



# Recompression of Gas During Pipeline Repair

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energy

New Orleans, November 2, 2010

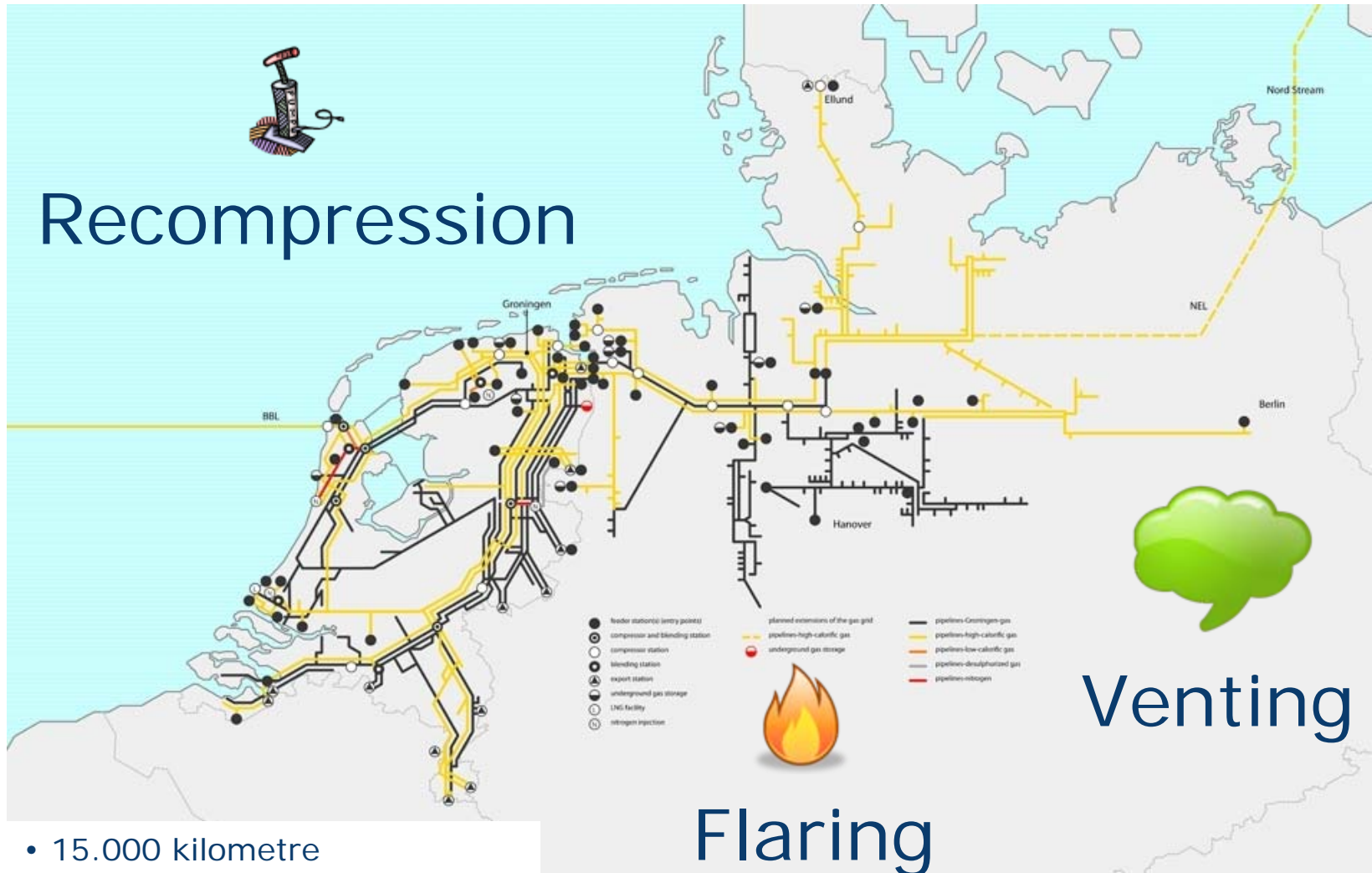
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Experience  
you can trust.

