

Country Report Sweden

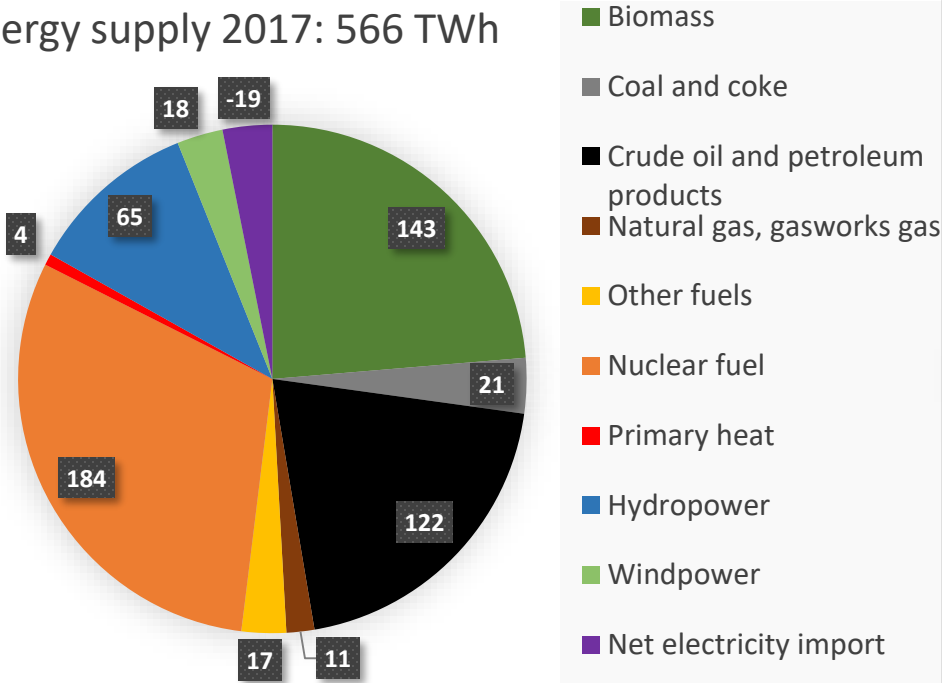
2019

Jonas Ammenberg

Task 37 meeting, May 2019, Tartu, Estonia

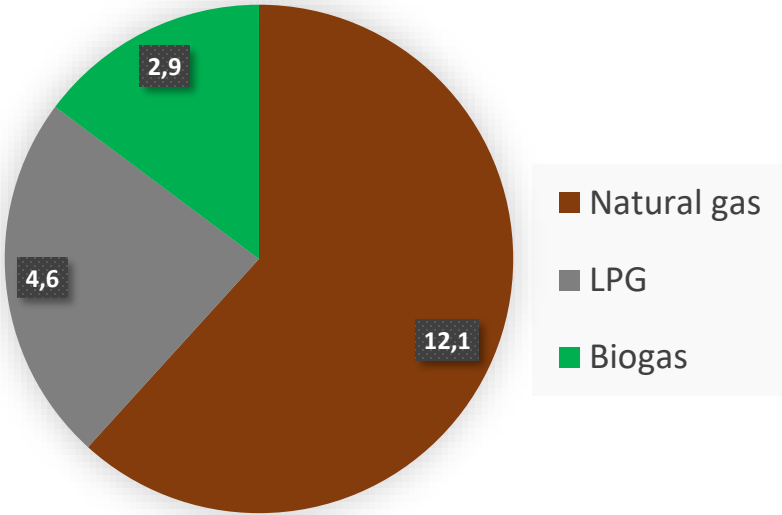
Energy supply & deliveries of energy gases, 2017

