

# Gas Network Development Plan 2020-2030

Modelling results for base variant  
and network expansion proposal

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# Agenda

- Status of implementation compared with 2019 Implementation Report
- Modelling results for base variant
- Network expansion proposal according to Gas NDP 2020-2030

# Implementation status Gas NDP 2018-2028

- The **starting network** includes projects meeting the following criteria:
  - Current status of gas transmission network
  - Projects commissioned compared to the 2019 Implementation Report (23)
  - Projects under construction (31)
  - Projects for which final investment decision (FID) has been taken and all necessary permits have been obtained (7)
  
- The **implementation status of the expansion projects** is shown on the basis of the following project steps:
  - Commissioning, project conclusion/completion
  - Preparations, start of construction, construction, installation
  - Detailed planning, approval planning, approval procedures
  - Design planning, regional planning procedure
  - Planning brief, feasibility study
  - Project idea

# Implementation status

## Gas NDP 2018-2028

- The 2019 Implementation Report already identified the following **projects** from the Gas NDP 2018-2028 as having been commissioned, which is why they are no longer included in the Gas NDP 2020-2030:

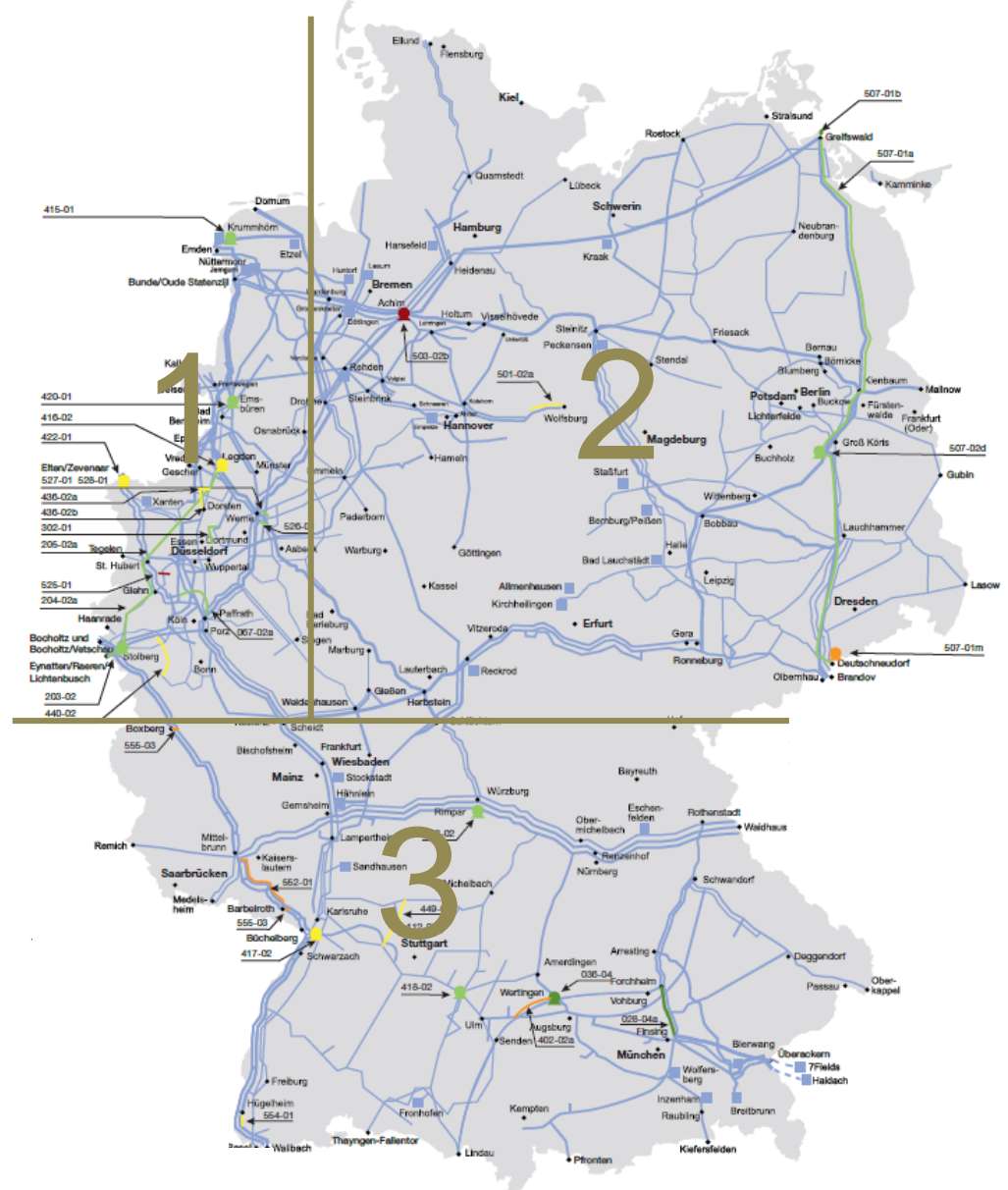
No.	ID number in the 2019 implementation report	Network expansion measure	Transmission system operator
1	026-06	Rothenstadt compressor station	GRTD/OGE
2	030-02a	MONACO 1	bayernets
3	040-05	Werne compressor station	OGE
4	045-04	Epe-Legden pipeline	OGE
5	049-07	Herbstein compressor station	OGE
6	224-03	Nordlohne GPCM station and connecting pipeline	OGE
7	225-04	Legden GPCM station and connecting pipeline	OGE
8	226-03	Weidenhausen GPCM station and connecting pipeline	OGE
9	227-05	Marburg GPCM station and connecting pipeline	OGE
10	228-03	Hilter GPCM station and connecting pipeline	OGE
11	304-01	Waidhaus compressor station reverse flow west-east MEGAL	GRTD/OGE
12	306-02	Legden GPCM station and connecting pipeline	OGE
13	322-02	Weidenhausen-Gießen pipeline	OGE
14	401-01	Wertingen GPCM station	bayernets
15	414-01	Krummhörn compressor station	OGE
16	430-01	Posthausen GPCM station	GTG Nord