# Introduction



## Recompression

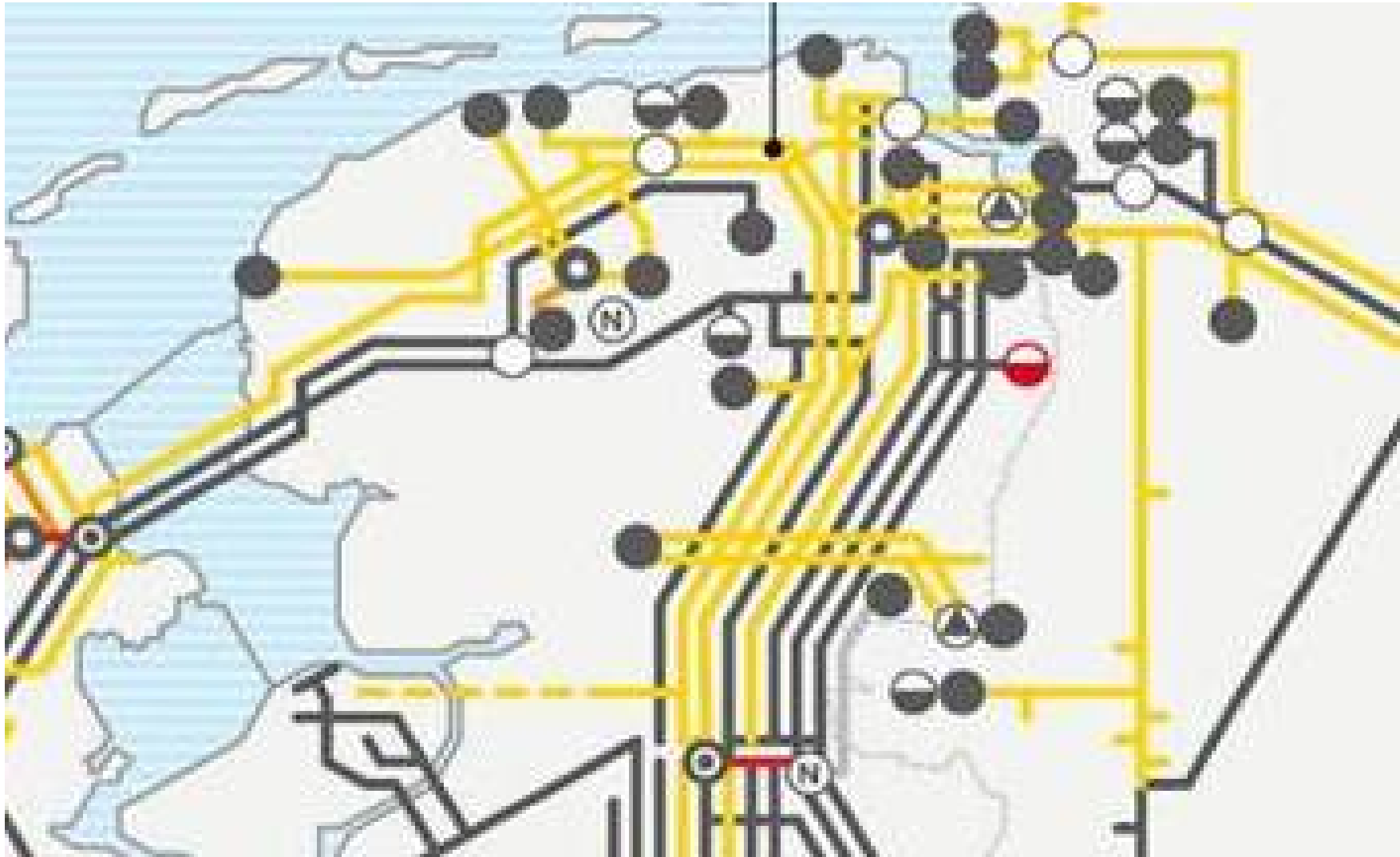


- 15.000 kilometre
- 18 compressor stations
