

# **Sweden – A Green Forerunner with Biogas**

**VAASA GAS EXCHANGE SEMINAR**

**2018-03-22**

# The Swedish Gas Association – 185 members



- Biogas incl LBG
- Vehicle gas
- LPG
- Natural gas incl LNG
- Hydrogen

Göteborg Energi



Gasum



STATOIL

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SWEDEGAS

FLO GAS



Perstorp



Industry



Transport



Shipping



Heat & Power



Distribution



Production

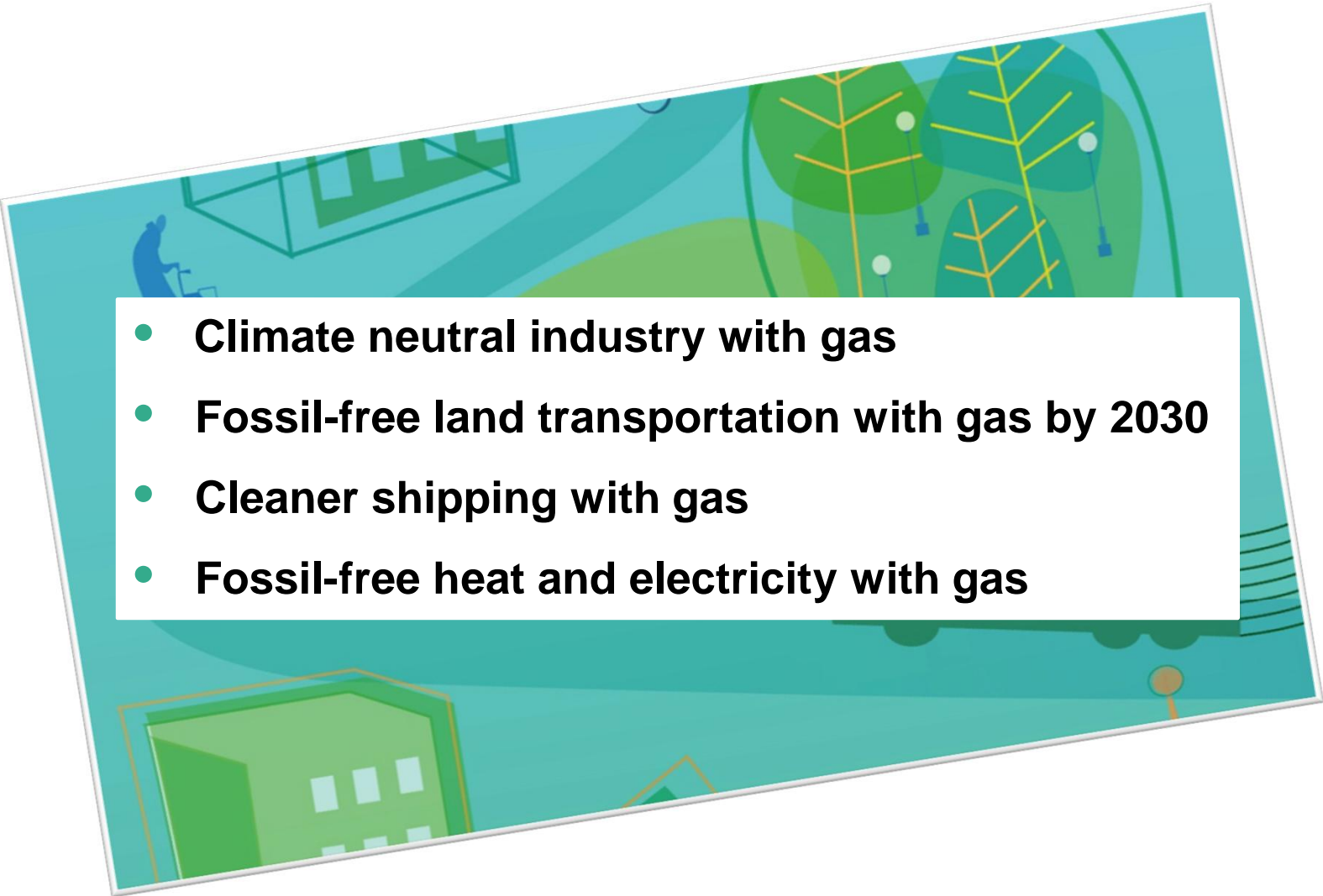
# The climate policy framework

- On Thursday 15 June, the Riksdag took a decision on the introduction of a climate policy framework for Sweden containing new climate goals, a Climate Act and plans for a climate policy council.
- By 2045, Sweden will have net zero emissions of greenhouse gases into the atmosphere and should thereafter achieve negative emissions.
- Emissions from domestic transport, excluding domestic aviation, will be **reduced by at least 70 per cent by 2030 compared with 2010.**



Foto: Melker Dahlstrand/Sveriges riksdag.