Energy supply 2017: 566 TWh



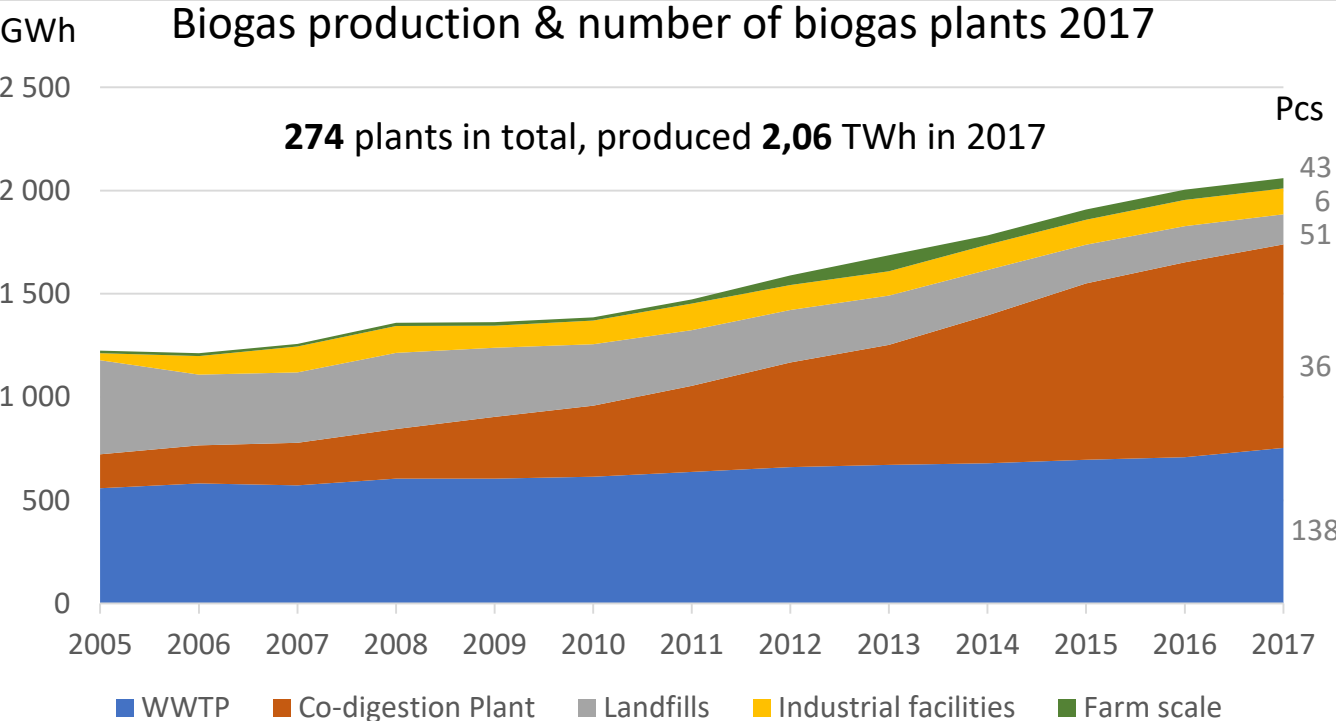
Source: Swedish Energy Agency, 2019. Energy in Sweden 2019