- 125 bcm transported annually

## Flaring



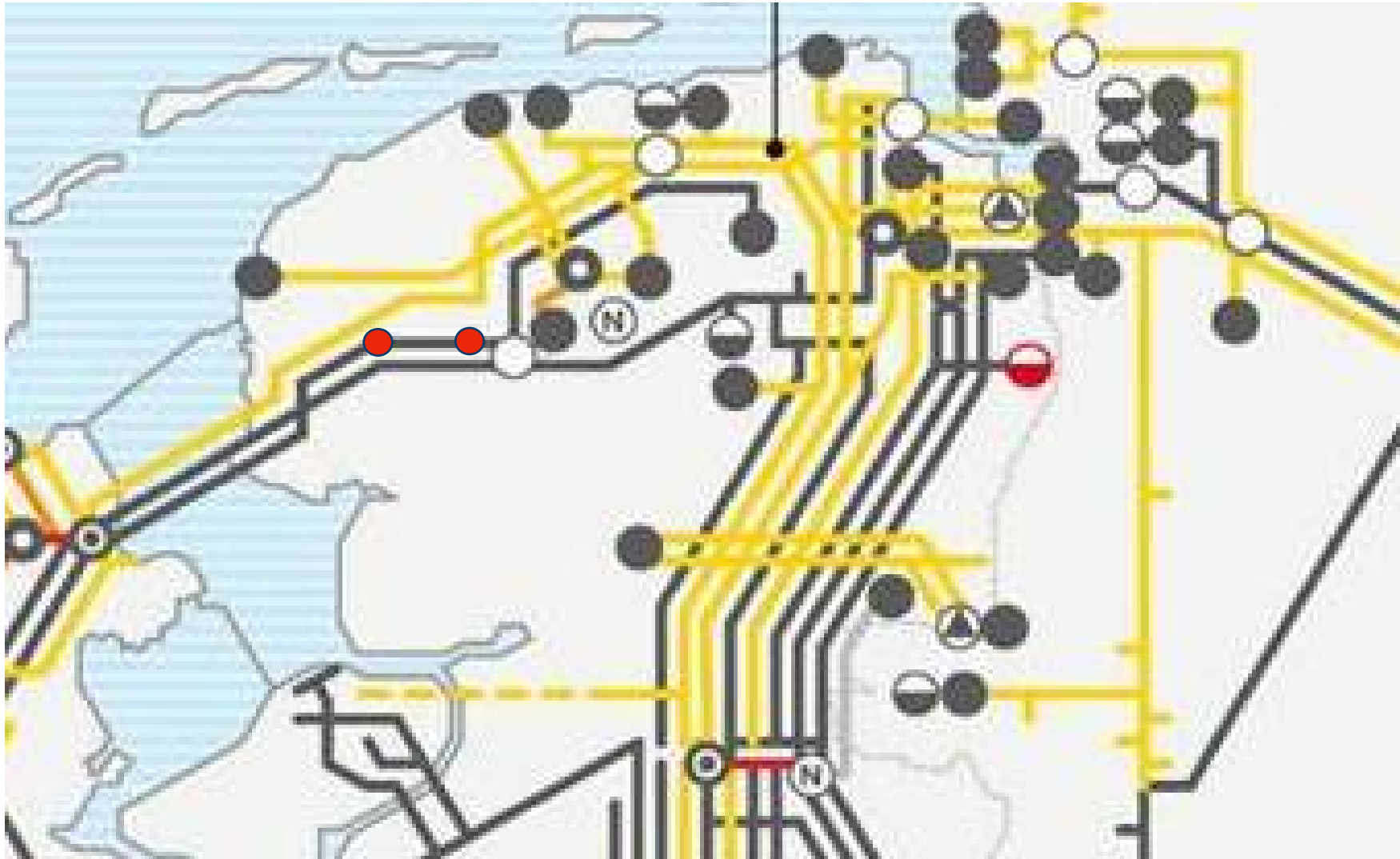
# What is Recompression?