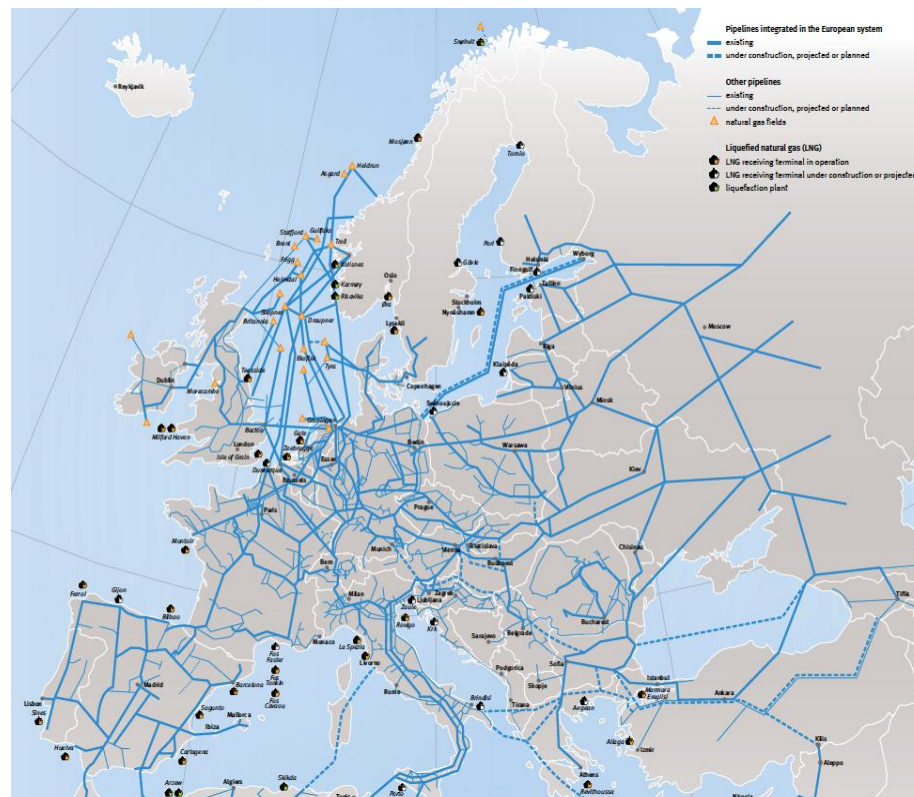
# A vision "Green gas 2050"

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- **Climate neutral industry with gas**
  - **Fossil-free land transportation with gas by 2030**
  - **Cleaner shipping with gas**
  - **Fossil-free heat and electricity with gas**



