

Regional Training for the Employees of Parliaments of Armenia, Azerbaijan, Georgia, Moldova, Türkiye and Ukraine

SECURITY OF GAS SUPPLY, STORAGE SERVICES, DIVERSIFICATION STRATEGIES

Karolina Čegir, Senior Gas Expert, Energy Community Secretariat

- ✓ Sufficient volumes
- ✓ Timely delivery
- ✓ At the required places
- ✓ Affordable
- ✓ For all users
- ✓ Contracted/produced
- ✓ Booked/delivered
- ✓ Connections/capacities
- ✓ Regulated prices/subsidies / PSO
- ✓ Protected customers

Market set up – market players.....who should be responsible for security?

Responsible authority

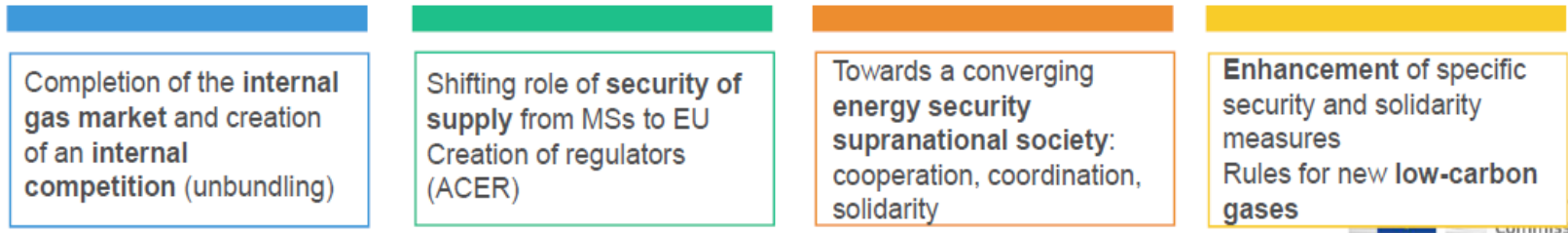
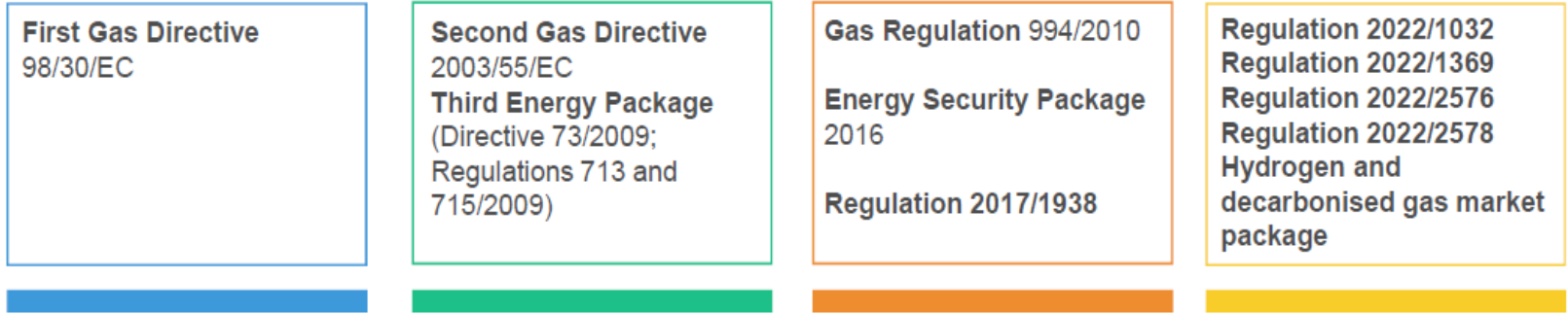
- to define obligations
- to define protected customers
- to define the level of crisis and actions
- to monitor security

Responsible entity

- to ensure sufficient gas volumes when needed
- to all predefined customers
- to get compensated for extra costs

Evolution of EU policies on energy security

EU POLICIES ON ENERGY SECURITY



Source: [Sesini et al. \(2022\)](#)

Gas Directive 2009/73/EC (and the previous 2003/55)

Monitoring of security of supply

Member States shall ensure the monitoring of security of supply issues. Where Member States consider it appropriate, they may delegate that task to the regulatory authorities referred to in Article 39(1). Such monitoring shall, in particular, cover the balance of supply and demand on the national market, the level of expected future demand and available supplies, envisaged additional capacity being planned or under construction, and the quality and level of maintenance of the networks, as well as measures to cover peak demand and to deal with shortfalls of one or more suppliers. The competent authorities shall publish, by 31 July each year, a report outlining the findings resulting from the monitoring of those issues, as well as any measures taken or envisaged to address them and shall forward that report to the Commission forthwith.

