

INPUTS

Technical param.

For each pipeline
(e.g., high-pressure)

- Existing capacity
- Pressure level
- Year of construction
- Technical lifetime
- ...

Economic param.

For each pipeline
(e.g., high-pressure)

- Investment cost
- Year of amortization
- Weighted average cost of capital
- ...

Empirical data needs

For each node
(i.e., LAU level)

- Feed-in & demand
- Seasonal storage
- Spatial data
(e.g., shapefiles)
- ...

Optimization model

- Linear program
- Graph theory based
- High spatial resolution ($\sim 40\text{km}^2$ resolution)
- Decommissioning / Investment planning horizon 2025 to 2050
- Limited temporal dispatch resolution (monthly per year)

Outputs

Decommissioning and
refurbishment
investment decision
per pipeline

Decommissioning/
Investment decision

Utilization of pipelines
and gas demand
not supplied

Dispatch of the
network