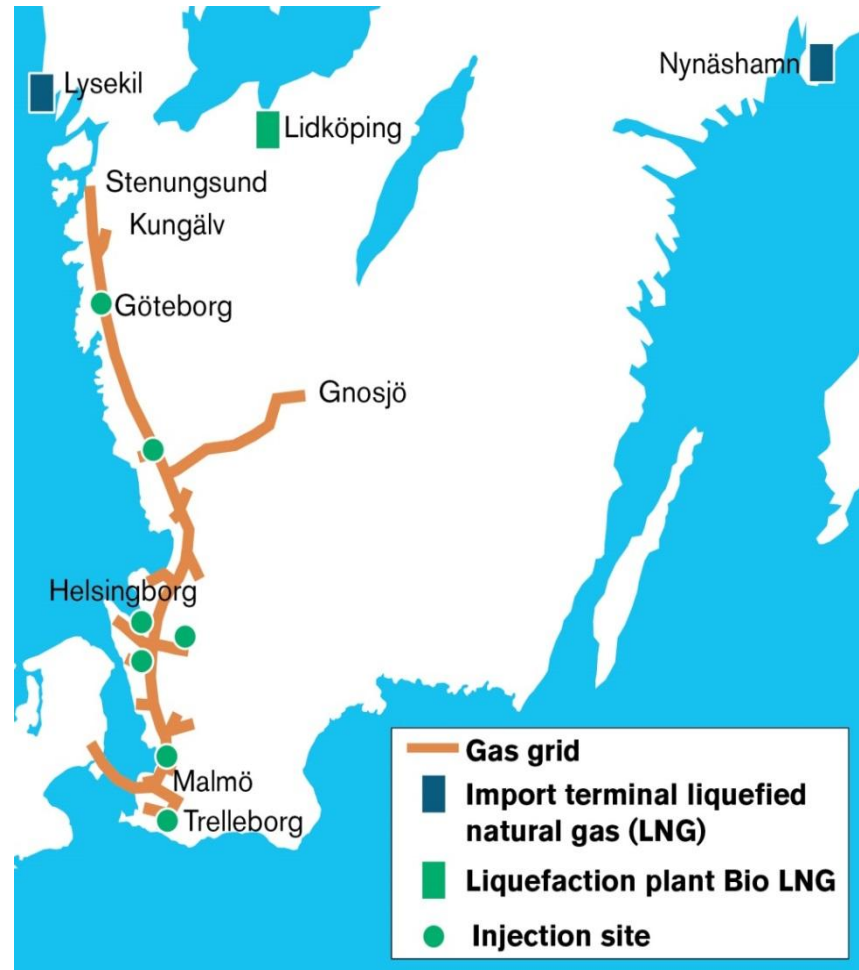
# Gas supply in Sweden

- Sweden – a small gas user in comparison
- Limited pipeline infrastructure for gas.
- Import of natural gas from Denmark/Europe and Norway (LNG).
- Developing infrastructure for biogas, CNG, LNG and LBG
- Transport sector important for the market.
- Growing interest for LNG in shipping.
- Growing interest for biogas in industry.