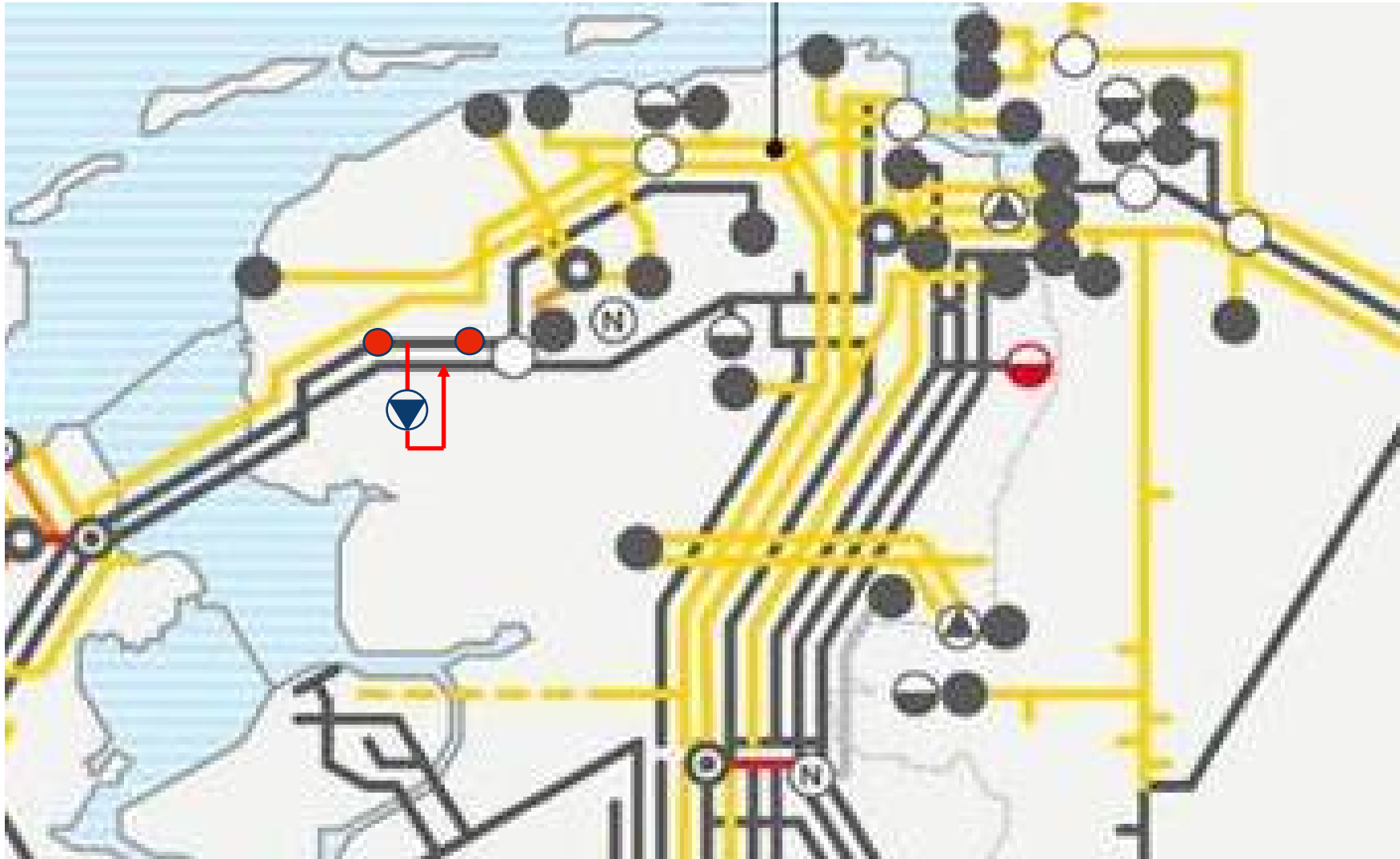
# What is Recompression?



