

STORAGE MAP 2018

EXISTING & PLANNED INFRASTRUCTURE

GIE IS REPRESENTING 31 MEMBERS IN 17 COUNTRIES

Members: Austria, Belgium, Bulgaria, Croatia, Czech Rep., Denmark, France, Germany, Hungary, Italy, The Netherlands, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, United Kingdom.

Map Legend

- Member Countries (Green)
- Other Countries (Light Green)
- Cross-border interconnection point (Blue circle)
- Cross-border interconnection point - Under construction or Planned (Blue circle with dashed border)
- Cross-border interconnection point with non-EU third country (Import/Export) (Blue circle with red border)
- Inter-country or intra-balancing zone point (Blue circle with red border)
- Non-EU Cross-border interconnection point (Blue circle with red border)

LNG Import

- LNG Import Terminal / Operational (Blue circle)
- LNG Import Terminal / Under const. or Projected (Blue circle with dashed border)

LNG Export

- LNG Export Terminal / Operational (Blue circle with red border)
- LNG Export Terminal / Project (Blue circle with red border and dashed border)

LNG Small Scale

- LNG liquefaction plant / Operational (Green circle)
- LNG liquefaction plant / Project (Green circle with dashed border)
- Import Terminal / Operational (Blue circle)
- Import Terminal / Under const. or Planned (Blue circle with dashed border)

Transport by pipeline

- Under 24" (Blue line)
- 24" to 36" (Blue line with dashed border)
- 36" and over (Blue line with red border)
- Project (Blue dashed line)

Transport by tanker

- Indicative LNG route (Blue dashed line)

Gas Reserve areas

- drilling platform (Blue star)

Operational & Investment status

- Operational (Green)
- Under construction (Yellow)
- New facility / expansion (Orange)
- Decommission new facility / expansion (Red)
- Planned (Light Green)

Working gas volume - TPA (TWh)

Commercially offered firm capacities (solid or unbold) in the meaning of GGPSSD - the maximum available storage capacity (i.e. technical storage capacity), apart from that part of the storage capacity used for operational needs related to transmission and/or production. This includes TPA exempted capacities as far as they are not defined as non-TPA below.

Withdrawal capacity - TPA (GWh/day)

Technical withdrawal rate related to TPA Working gas volume

Injection capacity - TPA (GWh/day)

Technical injection rate related to TPA Working gas volume

Working gas volume - Non-TPA (TWh)

Capacities reserved for operational needs related to transmission and/or production including strategic stocks (only technical capacities)

Withdrawal / Injection capacity - Non-TPA (GWh/day)

TPA

Indicates the applicable access regime:

- Regulated (Green box)
- Negotiated (Yellow box)
- Not Applicable (White box)

Gas storage facility type

- Aquifer (Blue square)
- Salt cavern (Green square)
- Depleted field / Gas field on shore offshore (Yellow square)
- Other types (Rock caverns, crystalline structures) (Red square)
- onshore facility (Blue square)
- offshore facility (Yellow square)
- 1991 start-up year (Red square)