Public Service Obligation

Member States may impose on undertakings operating in the gas sector, in the general economic interest, public service obligations which may relate to security, **including security of supply**, regularity, quality and price of supplies, and environmental protection, including energy efficiency, energy from renewable sources and climate protection. Such obligations shall be clearly defined, transparent, non-discriminatory, verifiable and shall guarantee equality of access for natural gas undertakings of the Community to national consumers. In relation to security of supply, energy efficiency/demand-side management and for the fulfilment of environmental goals and goals for energy from renewable sources, as referred to in this paragraph, Member States may introduce the implementation of long-term planning, taking into account the possibility of third parties seeking access to the system.

Regional solidarity

1. In order to safeguard a secure supply on the internal market in natural gas, Member States shall cooperate in order to promote regional and bilateral solidarity.
2. Such cooperation shall cover situations resulting or likely to result in the short term in a severe disruption of supply affecting a Member State. It shall include:
 - (a) coordination of national emergency measures referred to in Article 8 of Council Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard security of natural gas supply ⁽¹⁾;
 - (b) identification and, where necessary, development or upgrading of electricity and natural gas interconnections; and
 - (c) conditions and practical modalities for mutual assistance.
3. The Commission and the other Member States shall be kept informed of such cooperation.
4. The Commission may adopt Guidelines for regional cooperation in a spirit of solidarity. Those measures, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 51(3).

Directive 2004/67/EC

Policies for securing gas supply
Specific (protected) customers
Supply standards
National emergency measures
Community mechanism
EU Gas Coordination Group
/ EnC Security of supply
Coordination Group
Reporting, monitoring

Regulation (EU) 994/2010

Competent authority
Protected customers
Supply standards
Infrastructure standards
Risk Assessment
Preventive Action Plans
Emergency Plans
National emergency measures &
voluntary joint plans and measures
Crisis levels
EC role
Community mechanism
Gas Coordination Group
Information exchange, reporting,
monitoring

Regulation (EU) 2017/1938

Competent authority
Protected customers (harmonised)
Supply standards
Improved Infrastructure standards
Risk Assessment/**regional**/content &
template
Preventive Action Plans/ content &
template
Emergency Plans/ content & template
National emergency measures &
mandatory regional plans and measures
Crisis levels
Strong EC role
Community mechanism
Solidarity
Gas Coordination Group
Information exchange, reporting,
monitoring

Protected customers

means a **household customer who is connected to a gas distribution network** and, **in addition**, where the Member State/ Contracting Party concerned so decides, may also mean one or more of the following, provided that enterprises or services as referred to in points (a) and (b) **do not, jointly, represent more than 20 %** of the total annual final gas consumption in that Member State/Contracting Party:

- a) a small or medium-sized enterprise, provided that it is connected to a gas distribution network;
- b) an essential social service, provided that it is connected to a gas distribution or transmission network;
- c) a district heating installation to the extent that it delivers heating to household customers, small or medium-sized enterprises, or essential social services, provided that such installation is not able to switch to other fuels than gas;

Supply standards

The competent authority shall require the natural gas undertakings that it identifies, to take measures to ensure the gas supply to the protected customers of the Member State/Contracting Party in each of the following cases:

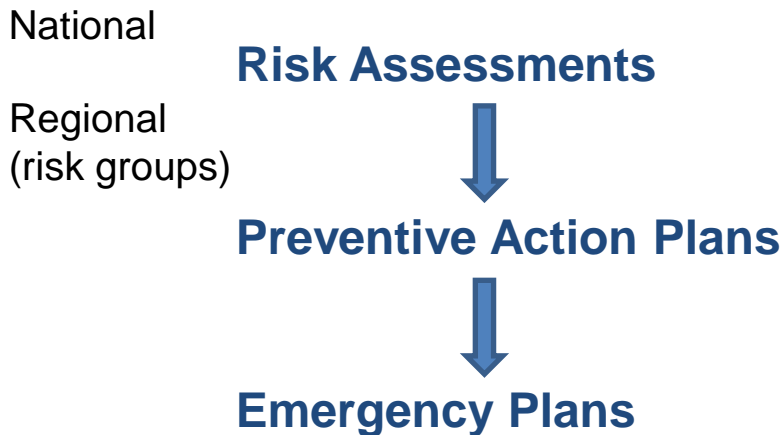
- (a) extreme temperatures during a 7-day peak period occurring with a statistical probability of once in 20 years;
- (b) any period of 30 days of exceptionally high gas demand, occurring with a statistical probability of once in 20 years;
- (c) for a period of 30 days in the case of disruption of the single largest gas infrastructure under average winter conditions.

Infrastructure standards

$$N - 1 [\%] = \frac{EPm + Pm + Sm + LNGm - Im}{Dmax} \times 100, \quad N - 1 \geq 100\%$$

Each MS/Contracting Party or, where a MS/Contracting Party so provides, its competent authority shall ensure that the necessary measures are taken so that in the event of a disruption of the single largest gas infrastructure, the technical capacity of the remaining infrastructure, determined in accordance with the **N – 1** formula to satisfy total gas demand of the calculated area during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years. This shall be done taking into account gas consumption trends, the long-term impact of energy efficiency measures and the utilisation rates of existing infrastructure.

The transmission system operators shall enable permanent physical capacity to transport gas in both directions ('**bi-directional capacity**') on all interconnections between Member States/Contracting Parties



		Consequence How severe could outcomes be if the risk event occurred?				
		Insignificant 1	Minor 2	Significant 3	Major 4	Severe 5
Likelihood What's the chance of the risk occurring?	5 Almost certain	Medium 5	High 10	Very high 15	Extreme 20	Extreme 25
	4 Likely	Medium 4	Medium 8	High 12	Very high 16	Extreme 20
	3 Moderate	Low 3	Medium 6	Medium 9	High 12	Very high 15
	2 Unlikely	Very low 2	Low 4	Medium 6	Medium 8	High 10
	1 Rare	Very low 1	Very low 2	Low 3	Medium 4	Medium 5

Crisis Levels

- (a) early warning level (**‘early warning’**): where there is concrete, serious and reliable information that an event which is likely to result in significant deterioration of the gas supply situation may occur and is likely to lead to the alert or the emergency level being triggered; the early warning level may be activated by an early warning mechanism;
- (b) alert level (**‘alert’**): where a disruption of gas supply or exceptionally high gas demand which results in significant deterioration of the gas supply situation occurs but the market is still able to manage that disruption or demand without the need to resort to non-market-based measures
- (c) emergency level (**‘emergency’**): where there is exceptionally high gas demand, significant disruption of gas supply or other significant deterioration of the gas supply situation and all relevant market-based measures have been implemented but the gas supply is insufficient to meet the remaining gas demand so that non-market-based measures have to be additionally introduced with a view, in particular, to safeguarding gas supplies to protected customers

Solidarity

If a Member State has requested the application of the solidarity measure pursuant to this Article, a Member State which is directly connected to the requesting Member State or, where the Member State so provides, its competent authority or transmission system operator or distribution system operator shall as far as possible without creating unsafe situations, take the necessary measures to ensure that the gas supply to customers other than solidarity protected customers in its territory is reduced or does not continue to the extent necessary and for as long as the gas supply to solidarity protected customers in the requesting Member State is not satisfied. The requesting Member State shall ensure that the relevant volume of gas is effectively delivered to solidarity protected customers in its territory.