Source: Transmission system operators, Tab. 13 NDP Gas 2020-2030

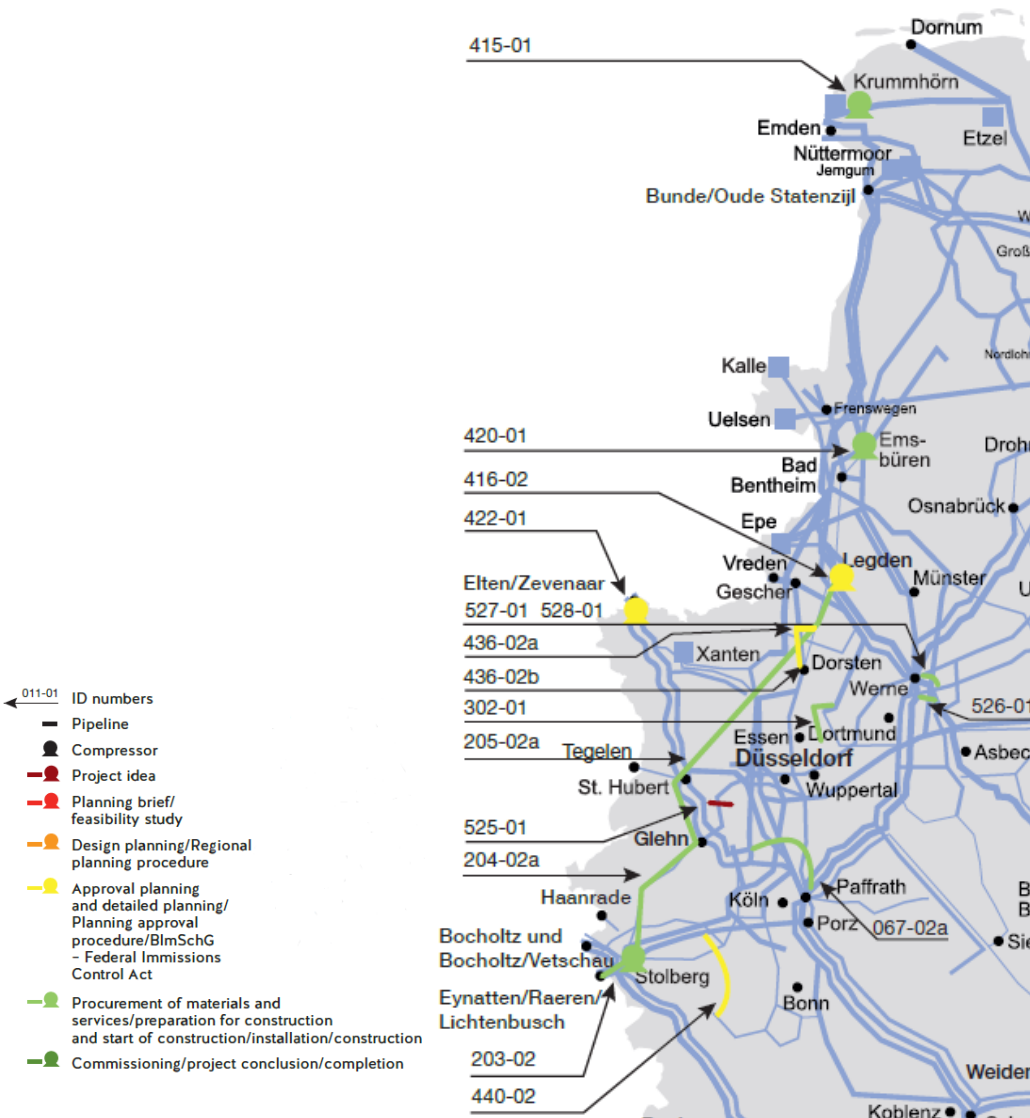
# Implementation status Gas NDP 2018-2028