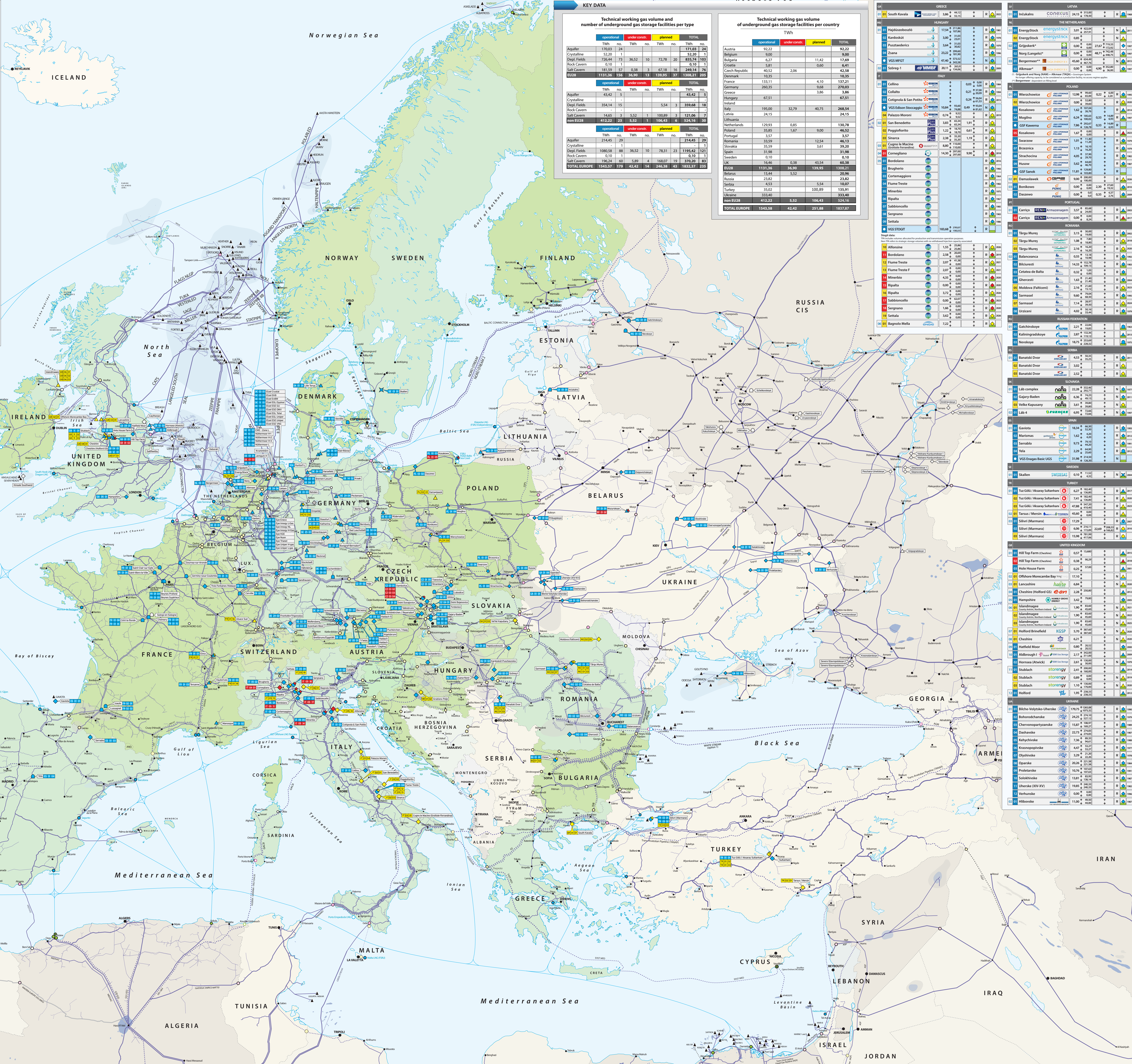
Scale: 1:8,000,000
Version: November 2018

Table 1: Existing & Planned Storage

Country	Name	Capacity (TWh)	Operational	Under Const.	Planned
Austria	Haidach	10.64	10.64	0	0
Belgium	Scheldewinkel	20.72	20.72	0	0
Bulgaria	Alphadon	1.47	1.47	0	0
Czech Rep.	Hluboká	0.94	0.94	0	0
Denmark	Nussdorf/Zaglig	3.26	3.26	0	0
France	Fischbacher/Rog	11.60	11.60	0	0
Germany	7 Fields	19.44	19.44	0	0
Hungary	VGS MND-GSG	24.00	24.00	0	0
Italy	Enel ESE	2.17	2.17	0	0
Netherlands	Stadland	1.10	1.10	0	0
Poland	Enel ESE	2.17	2.17	0	0
Portugal	Enel ESE	2.17	2.17	0	0
Romania	Burggraf/Bernsdorf	6.00	6.00	0	0
Slovakia	Bremen/Leuzum	4.06	4.06	0	0
Spain	Kiel-Röhm	5.00	5.00	0	0
Sweden	Bremen/Leuzum	4.06	4.06	0	0
UK	Freemantle	1.24	1.24	0	0
UK	Puckman	3.95	3.95	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0

