



Standardisation of biomethane and gas quality: a matter of control

EXPERIENCES FROM THE NETHERLANDS
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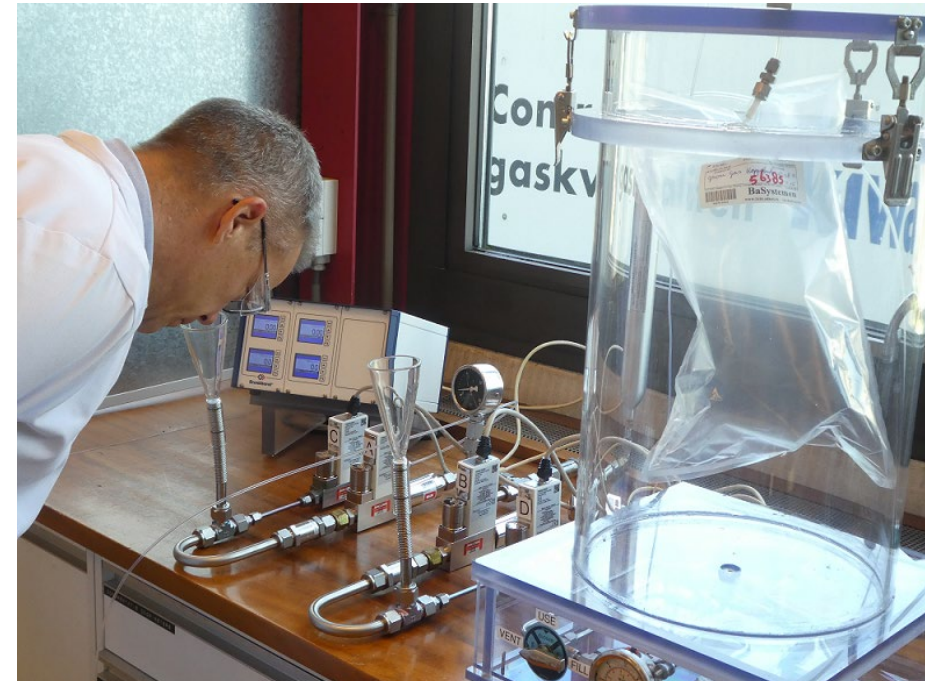


Current biomethane landscape in the Netherlands

- **About 60 injection plants**
- Yearly volume $200 * 10^6 \text{ m}_n^3$ a year
- Varying from small ($20 \text{ m}_n^3 / \text{y}$ to large $4000 \text{ m}_n^3 / \text{y}$)
- 2 have access to distribution (8 bar) as well as transport grid (40 bars)
- Some delivery points can face 100% biomethane , so quality has to be in order!
- **Gas quality is a Governmental decree** and is therefore followed instead of EN 16723 – Part 1
- Most critical gas quality limit values:
 - $\text{Si} < 0.1 \text{ mg} / \text{ m}_n^3$
 - Wobbe 43.46- 44.41 MJ/m³
 - CO₂ limited by flame index (flame blow off prevention)
 - Gas may not contain contaminants that hamper smelling the odorant

Main practices on control

- Assessment on quality procedures conform a protocol before start up:
 - Calibration procedures
 - Control software (alarm levels etc.)
- Gate keeper (every minute) plus data transfer to grid owner
 - All main components plus H₂S
- Start up:
 - Approval by grid owner after 24 hours monitoring (flaring) upon start up by ext. party
 - 30 days monitoring of injection by ext. party after approval
- Two times a year gas sampling on all components by ext. party
- Every month test on odorant level and smell by ext. party



Experiences on smell are most critical

- Critical components:
 - Terpenes (limonene, cymene,)
 - Butanone
 - H₂S
 - Other sulphurous components
- **Strict preventive measures and control can lead to an uptime of > 8000 hours:**
 - Be strict in control ! **There is always a solution possible.** Don't hesitate as a grid owner to close the valve on repeated failure
 - Control regularly (at least once a month)
 - Biomass input control (by producer)
 - Imply technical measures (by producer):
 - Terpene analyser just after the coal bed in order to switch the coal bed on time (by producer)
 - THT control can be improved and should be monitored
 - Change coals bed filters on time



THANKS FOR ATTENDING!