- Pipelines, Germany
- Storage connections, international
- Storage facilities at transmission systems

- 011-01 ID numbers
- Pipeline
- Compressor
- Project idea
- Planning brief/feasibility study
- Design planning/Regional planning procedure
- Approval planning and detailed planning/Planning approval procedure/BlmSchG – Federal Immissions Control Act
- Procurement of materials and services/preparation for construction and start of construction/installation/construction
- Commissioning/project conclusion/completion



# Implementation status Gas NDP 2018-2028



- 067-02a Voigtslach-Pafrath pipeline
- 203-02 Würselen compressor station
- 204-02a ZEELINK 1
- 205-02a ZEELINK 2
- 302-01 Datteln-Herne pipeline
- 415-01 Krummhörn compressor station
- 420-01 Emsbüren compressor station
- 526-01 Hamm-Bergkamen pipeline
- 527-01 Stockum-Bockum Hovel pipeline
- 528-01 Merschhoven-Daberg pipeline
- 416-02 Legden compressor station
- 422-01 Elten compressor station
- 436-02a Heiden Marbeck-Heiden Borken pipeline
- 436-02b Heiden Borken-Dorsten pipeline
- 440-02 Erftstadt-Euskirchen pipeline
- 525-01 Willich-Meerbusch pipeline

Source: Transmission system operators, reporting date: 1 March 2020

# Implementation status Gas NDP 2018-2028



- 507-01b NEL pipeline connection
- 507-01a EUGAL transmission pipeline
- 507-02d Radeland II compressor station
- 501-02a Walle-Wolfsburg pipeline
- 507-01m Sayda compressor station
- 503-02b Embsen compressor station extension

- ← 011-01 ID numbers
- Pipeline
  - Compressor
  - Project idea
  - Planning brief/feasibility study
  - Design planning/Regional planning procedure
  - Approval planning and detailed planning/Planning approval procedure/BlmSchG - Federal Immissions Control Act
  - Procurement of materials and services/preparation for construction and start of construction/installation/construction
  - Commissioning/project conclusion/completion

Source: Transmission system operators, reporting date: 1 March 2020



# Implementation status Gas NDP 2018-2028

- 028-04a Forchheim-Finsing pipeline
- 036-04 Wertingen compressor station
- 312-02 MEGAL Rimpar compressor station
- 418-02 Scharenstetten compressor station expansion
- 112-03 Heilbronn connection
- 417-02 Northern Black Forest pipeline compressor station
- 449-02 Extension of Heilbronn (SEL1) connection
- 554-01 Hügelsheim-Tannenkirch pipeline
- 402-02a Wertingen-Kötz pipeline
- 552-01 Mittelbrunn-Schwanheim pipeline
- 555-03 TENP I pipeline link with TENP II