Table 2: Planned Storage

Country	Name	Capacity (TWh)	Operational	Under Const.	Planned
Austria	Haidach	10.64	10.64	0	0
Belgium	Scheldewinkel	20.72	20.72	0	0
Bulgaria	Alphadon	1.47	1.47	0	0
Czech Rep.	Hluboká	0.94	0.94	0	0
Denmark	Nussdorf/Zaglig	3.26	3.26	0	0
France	Fischbacher/Rog	11.60	11.60	0	0
Germany	7 Fields	19.44	19.44	0	0
Hungary	VGS MND-GSG	24.00	24.00	0	0
Italy	Enel ESE	2.17	2.17	0	0
Netherlands	Stadland	1.10	1.10	0	0
Poland	Enel ESE	2.17	2.17	0	0
Portugal	Enel ESE	2.17	2.17	0	0
Romania	Burggraf/Bernsdorf	6.00	6.00	0	0
Slovakia	Bremen/Leuzum	4.06	4.06	0	0
Spain	Kiel-Röhm	5.00	5.00	0	0
Sweden	Bremen/Leuzum	4.06	4.06	0	0
UK	Freemantle	1.24	1.24	0	0
UK	Puckman	3.95	3.95	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0



KEY DATA

Technical working gas volume and number of underground gas storage facilities by type

Country	Operational (TWh)	Under const. (TWh)	Planned (TWh)	Total (TWh)	Operational (no.)	Under const. (no.)	Planned (no.)	Total (no.)
Aquifer	170.00	2.00	0.00	172.00	24	1	0	25
Crystalline	32.20	1.1	0.00	33.30	1	1	0	2
Rock Cavern	726.64	73	36.52	836.18	20	85	10	115
Salt Cavern	9.10	1	0.00	10.10	1	1	0	2
Salt Cavern	181.59	57	0.38	239.44	16	67	1	84
TOTAL	1191.54	156	36.90	1384.44	17	164	11	252

Technical working gas volume of underground gas storage facilities per country

Country	Operational (TWh)	Under const. (TWh)	Planned (TWh)	Total (TWh)
Austria	92.22	0.00	0.00	92.22
Belgium	20.72	0.00	0.00	20.72
Bulgaria	6.27	0.00	11.42	17.69
Croatia	0.81	0.00	0.00	0.81
Czech Republic	46.52	2.06	0.00	48.58
Denmark	19.35	0.00	0.00	19.35
France	13.11	4.10	0.00	17.21
Germany	263.35	9.68	0.00	273.03
Greece	0.00	3.86	0.00	3.86
Hungary	67.51	0.00	0.00	67.51
Ireland	0.00	0.00	0.00	0.00
Italy	190.00	32.79	40.75	263.54
Latvia	2.45	0.00	0.00	2.45
Lithuania	179.93	0.05	0.00	180.78
Netherlands	1.10	0.00	0.00	1.10
Poland	35.85	1.67	0.00	37.52
Portugal	3.57	0.00	0.00	3.57
Romania	33.09	13.54	46.13	92.76
Slovakia	33.59	3.61	0.00	37.20
Spain	31.98	0.00	0.00	31.98
Sweden	4.06	0.00	0.00	4.06
UK	16.46	0.38	43.54	60.38
TOTAL	1191.54	156	36.90	1384.44

Table 3: Storage Facilities by Country

Country	Name	Capacity (TWh)	Operational	Under Const.	Planned
Austria	Haidach	10.64	10.64	0	0
Belgium	Scheldewinkel	20.72	20.72	0	0
Bulgaria	Alphadon	1.47	1.47	0	0
Czech Rep.	Hluboká	0.94	0.94	0	0
Denmark	Nussdorf/Zaglig	3.26	3.26	0	0
France	Fischbacher/Rog	11.60	11.60	0	0
Germany	7 Fields	19.44	19.44	0	0
Hungary	VGS MND-GSG	24.00	24.00	0	0
Italy	Enel ESE	2.17	2.17	0	0
Netherlands	Stadland	1.10	1.10	0	0
Poland	Enel ESE	2.17	2.17	0	0
Portugal	Enel ESE	2.17	2.17	0	0
Romania	Burggraf/Bernsdorf	6.00	6.00	0	0
Slovakia	Bremen/Leuzum	4.06	4.06	0	0
Spain	Kiel-Röhm	5.00	5.00	0	0
Sweden	Bremen/Leuzum	4.06	4.06	0	0
UK	Freemantle	1.24	1.24	0	0
UK	Puckman	3.95	3.95	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0
UK	Schiffhausen	1.44	1.44	0	0