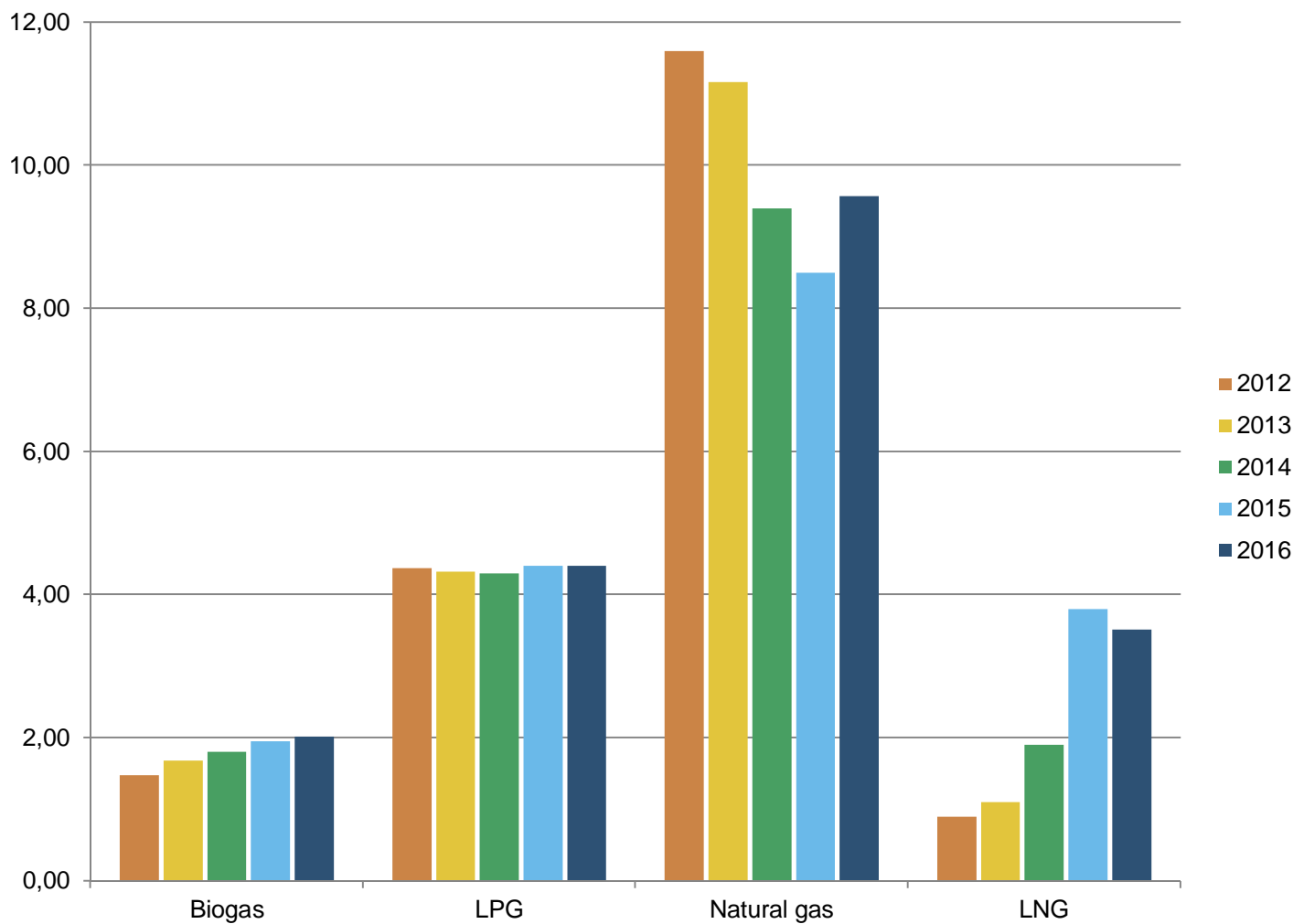


**"Vehicle gas"** = biomethane and natural gas  
**Biomethane** = upgraded biogas  
**LNG** = Liquefied Natural gas (cooled and compressed)  
**LBG** = Liquefied Biogas (cooled and compressed)

- Synergy effects – natural gas and biogas.
- Injection of biogas into the gas grid since several years.
- Standard for biogas in vehicle fuel, 86 % during 2017.
- "Green gas" concept makes it possible to swap natural gas and biogas.



# Delivery of gases in Sweden 2012-2016 (TWh)



# Sweden – a forerunner with biogas

- World leader in using biogas as a vehicle fuel
- The worlds biggest biogas driven vehicle fleet
- First country to use liquefied biogas (LBG) in heavy trucks
- First country to build a gasification plant to produce biogas from forest residues, GoBiGas