Source: Transmission system operators, reporting date: 1 March 2020



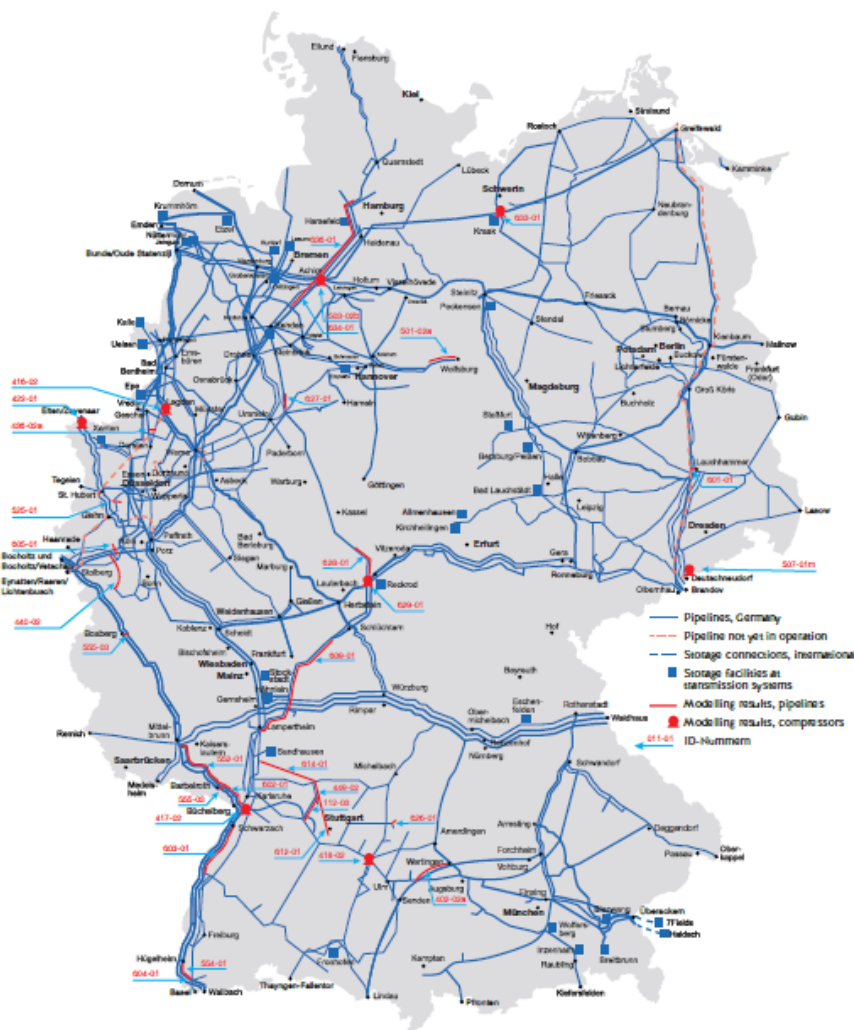
# Agenda

- Status of implementation compared with the 2019 Implementation Report
- Modelling results for base variant
- Network expansion proposal according to Gas NDP 2020-2030

# Modelling results for base variant

## Overview (1/2)

### Extension projects until the end of 2030



Source: Transmission system operators, Fig. 34 NDP Gas 2020-2030

### Changed requirements

- Additional capacity needs
  - DSOs, industry, power plants
  - Storage facilities
  - Cross-border IPs, VIPs, LNG
- L/H gas conversion

### Modelling results until the end of 2030

#### New pipelines:

- 743 km

#### Compressor stations:

- 205 MW

#### Costs:

- €3.3bn

# Modelling results for base variant

## Overview (2/2)

	Up to the end of 2025	Up to the end of 2030
Modelling result		
Compressor stations (additional capacity and necessary reverse flow)	205 MW	205 MW
Pipeline construction	741 km	743 km
Costs	EUR 3.3 billion	EUR 3.3 billion
Initial network measures		
Compressor stations (additional capacity and necessary reverse flow)	200 MW	
Pipeline construction	851 km	
Costs	EUR 4.5 billion	
Total result		
Compressor stations (additional capacity and necessary reverse flow)	405 MW	405 MW
Pipeline construction	1,592 km	1,594 km
Costs*	EUR 7.7 billion	EUR 7.8 billion

\* including GPCM stations, valve stations and other facilities

Source: Transmission system operators, Tab. 33 NDP Gas 2020-2030

# Agenda

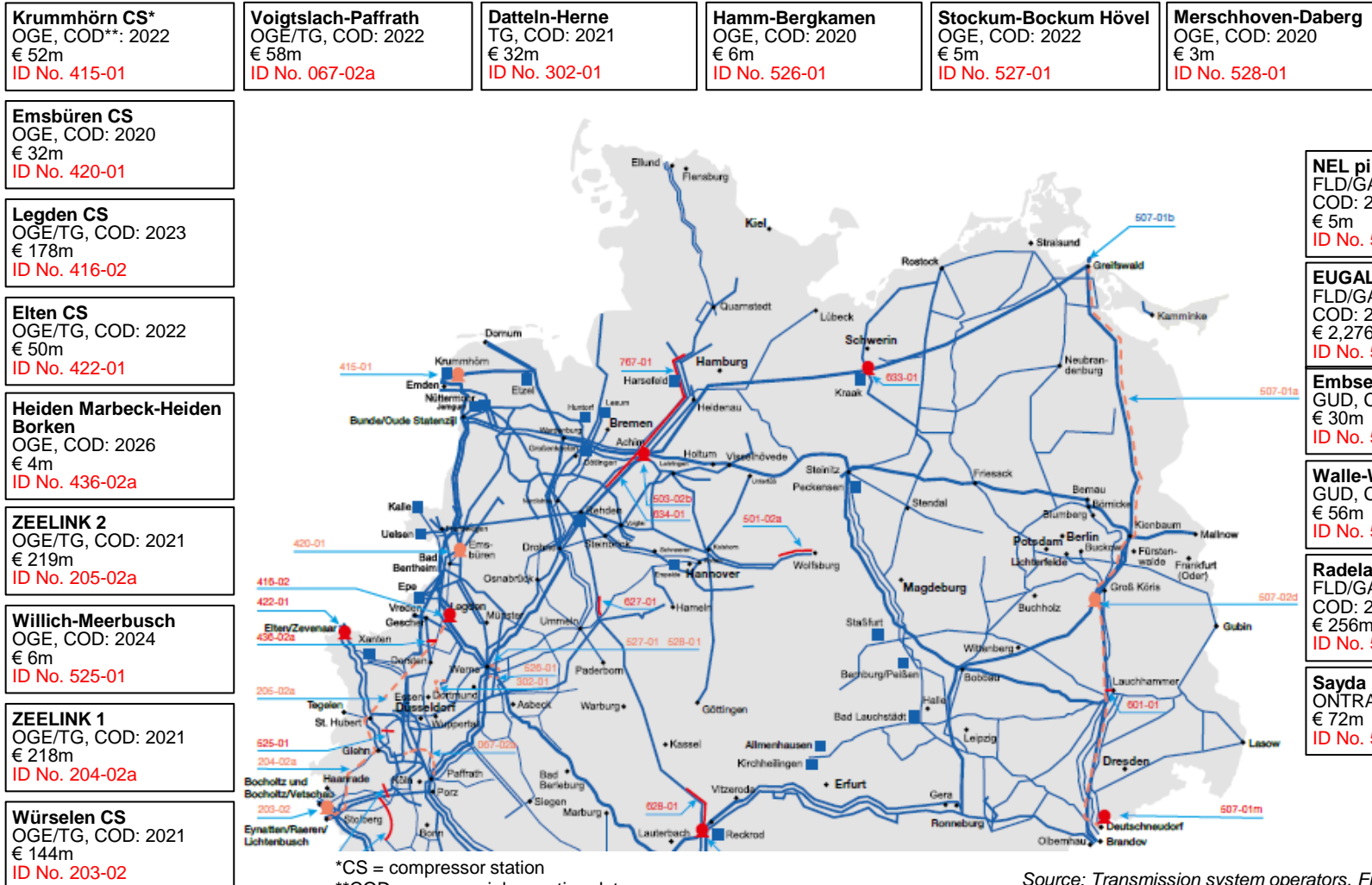
- Status of implementation compared with the 2019 Implementation Report
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# Network expansion proposal according to Gas NDP 2020-2030