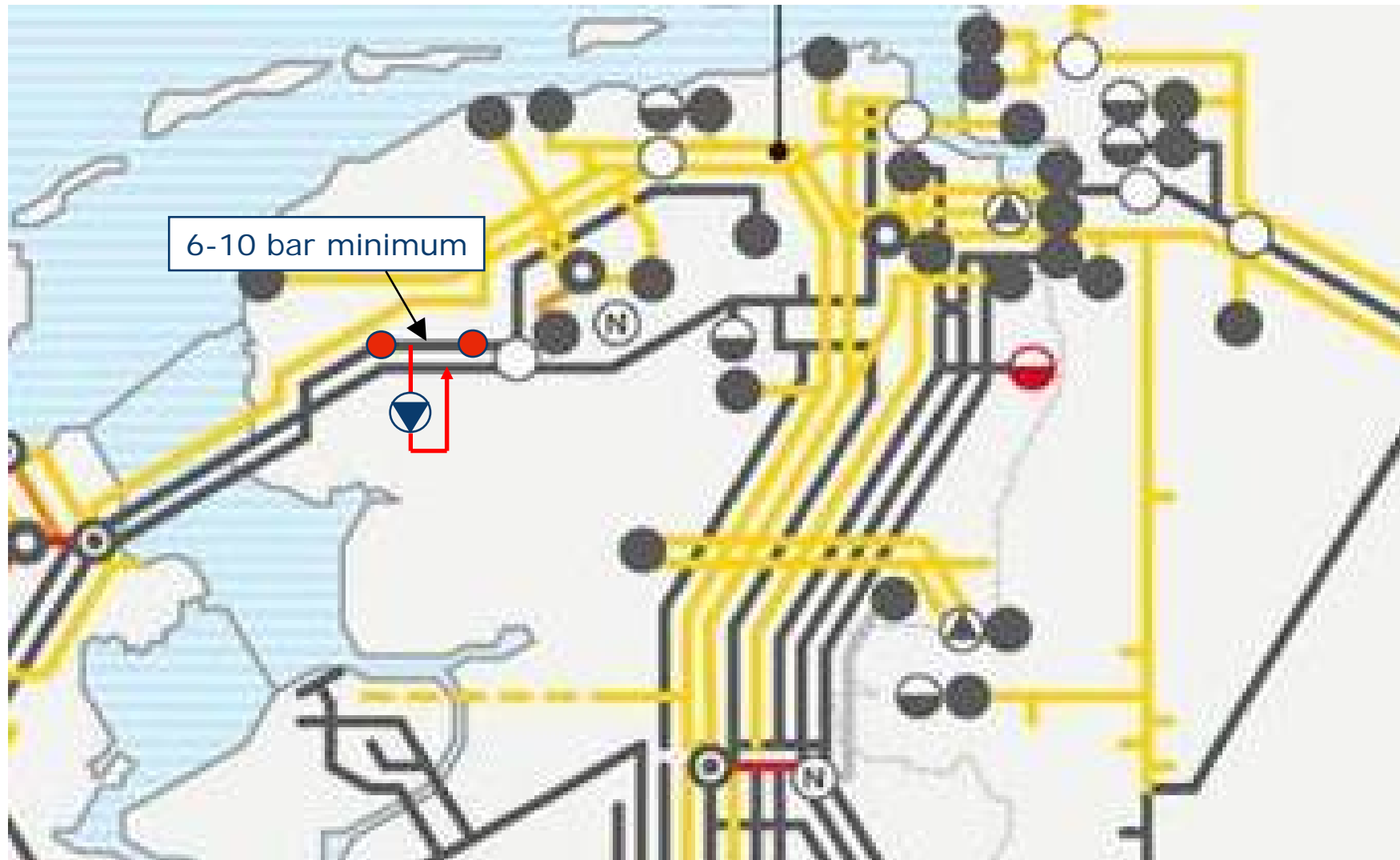
# What is Recompression?