Security of gas supply – the role of storage [1]



Serves **producers**

Serves **consumers**

Serves **traders**

#1

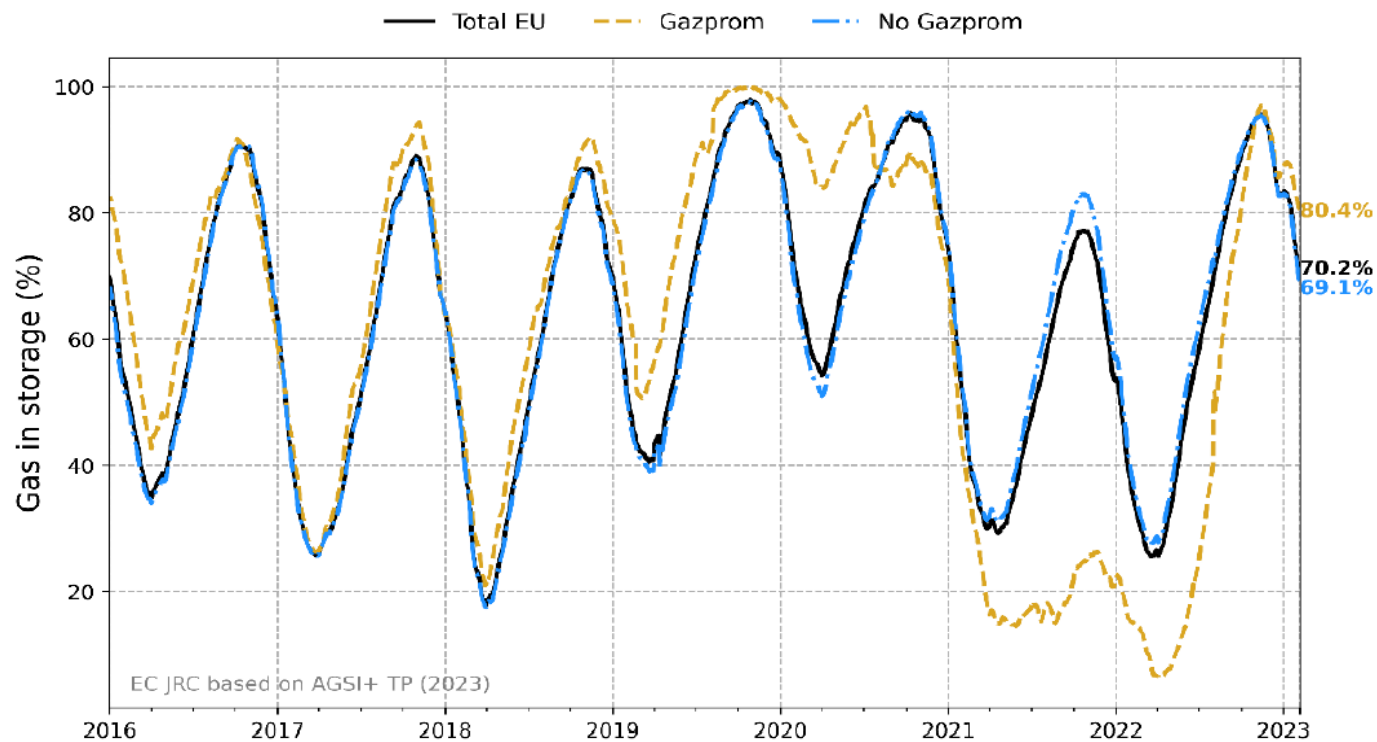
more interconnected, liquid market, less need for storage