Deliveries of energy gases 2017: 19,6 TWh

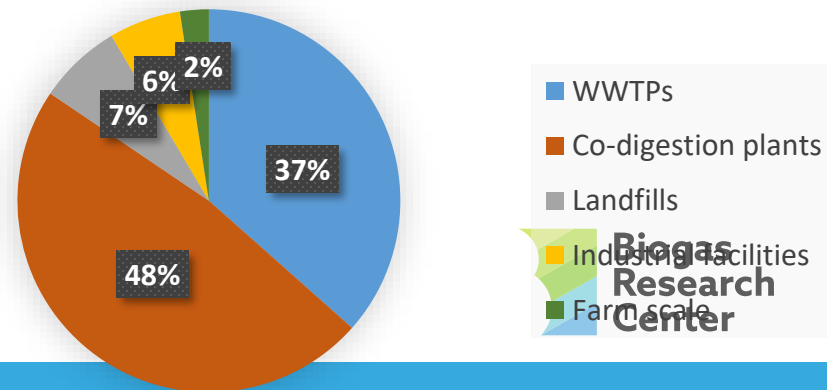


Source: Statistics from the Swedish Gas Association, 2018

Production of biogas, 2017



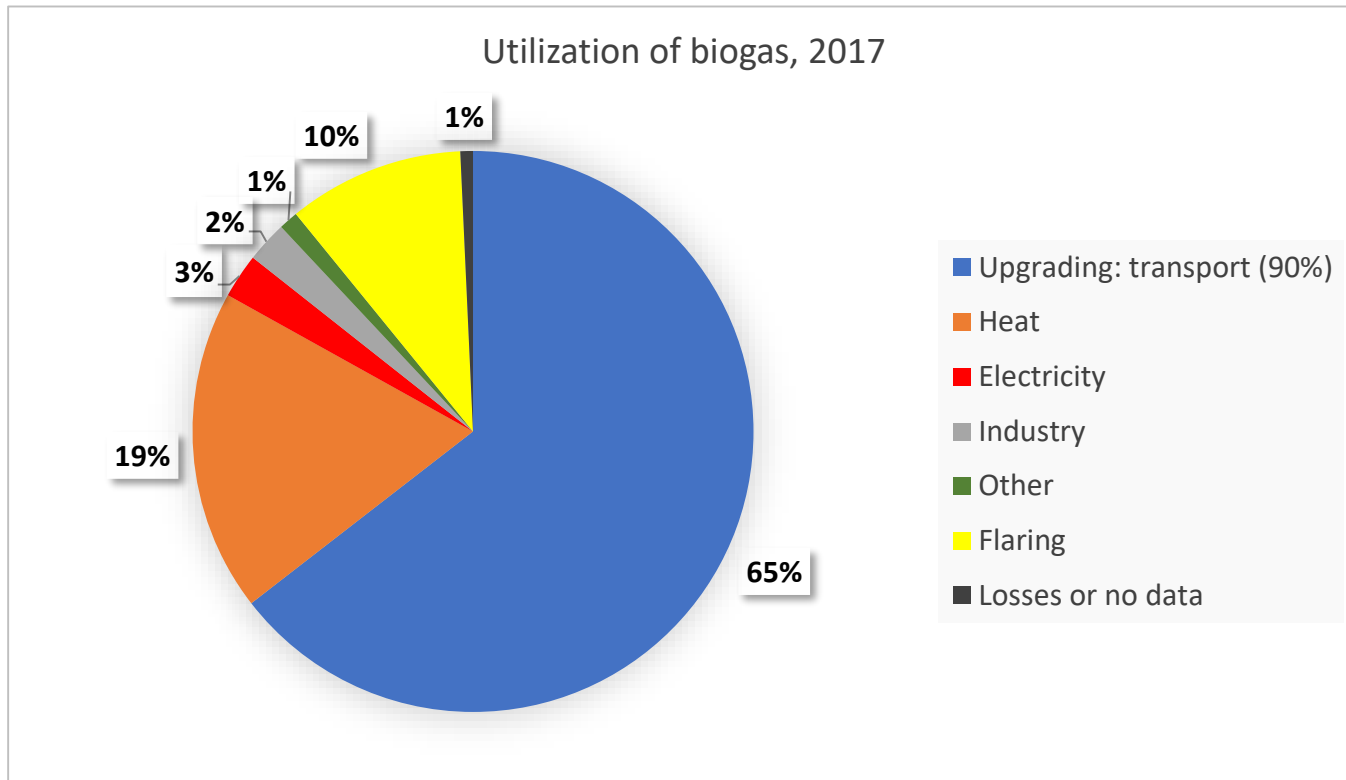
Share of production from different types of biogas plants