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# What is Recompression?



# Why Recompression?

- Environmentally friendly
- Cost-effective
- Less waste of energy (commodity is saved!)
- Less CO<sub>2</sub> emission as with flaring
  - only CO<sub>2</sub> from flaring the residual gas and the fuel consumption of the compressor driver
  - together this is only 15% of the CO<sub>2</sub> emission produced by flaring all the evacuated gas



# Recompression at Gasunie

- Part of Gasunie's Footprint Reduction Program



- Program to reduce greenhouse gas emissions
- Gasunie awards €0.34 per  $\text{m}^3_{(n)}$ \* of avoided natural gas emission for business cases to stimulate footprint reducing developments

\* (price level 2009)

# Recompression at Gasunie

- Recompression is fully integrated in workflow and is considered for every gas evacuation job
- Whether to use venting, flaring or recompression to evacuate gas is driven by:
  - the time available
  - the cost involved
  - local legislation
  - practical feasibility
- 1 m<sup>3</sup><sub>(n)</sub> Natural Gas = € 0.24 (commodity price level 2009)
- 1 tonne CO<sub>2</sub> = € 25.00 (CO<sub>2</sub> trading price level 2009)

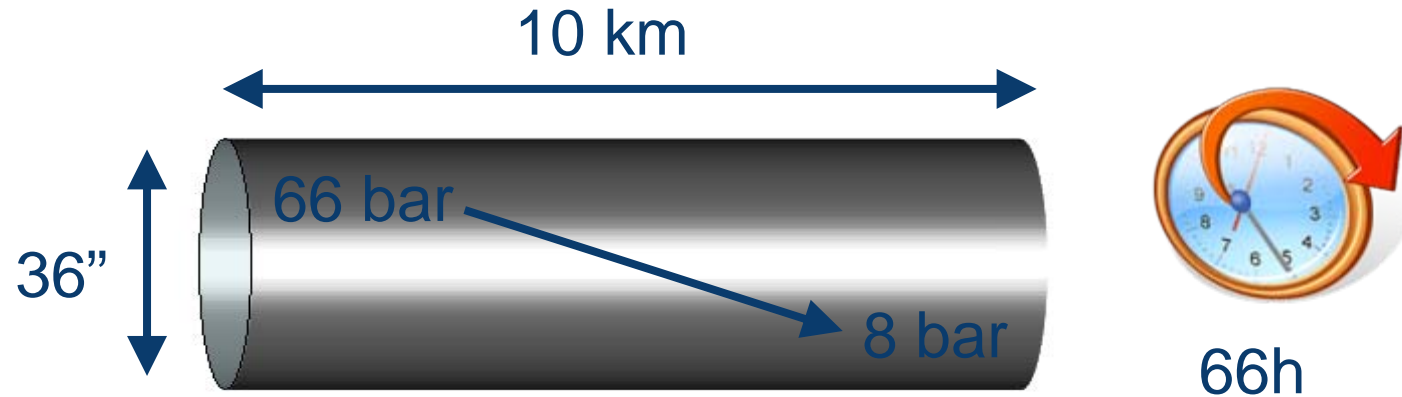
# Design Challenges

- Fuel flexible
- Easy to transport and install
- High pressure ratio
- Explosion proof
- Safe and easy to operate
- Autonomous operation