#2

Crucial for the security of supply in emergency

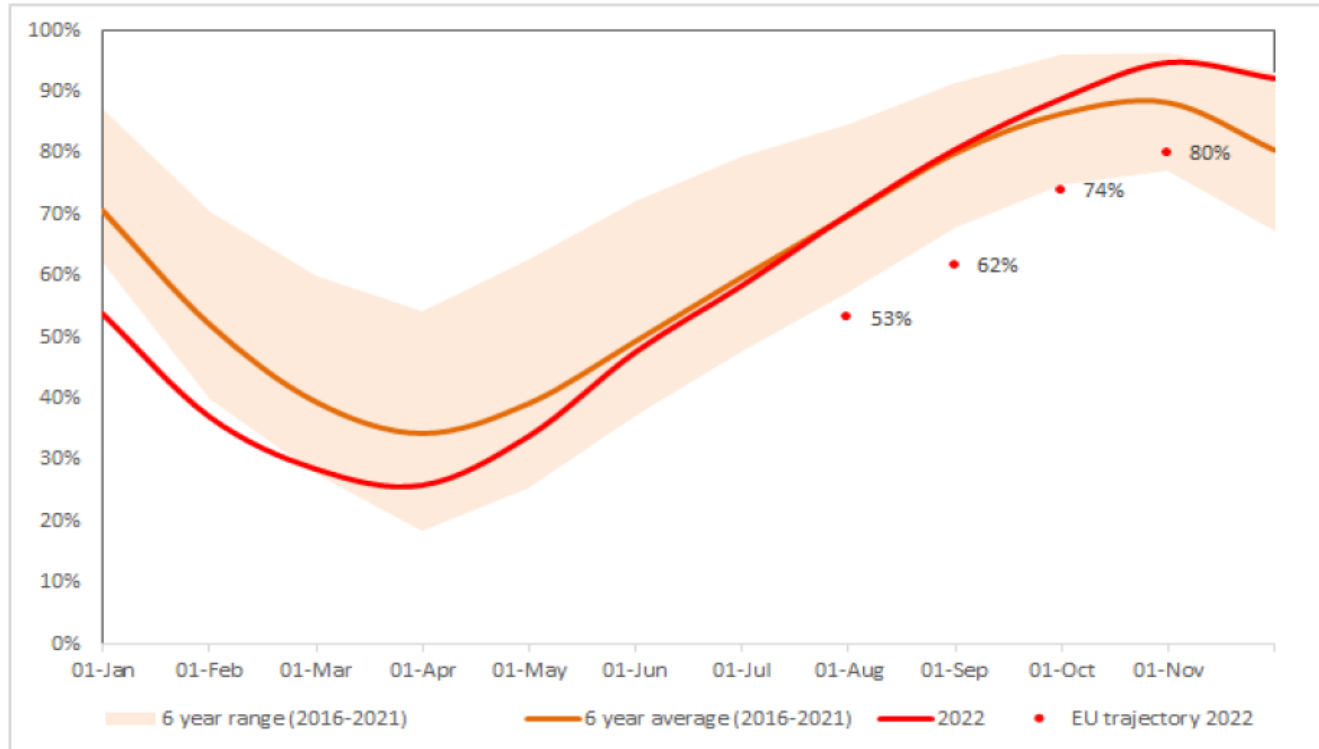
Security of gas supply – the role of storage [2]

Figure: Development of gas volumes in storage sites owned or operated by Gazprom



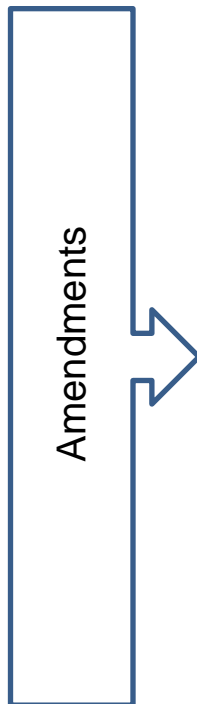
Security of gas supply – the role of storage [3]

Figure: EU storage filling level and EU trajectory 2022



Regulation (EU) 2017/1938

Competent authority
Protected customers (harmonised)
Supply standards
Improved Infrastructure standards
Risk Assessment/**regional**/content & template
Preventive Action Plans/ content & template
Emergency Plans/ content & template
National emergency measures & **mandatory regional** plans and measures
Crisis levels
Strong EC role
Community mechanism
Solidarity
Gas Coordination Group
Information exchange, reporting, monitoring



Regulation of the European Parliament and of the Council (EU) 2022/1032 with regard to gas storage

Article 6a

Storage filling targets

80% by 1 November 2022 / 90% by 1 November 2023...