- The network expansion proposal of the Gas NDP 2020-2030 is based on the 'green gas variant'
- The following slides refer to
  - Projects according to the Gas NDP 2018-2028
  - Additional projects of the base variant
  - Additional projects of the design variant
  - Additional projects of the green gas variant

# Network expansion proposal according to Gas NDP 2020-2030

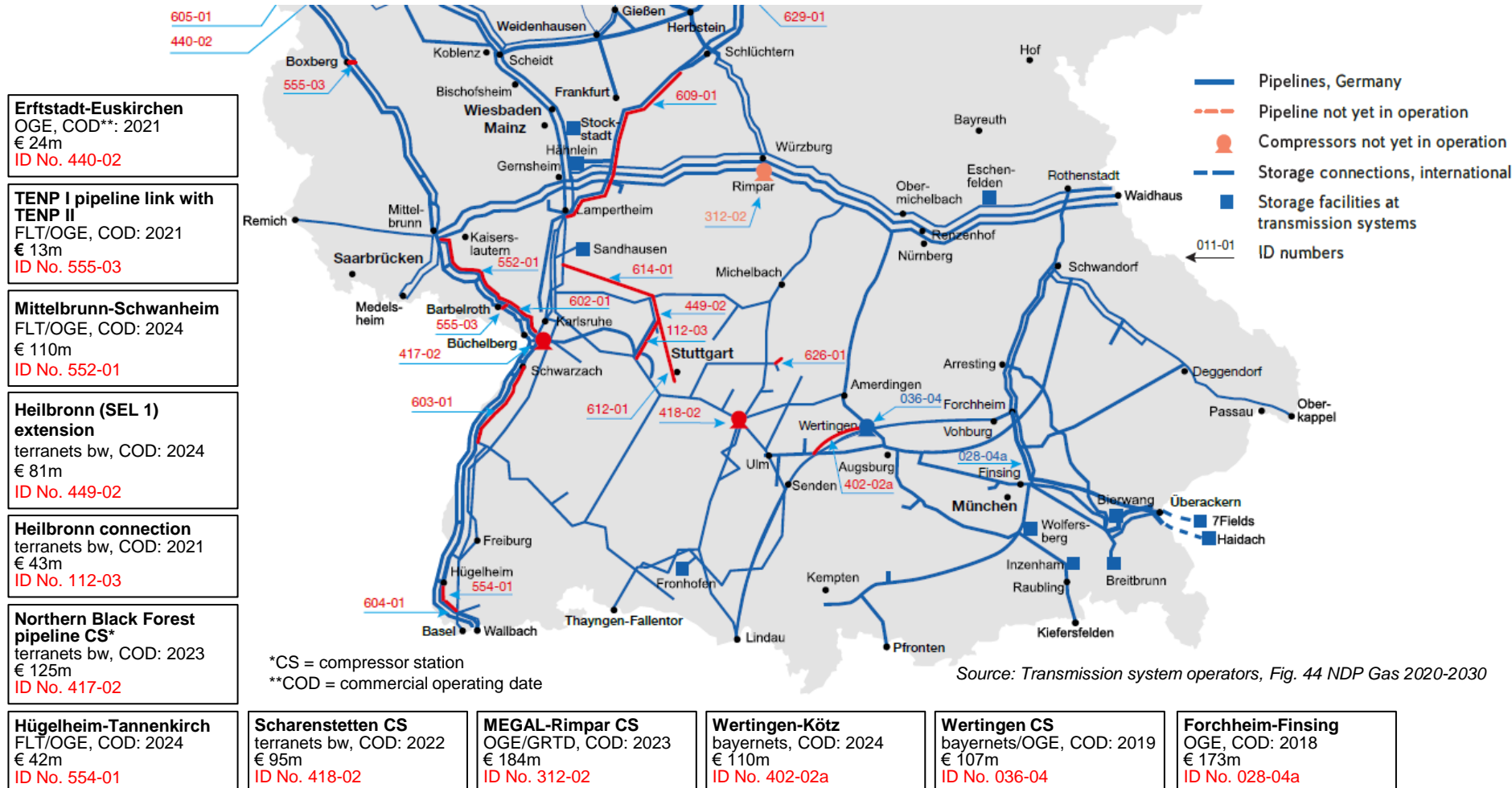
## Projects under the Gas NDP 2018-2028 (1)