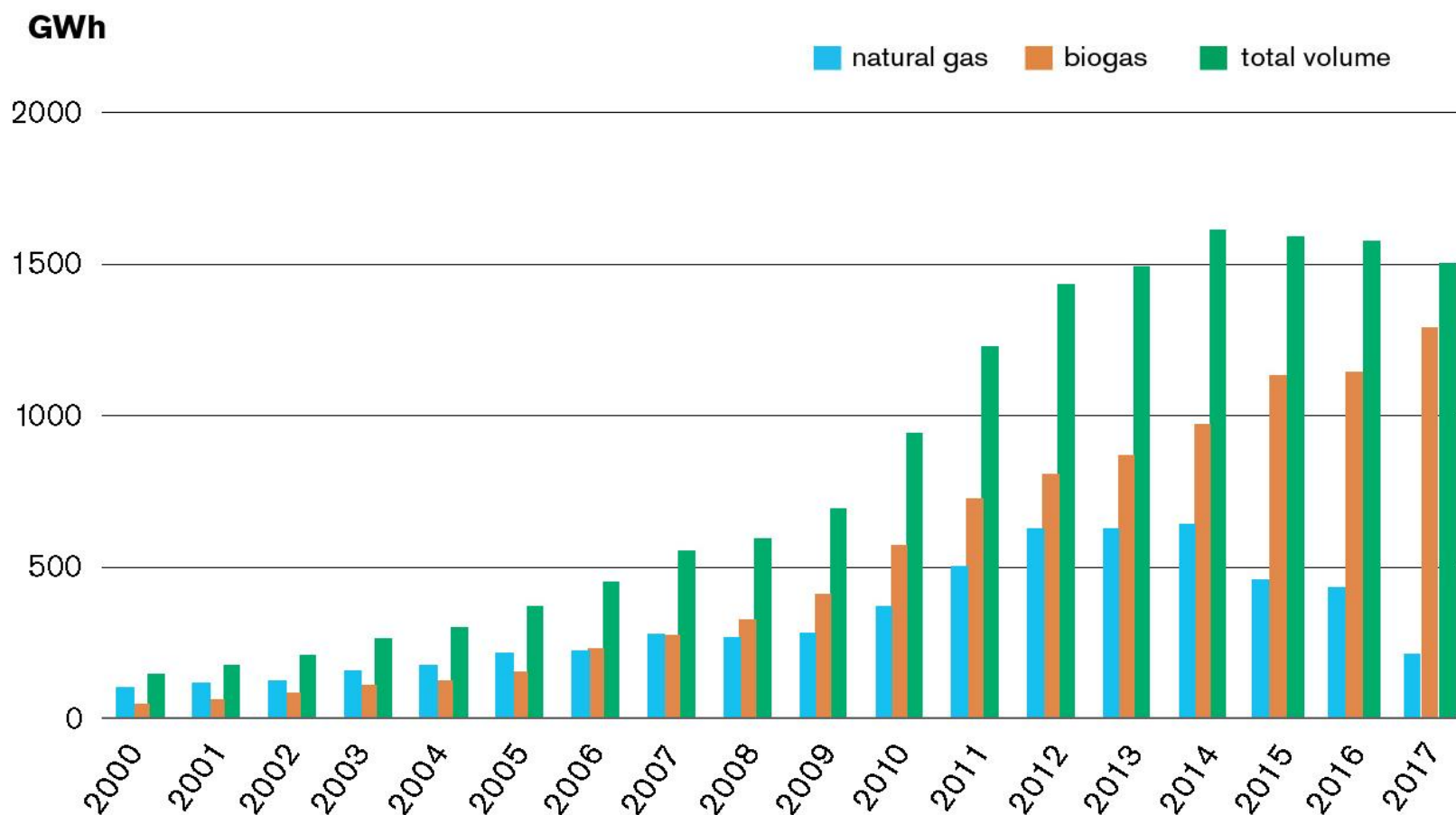


- International interest in waste management green technology, biogas production and utilization
- New jobs and export opportunities
- Increased self-sufficiency