Possible reduction to 35% of average consumption 2016-2021 if MS/CP has UGS capacity overpassing annual consumption

Storage filling trajectories; 1 Feb, 1 May, 1 September

Article 6b

Measures to implement Article 6a

Article 6c

Storage arrangements and burden-sharing mechanisms
For MS/CP **without UGS facilities**

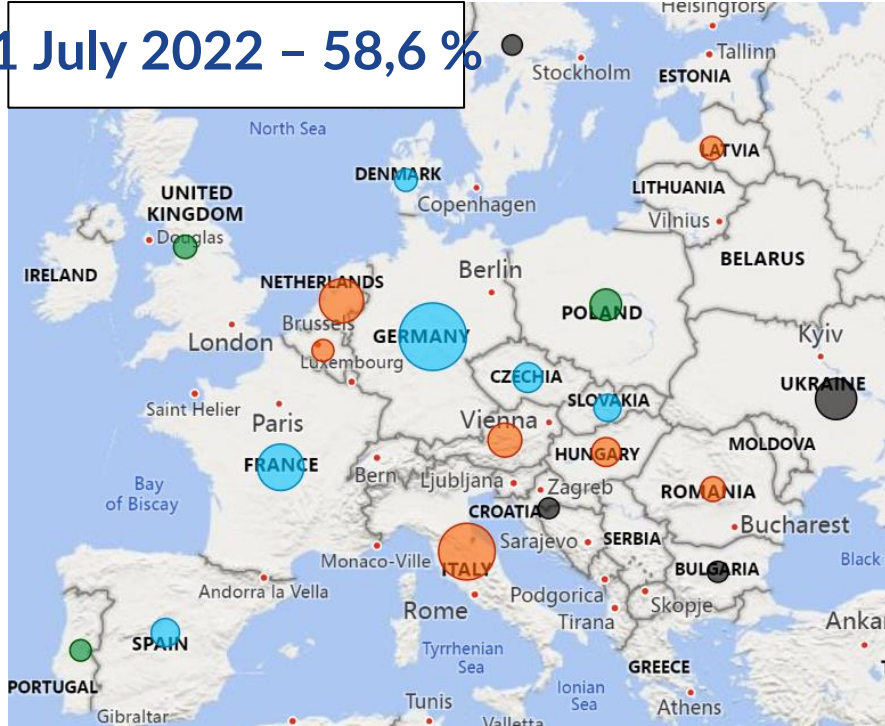
Article 6d

Monitoring and reinforcement

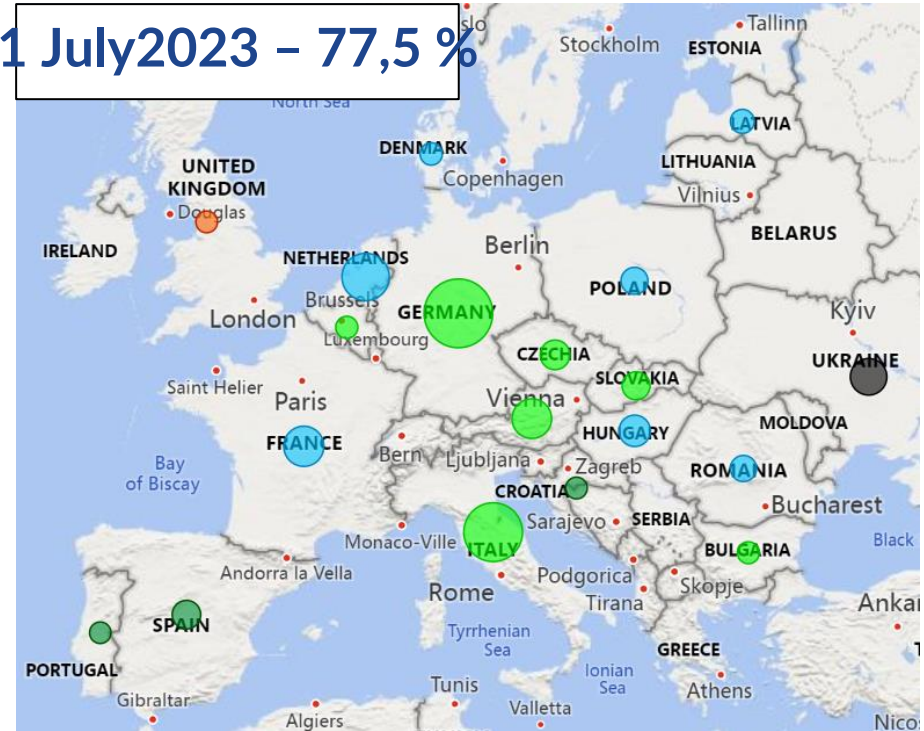
+ Storage System Operator Certification in regards to Security of Supply (Amendments to Regulation 715/2009)