# What came out of the oven...



# Practical Example

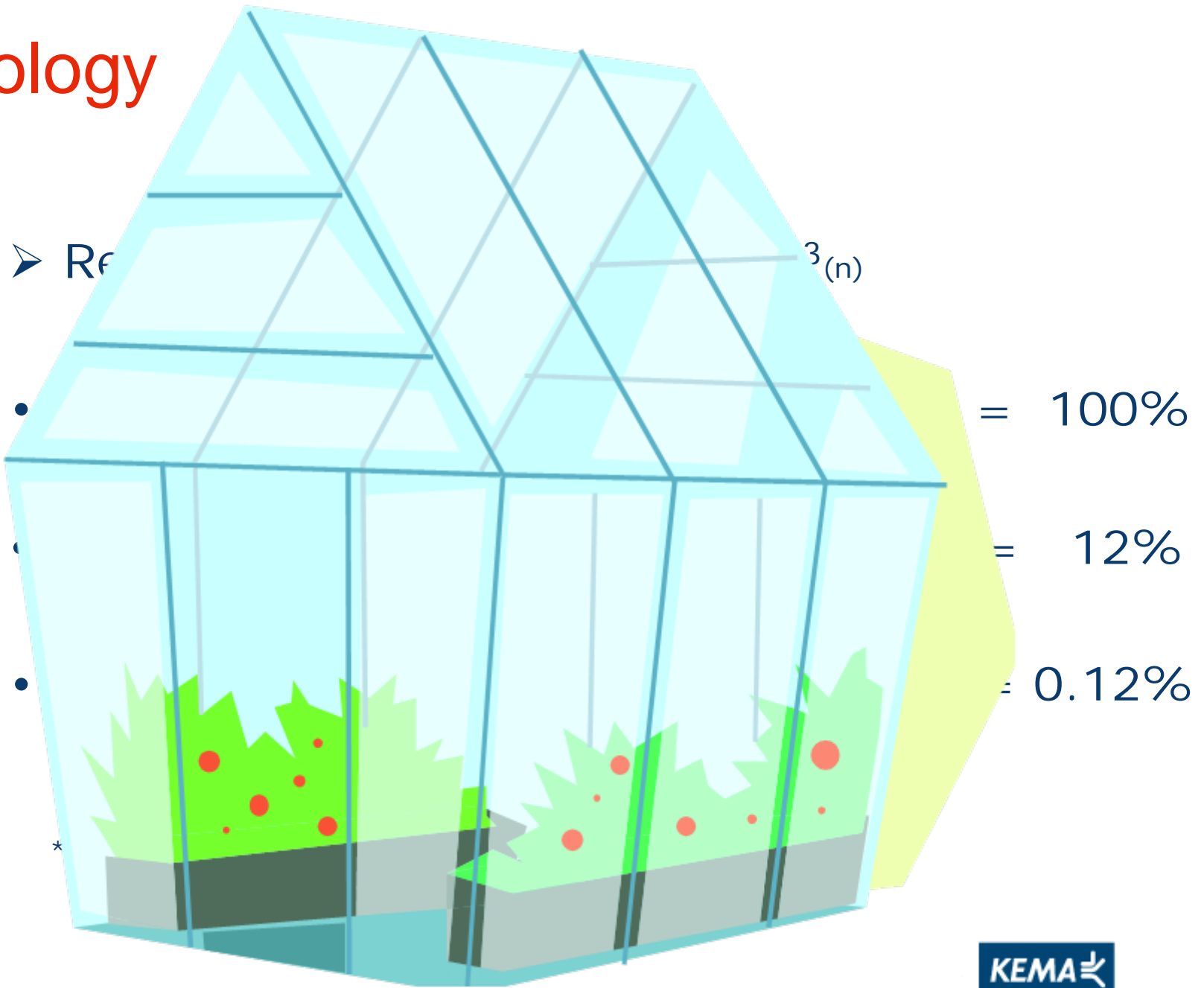


- Recompressed volume is approximately 360.000  $m^3_{(n)}$
- Connecting and disconnecting the unit takes a day each (typically)

# Economy

- CAPEX = 1.5 M€
- OPEX = ~ 10% of CAPEX (annually)
- 18 recompression jobs since 2006 until 2009
- 7.5M m<sup>3</sup><sub>(n)</sub> recompressed
- Revenu = 1.8 M€ (commodity value)
- Business Case value = 4.1 M€

# Ecology



# Conclusions / Perspectives

- Recompression is a double winner
  - Saving the environment
  - Saving money
- Gasunie recompression capacity expands
  - A second unit is about to be in operation





Thank you!

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