Source: Swedish Energy Agency and Swedish Gas Association

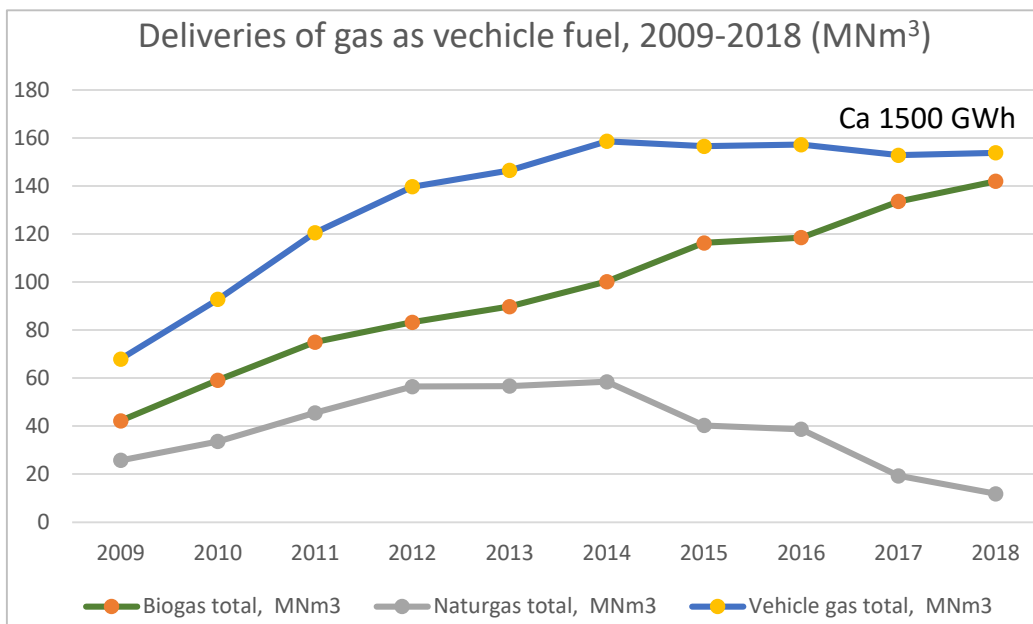


Utilization of biogas, 2017

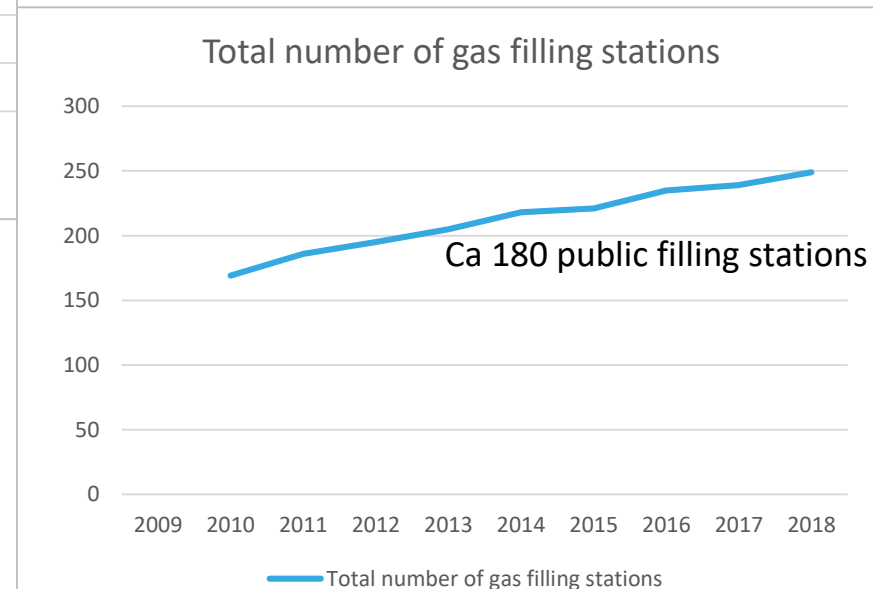


Source: Swedish Energy Agency and Swedish Gas Association

Development regarding gas as vehicle fuel



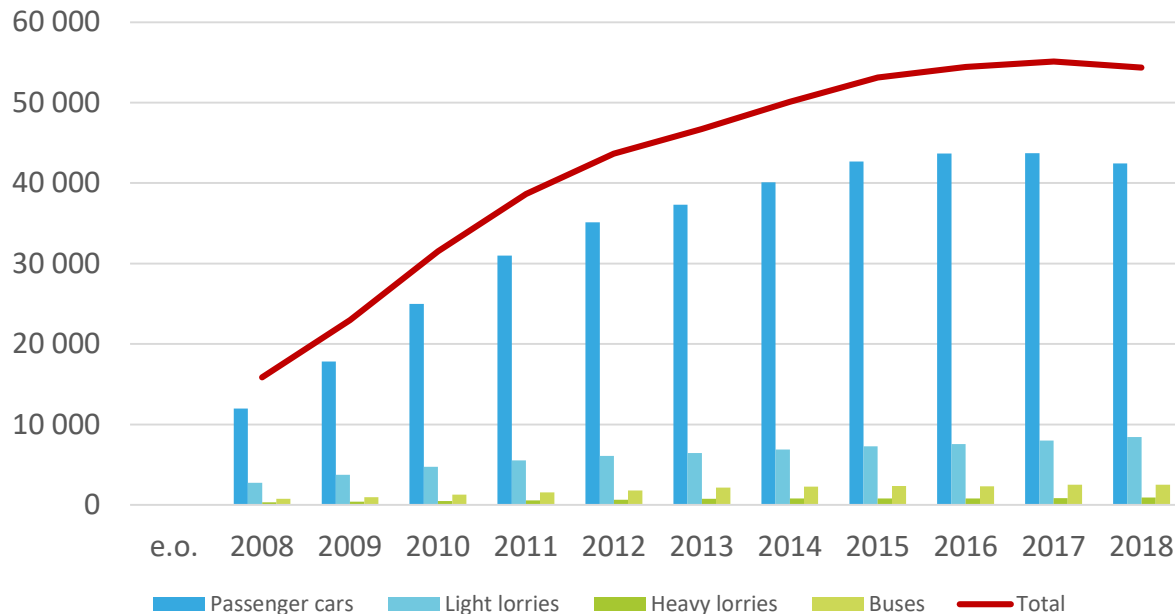
Source: Statistics Sweden (SCB)



More than 90% is biogas. Liquefied biogas (LBG) is entering the market (vehicles & fuels)

Development regarding gas vehicles

Gas vehicle development, 2008-2017



- Ca 55 000 gas vehicles:
 - ✓ 44 000 pass. cars
 - ✓ 8 000 light lorries
 - ✓ 2 500 buses
 - ✓ 850 heavy lorries
- A shift in focus to electric vehicles (EV):
 - ✓ Policy best for (EV), but ok for gas
 - ✓ Fewer good gas pass. vehicle models
 - ✓ Promising regarding HDV and LBG
- A large share of second hand gas vehicles sold to Finland & the Czech republic

Sources: Statistics Sweden (SCB) & Transport Analysis

Development

- About 30% increased use of biogas 2017 and 2018, mainly due to imported gas from Denmark. Double subsidies → prices similar to natural gas for heating/industry
- Examples regarding new plants:
 - E.ON in Högbytorp – dry digestion of food waste, ca 60 GWh/year (Hitachi Zosen Inova). Similar plant to be built in Jönköping next year
 - Rena Hav in Sotenäs – biogas in marine biorefinery context
 - Stora Enso in Nymölla – biogas at a paper mill, 75-90 GWh LBG per year (Gasum)