Security of gas supply – proven in 2022/23

1 July 2022 – 58,6 %

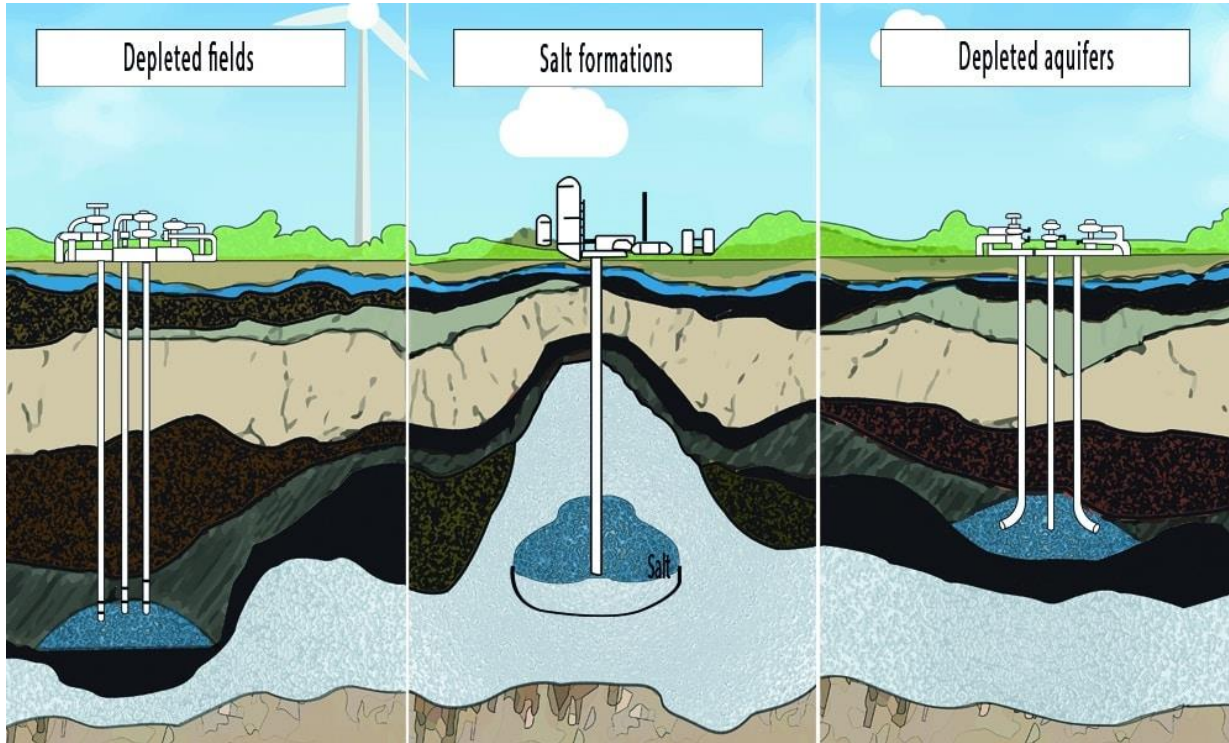


1 July 2023 – 77,5 %



Filling level % ● 20% and less ● 20-40% ● 40-60% ● 60-80% ● 80-90% ● 90%+

Gas storage – specific storage



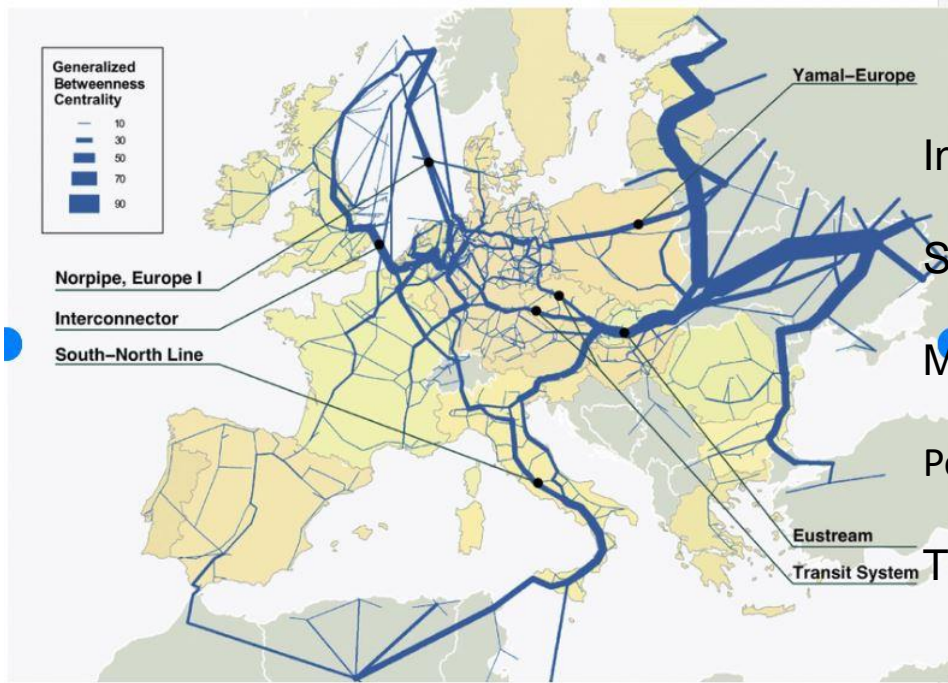
Service for a season
Total capacity
Injection capacity
Withdrawal capacity

Storage system operator

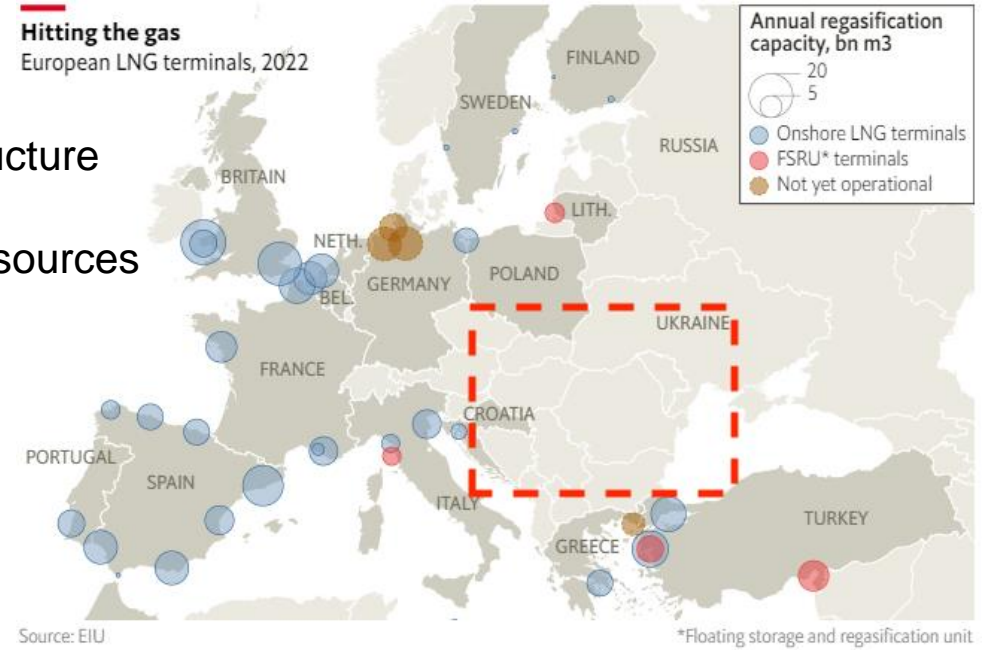
Regulated accesses
Negotiated access

Tariffs for services

Strategic storages



Hitting the gas
European LNG terminals, 2022



Diversification examples

Poland

Lithuania

Croatia

Finland

Bulgaria

Moldova

Ukraine



New infrastructure, but even more important – implemented rules on existing infrastructure


**TPA, bi-directional pipelines
Network Codes on interoperability,
congestion management, capacity
allocation....**



**THANK YOU
FOR YOUR ATTENTION**

karolina.cegir@energy-community.org

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