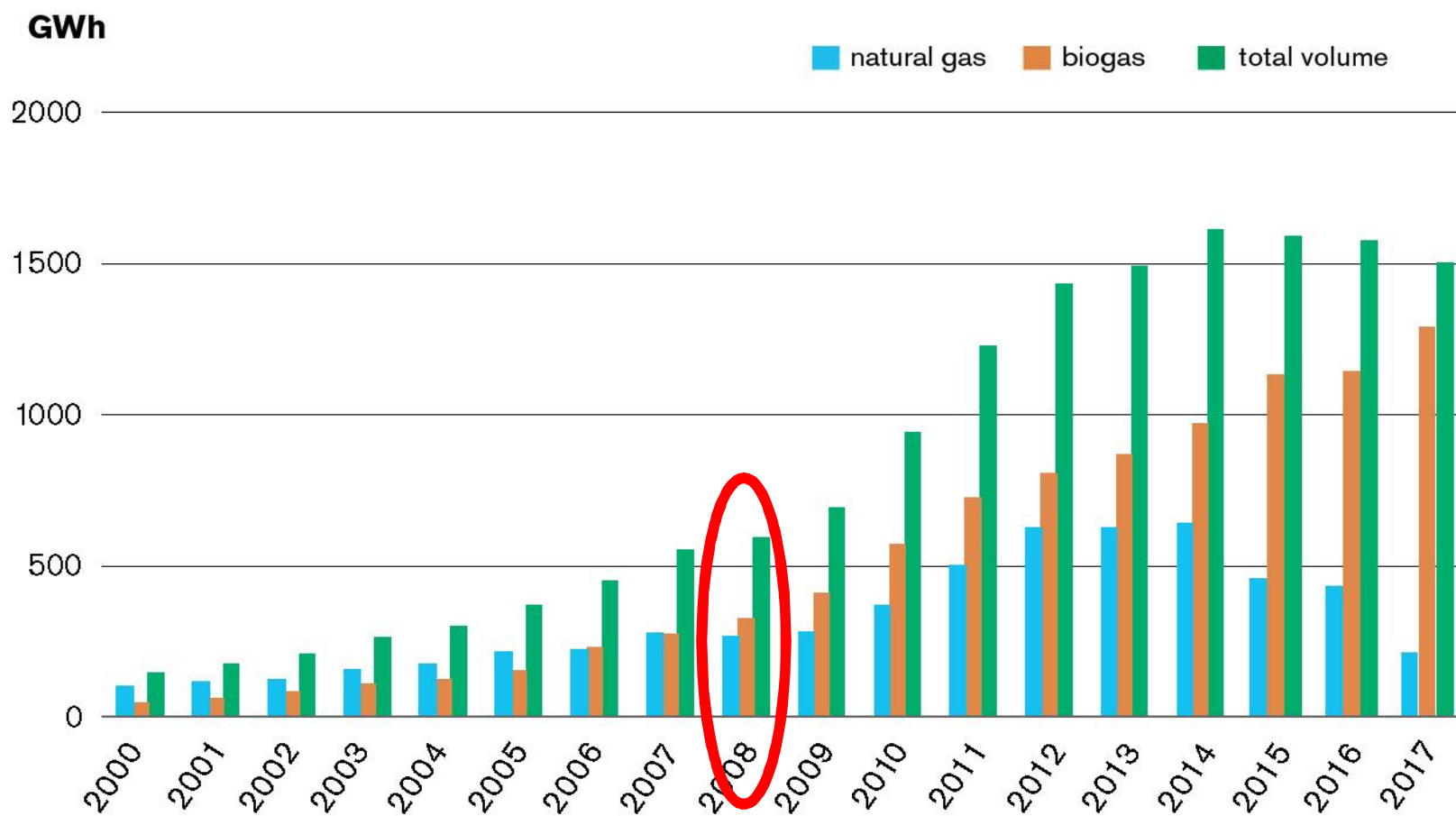


## Sold volumes of CNG and CBG in Sweden



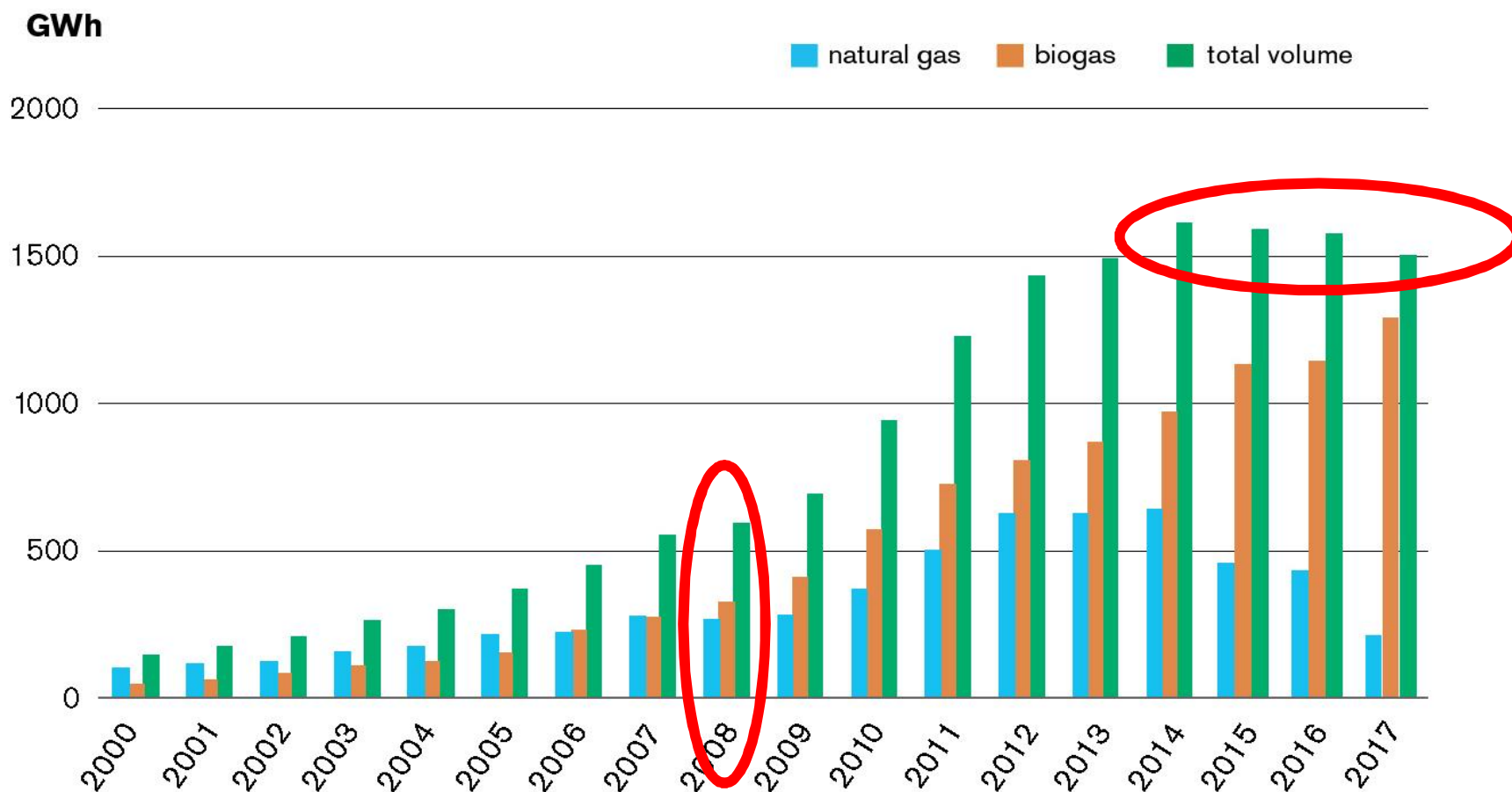
Source: SCB

