BOHR – NEW BIOGAS/BIOMETHANE MEASUREMENTS

INCREASING RENEWABLE GAS INJECTION TO GRID (AND UTILISATION)



WHAT LIMITS TOTAL RENEWABLE GAS INJECTION TO GRID?

- Production Volume (Supply)
- Grid Capacity and Energy Consumption (Demand)
 - Note: some of what is injected today is [fossil] propane gas, NOT renewable gas
- Operational Issues (Delivery)
- Legal and Commercial Issues
 - Including billing

WHAT ROLE DOES MEASUREMENT HAVE?

- Production Volume (Supply) → AD Process monitoring and data feedback to optimise production conditions
- Grid Capacity and Consumption (Demand) → Data around capacity and calorific value affect injection
 - Note: some of what is injected today is [fossil] propane gas, NOT renewable gas → Measurement data can be used to drive upgrading process (reduce inerts to boost calorific value of biomethane and therefore reduce propane requirement). In simple terms: Less inerts + Less propane = More biomethane
- Operational Issues (Delivery) → Digestor operational data (self, and impact on upgrader), Upgrader operational data (self, impact on digestor operation, impact on grid injection unit), Injection unit (impact on upgrader, impact on digestor). In simple terms: an interdependent ecosystem
- Legal and Commercial Issues → Measurement can be used to periodically or permanently demonstrate operational, safety, and environmental compliance (on top of making everything work)
 - Including billing → Measurement is one avenue to solve the billing issue to allow more renewable gas in the networks (well, technically it's 2.5 out of 4 avenues toward opening up the opportunity to inject more freely)

Image: wikipedia.org

WHAT'S OUT THERE?

- Raw biogas analysis
 - Inform and optimise the upgrader
 - Monitor yield quality improvement/deterioration from feedstock variations or AD process change
 - [Commission and optimise biogas CHP engines]
- Biomethane analysis for propane control
 - Fast response to changes (and reporting to propane control system) desirable to achieve and maintain target calorific value
 - Can also work with upgrader to optimise removal of inerts
 - While it is a requirement to inject fossil fuels, it is too expensive, wasteful and environmentally "bonkers" (unfavourable) to over-propanate
- [Ofgem CVDD analyser required]
- Analyser technology could unlock the billing issue and become the biggest enabler to increased grid injection of renewable gas (not just biomethane)!

UNLOCKING AND UNLIMITING BIOMETHANE INJECTION

A wish list for analyser technology to solve the billing issue:

- Be deployable in large numbers, anywhere
 - Low unit cost (<£5K desirable, but it's a wish list....so, less than <£1K?!)</p>
 - Remote power and communications access to utilities, cable routing, EC&I design all add significant cost
- An analyser for life (not just for Christmas)
 - Compatible with broad range of likely future gas mixtures, including hydrogen
 - Very cheap to either/both/all:
 - Maintain
 - Replace
 - Doesn't rely on a specialist (skill or person) to install or operate
- <u>Zero</u> emissions to atmosphere
 - Venting methane to the atmosphere somehow doesn't sound right...



Q&A THANK YOU FOR YOUR TIME AND ATTENTION