Source: Transmission system operators, Fig. 44 NDP Gas 2020-2030

# Network expansion proposal according to Gas NDP 2020-2030

## Projects under the Gas NDP 2018-2028 (2)



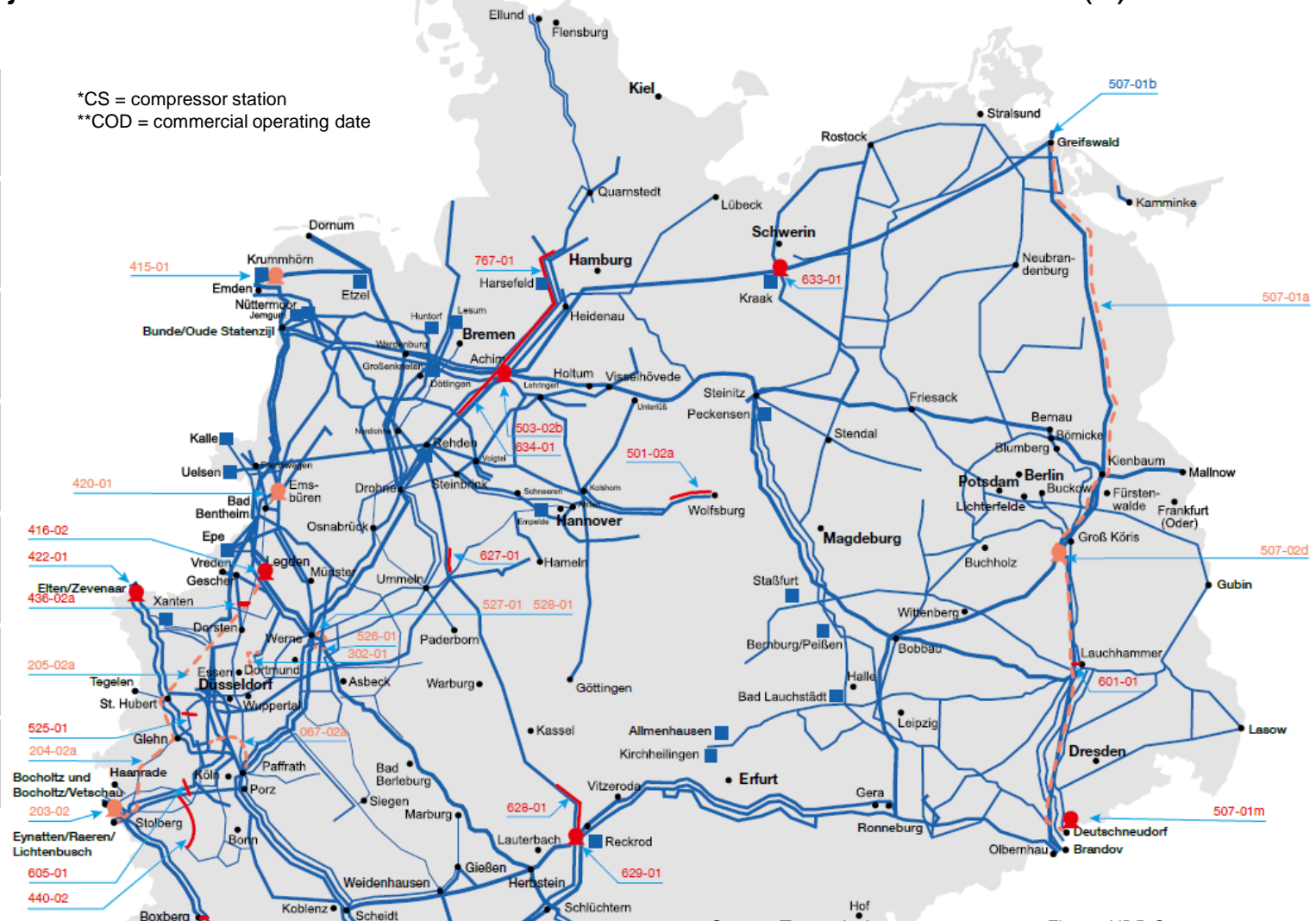


# Network expansion proposal according to Gas NDP 2020-2030

Additional projects other than those detailed in the Gas NDP 2018-2028 (1)

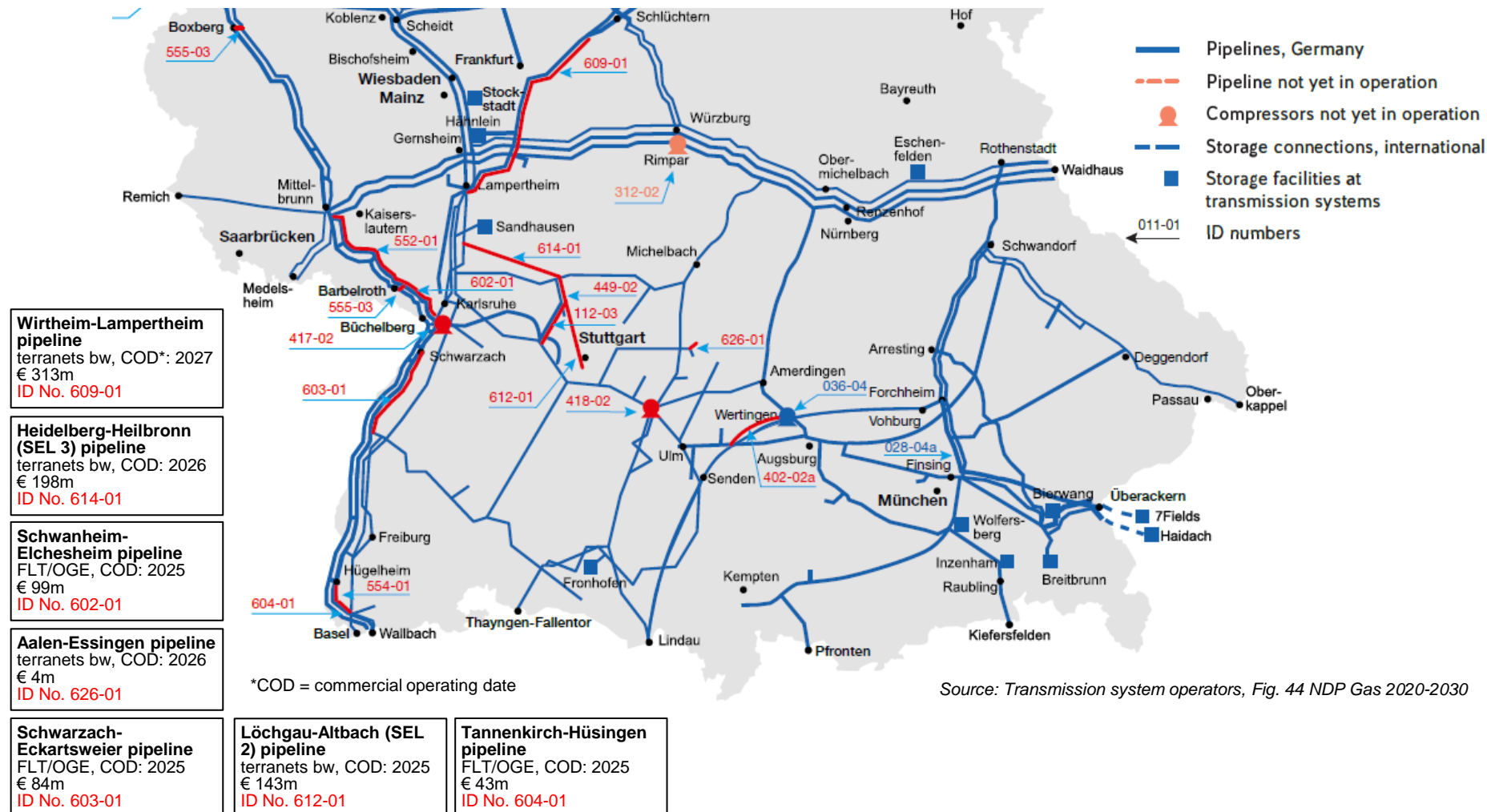
<b>NEL (Central) CS*</b> FLD/GUD/NGT, COD**: 2025 € 211m ID No. 633-01
<b>NEL West pipeline</b> FLD/GUD/NGT, COD: 2026 € 166m ID No. 634-01
<b>MIDAL Central North pipeline</b> GASCADE, COD: 2026 € 71m ID No. 627-01
<b>Lauchhammer GPCM station pipeline</b> ONTRAS, COD: 2021 € 1m ID No. 601-01
<b>MIDAL Central South pipeline</b> GASCADE, COD: 2026 € 125m ID No. 628-01
<b>Wesseling-Knapsack</b> OGE, COD: 2026 € 17m ID No. 605-01
<b>Reckrod CS</b> GASCADE, COD: 2027 € 195m ID No. 629-01

