **highly inclusive** and **transparent** process, building on input from numerous stakeholders.



### **ENTSOG scenarios vs historical values**

### **TYNDP scenarios since 2011**



Decreasing trend and narrower range with each edition

TYNDP 2017 scenarios were considering lower demand for 2017 than actually observed





### **Annual gas demand in EU-28**

# **Annual Gas Demand in EU-28**



#### Gross inland consumption of natural gas, by country, 2018





### Assessment for 4<sup>th</sup> PCI process: needs, projects

# Work on PCIs coordinated in Regional Groups

Trans-European Networks for Energy (TEN-E) identifies four gas infrastructure corridors as priority, that require infrastructure development to end isolation from EU gas markets and/or improve Security of Supply. For each corridor a Regional Group is established to assess PCI candidates, which contribute most to achieving EU's energy and climate policy.

#### North-South gas interconnections in Western Europe ('NSI West Gas')

Infrastructure for north-south gas flows in western Europe to further diversify routes of supply and increase short-term deliverability: Austria, Bulgaria, Croatia, Cyprus, Czechia, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia

#### North-South Interconnections in Central- and South Eastern Europe ('NSI East Gas')

Connections between and in the Baltic Sea region, the Adriatic and Aegean Seas, the Eastern Mediterranean Sea and the Black Sea: Austria, Bulgaria, Croatia, Cyprus, Czechia, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia;

#### Southern Gas Corridor ('SGC')

Transmission from Caspian Basin, Central Asia, Middle East and Eastern Mediterranean to enhance diversification of supply: Austria, Bulgaria, Croatia, Czechia, Cyprus, France, Germany, Hungary, Greece, Italy, Poland, Romania, Slovakia, Slovenia;

#### Baltic Energy Market Interconnection Plan in gas ('BEMIP Gas'):

End isolation of the three Baltic States and Finland and their dependency on a single supplier: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden.





### At EU level

- > Diversified pipeline imports
- > A well-developed transmission network
- > LNG terminals all around Europe
- > Underground storages in most EU countries

Source: Draft TYNDP 2018 Executive Summary

### **Needs assessment: supply disruption**





Disruptions scenarios defined in SoS regulation 2017/1938

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## Security of supply



#### Already achieved

- > Resilience to climatic stresses (1-in-20 conditions)
- > Resilience to a large number of supply and infrastructure disruptions

### Further infrastructure needs

- > Mitigating the impact of Ukraine route disruption in South-Eastern Europe
- > Mitigating the impact of Belarus route and Russian imports disruption in North-Eastern Europe
- > To mitigate impact of national largest infrastructures disruptions in specific countries

### Needs assessment: Supply Source "commercial" Access



#### **FID projects**

#### Several countries have only access to 1 or 2 supply sources

DG / GCA



 Number of Sources (SSA)

 1
 2

 3
 4

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### **Competition & Market Integration**

### Already achieved

- > Most of Europe can access diversified supply sources
- > The infrastructure allows for efficient cooperation between countries showing low level of dependence on LNG and Russian supply
- > Infrastructure allows for hub price convergence, especially in Western Europe
- > Most countries have balanced entry capacities in comparison to their geographical location

### Further infrastructure needs

- > To ensure more diversified access to supply sources in the Baltics, South-East Europe and Iberian Peninsula
- > To lift high dependence to a specific supply source







80% of FID and Advanced projects are expected to be commissioned by 2022



Large-scale import projects



### **Projects - EC Interactive Map for PCIs**

Projects of common interest - Interactive map



http://ec.europa.eu/energy/infrastructure/transparency\_platform/map-viewer/main.html



### What EU infrastructure already achieves

# What the EU gas infrastructure already achieves

#### Security of supply

- *Resilience to extreme temperature*
- *Resilience to many supply and infrastructure disruptions*

#### Market integration and competition

- Most of Europe has access to diversified supply sources
- Hub prices converge most of the time especially in Western Europe

#### **Sustainability**

 The existing EU gas infrastructure is generally already able to contribute to significant CO<sub>2</sub> reduction and to complement renewable generation and integrate renewable gases

#### In specific areas further infrastructure needs remain



### The climate challenge

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### Reaching climate targets with gas infrastructure

### Decarbonisation and hybrid (gas/electricity) system

- > Next edition of Joint ENTSOs Scenarios 2020 (draft report after Summer 2019):
  - National Trends in line with NECPs
  - Global Ambition Paris Agreement Carbon Budget
  - Distributed Generation Paris Agreement Carbon Budget
- > Hybrid (gas/electricity) system allows significant CO2 reductions at lower cost, where gas infrastructure can handle increasing shares of renewable and decarbonised gas

Electricity and Gas(es) can substitute other fuels and are becoming increasingly renewable and decarbonised energy carriers





Developing and integrating renewable and decarbonized sources of energy paves the road to a net zero-carbon future



Climate challenge requires hybrid approach to total energy system

### **Projects – shift of focus**

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- ENTSOG and its members have opened an Innovative Projects Platform
- To promote innovative technologies, regulation and business models, and partnerships across the value chain

https://www.entsog.eu/members-activity

#### **INNOVATIVE PROJECTS** PLATFORM

888		53
Technology	Regulation & business model	Partnership
Discover here how tachnologies can optimise the usage of the right number optimises must be the transmission of a starout sourchorsation of the UL gas rotem. Technology RMC has a volar role in the experimentation SMOS developer (TSDA) are developing new and involution technologies to other sustainable solutions for the paracector. Readmore	Say Monet on how LMSGO Meeters (15%) engage in development of the new energy products and services to funce under of new more and development of the grid. Read more	Look at new percenting and hittatives from the PURION Network (TOS). The are available percenting ending NETROON Network (TOS). The set of the provided and the provided and the set of the provided and the provided a
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Innovation & Transition	CCS	Hydrogen
Technological innovation is important for the transition to low carbon economy and combating dimate change. New technologies such as power-to gas, biomethane, hydrogen, CNG will enable this transition.	Carbon Capture and storage is the process of capturing wants CO2 from large point sources, such as fossil fuel power plants, transporting it to a storage site, and depositing it where 't will not enter the atmosphere. The aim is to prevent the release of large quantities of CO2 into the atmosphere.	Hadrogen can be produced from diverse process tachnologies. Hydrogen can be produced via steam methane reforming and blended with network gas to be transported via existing grid infrastructure and contribute towards decarbonization.
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®	5	
Biogas	Power to gas	CNG
Biogas is obtained via the anaembic decomposition of the organic matter. After the process of upgrading biogas becomes biomethane with the same quality standard as natural gas and can be transported via the wisting grid infrastructure.	Power-to-gas is the conversion of electrical power into a gaseous energy carrier like e.g. hydrogen or methane. This technological concest is considered to be an important tool in the energy transition.	Compressed Natural Gas (CNG) is a fuel source that is made from compressing natural gas to less than 1% of its standard atmospheric volume. Because CNG is a compressed form of the same gas we use in our home, it can be used in a combustion envine. CNG combustion produces feese

### **Project portal: collection for next TYNDP 2020**

- ENTSOG project portal will collect projects from promotors for TYNDP 2020, incl. pipeline, LNG, storage and a new category of **energy transition projects**
- The project portal will be open from 30th May 28th June 2019

https://www.entsog.eu/sites/default/files/2019-05/TYNDP%202020\_Practical\_Implementation\_Document\_20190502.pdf



### **Thank You for Your Attention**

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