## Sold volumes of CNG and CBG in Sweden



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Source: SCB





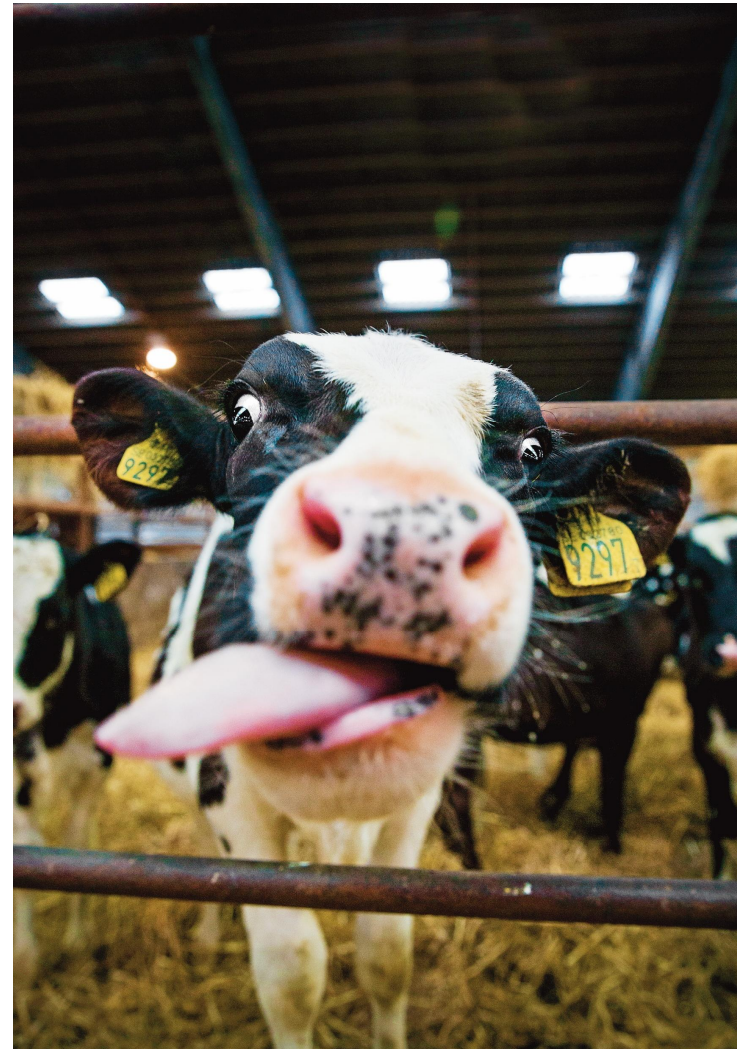
# Good news...