 - Most development on the larger level
- New gas lorries (Scania and Volvo, +400 hp, with different techniques (otto, diesel))
- About 40-50 LBG filling stations in 2020
- LBG investments (production and filling stations). *Drive LBG*; ca 20 million USD to LBG innovation cluster with a focus on demonstration

Policy

- Governmental Support for Local Climate Investments is important
- Examples of long term climate and energy goals:
 - Climate neutral energy sector 2045 of which at least 85 % GHG emission reduction in Sweden. From 2045 negative emissions.
 - 100 % renewable electricity production 2040
 - 63 % GHG emission reduction in non-EU ETS sector in 2030 and 75 % 2040 comp. to 1990
 - 70 % GHG emission reduction in domestic transport (excl. aviation) 2030 compared to 2010. Climate neutral 2045.
- New and coming policy:
 - Bonus-malus (cars with low CO₂ emissions get a bonus, while cars with high CO₂ emissions get a punitive tax. EV highest bonus)
 - Municipal environmental zones – gas vehicles allowed in the most restricted zones (zone 3)
 - Enquiry into market conditions for the Swedish biogas sector;
 - Report by the end of 2019. Probably EU harmonization (production support, instead of tax exemption for users)
 - Swedish Energy Agency investigates national biogas registry (guarantees of origin or certificates, etc.)
- Sector visions and strategies



www.biogasresearchcenter.se