\*CS = compressor station  
\*\*COD = commercial operating date

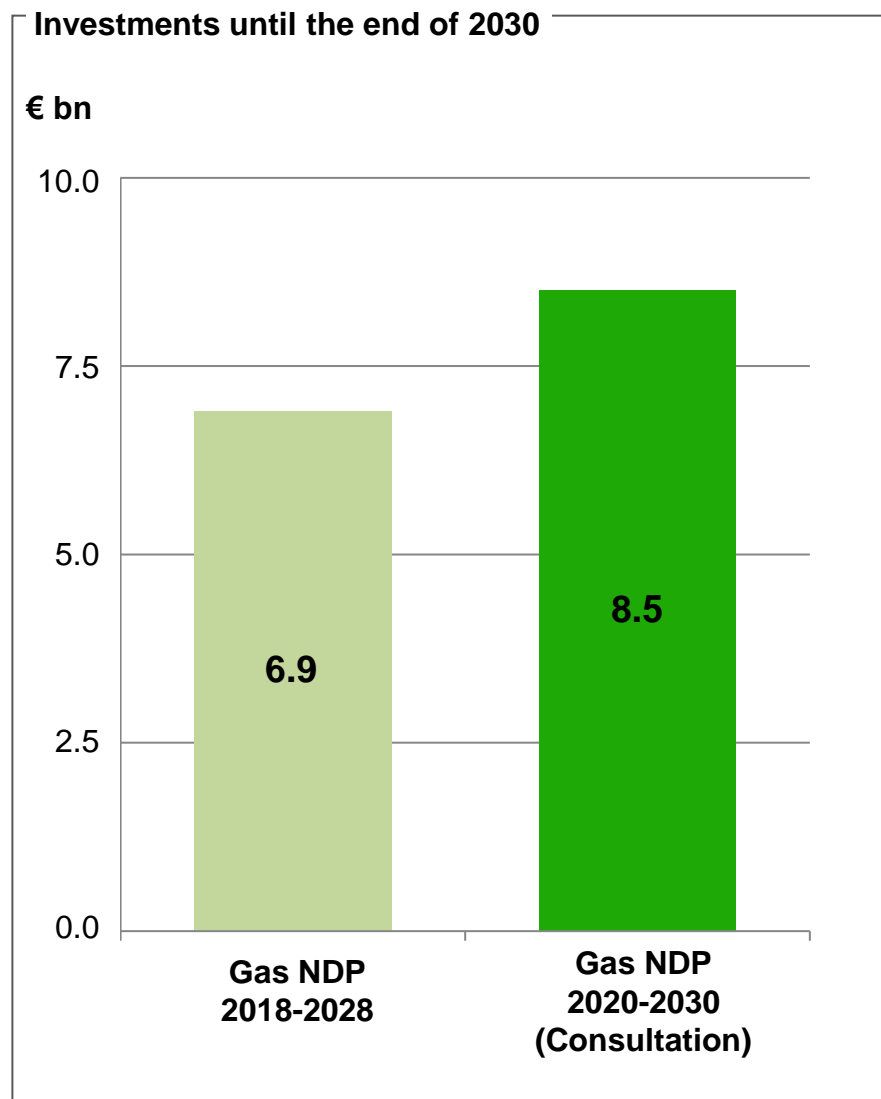


# Network expansion proposal according to Gas NDP 2020-2030

Additional projects other than those detailed in the Gas NDP 2018-2028 (2)



# Network expansion proposal according to Gas NDP 2020-2030



## Conclusion

- The **network expansion projects** of the previous NDPs are **confirmed**.
- The **main drivers** for the new network expansion projects are:
  - Gas supplies to Baden-Württemberg
  - Tie-in of the LNG facilities
  - Green gas expansion projects
  - Security of supply in the Netherlands
- **Investment proposal for about € 8.5 bn**  
The difference compared to the Gas NDP 2018-2028 is due to the following factors:
  - Projects put into operation (- € 1.2bn),
  - Projects not carried out (- € 0.1bn),
  - New projects for base variant (+ € 2.1bn),
  - New projects for green gas variant (+ € 0.7bn).
  - The market area merger costs will be determined with effect from 1 July

# Thank You

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