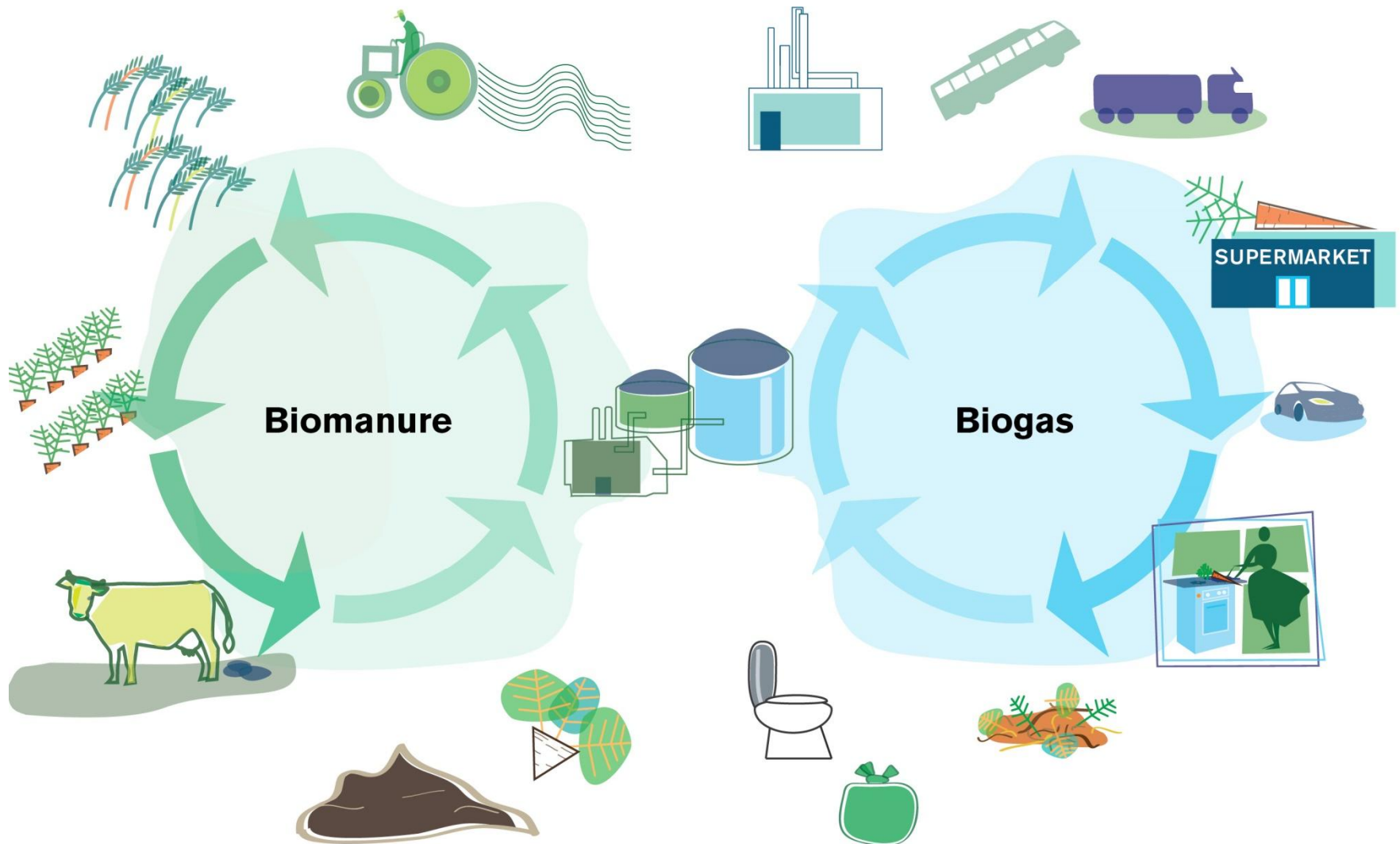




# Incentives today and in the future

- **Klimatklivet rewards biogas!**
- **Gödselgasstödet** – important for the agriculture and parts of larger scale production units.
- **Extension of the reduced benefit value positive.**
- **No tax on biogas until 2020. What happens then?**
- **New vehicle tax system with Bonus-Malus.**
- **RED II is important.**
- **The directive of infrastructure is important and could have made a difference.**
- **A new strategic plan for the transport sector was presented last year by the Swedish Energy Agency.**
- **New regulation for low emission zones on the way.**
- **Public procurement is very important!**





# Thank you for listening!

A stylized, colorful illustration of a coastal scene. It features a large blue ship on the water, a green building with a crane, a green bus, a person walking, and a sailboat. The background is a mix of blue and green hues with wavy lines representing water or wind.

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