



FutureGas
WP6

November
2019

WORK IN WP6

Work in WP6

All outputs from WP6 are available at the FutureGas Sharepoint - WP6 Outputs.

Work carried out in relation to WP6 includes:

- Conference proceedings
- Article in a gas magazine
- Milestone Reports
- Other Reports
- Presentations
- Workshops
- Education

Publications

- **The Role of Regulation in the Market Integration of the Power to Biomethane Process -Conference Paper, SDEWES 2016, Dubrovnik**
-Tara Sabbagh Amirkhizi, Lise Skovsgaard Nielsen, Luis Boscan
- **Gas Electric Heat Pumps- A socio economic feasibility study – Poster- EUBCE 2017, Copenhagen**
-Tara Amirkhizi

Journal submissions

- **Cost comparison and optimization of Gas Electric Hybrid Heat Pumps- December 2018- WIRE's Energy and Environment**
-Tara Amirkhizi, Ida Græsted Jensen
- **A Journey to a common European Biomethane Market- September 2019- Energy Policy**
-Tara Amirkhizi, Lise Skovsgaard Nielsen, Maria Olczak, Ilaria Conti

Conference submissions

- **Where should we go? A case of Biogas regulation in Denmark**
Lise Skovsgaard Nielsen, Ida Græsted Jensen, Tara Amirkhizi

Popular article in Magazine

A popular article is published in the Gas-for-Energy Magazine, after being invited based on the conference presentation at IGRC2017.

- **The integration of gas in the future Danish energy system**
Published in "Gas for Energy"
- Poul Erik Morthorst, Marie Münster, Tara Amirkhizi, Rasmus Bramstoft

Milestone Reports

This section contains the FutureGas milestone reports for WP6 submitted in 2017.

- **Overview over Danish and EU Tariffs**
- Lise Skovsgaard Nielsen, Tara Amirkhizi, Poul Erik Morthorst
- **Danish Energy Taxes and Subsidies for Renewable Gases**
- Tara Amirkhizi, Poul Erik Morthorst

Other Reports

This section contains reports regarding FutureGas related subjects

- **Status of Gas in Italy**
-Maria Olczak, Ilaria Conti (Florence School of Regulation)

- **Gas in the UK: The state of the market**
-Richard Lowes, Catherine Mitchell (University of Exeter Energy Policy Group)
- **Country reports summary- Support schemes for Biogas in the EU**
-Tara Sabbagh Amirkhizi (DTU, EER)
- **Challenges of a Gas Country: Possible Futures for the Gas Sector in the Netherlands**
-Ben Riemersma, Aad Correlje, Rolf Künneke (TU-Delft)
- **POWER-TO-GAS & UNBUNDLING FRAMEWORK**
-Maria Olczak and Andris Piebalgs (FSR)

Presentations

A long list of presentations have been given at different workshops, meetings, etc. Here are some of the more important listed.

- "Cases for the integration of green gases in the Danish gas grid" - Joint FutureGas-CITIES-InnoSE Gas Workshop, Copenhagen 2017
- Poul Erik Morthorst, Tara Amirkhizi
- "Regulation concerning Biogas Liquefaction Plants" Meeting in the Samsø Energy Academy, Samsø 2017
- Lise Skovsgaard Nielsen, Tara Amirkhizi
- "Gas and the Energy System- Status, perspectives, regulation and challenges" GasAkademin, Sweden 2017
- Poul Erik Morthorst
- "Gassens rolle i det fremtidige energisystem", Climate Council, Copenhagen 2016
- Poul Erik Morthorst
- "Gas Market and Regulation" meeting at Energinet.dk, Copenhagen 2017
- Poul Erik Morthorst, Lise Skovsgaard Nielsen, Tara Amirkhizi
- "FutureGas", Gaskonferencen, Copenhagen 2016
- Poul Erik Morthorst
- "Introduktion til FutureGas projektet og temaet fremtidens grønne transport" Copenhagen 2017
- Poul Erik Morthorst
- "Introduction to the FutureGas project", RE-INVEST Workshop, Copenhagen, 2017
- Poul Erik Morthorst
- "FutureGas", Den danske brint- og brændselscelledag, SDU, 2017
- Poul Erik Morthorst
- "Conceptual model of the gas system as an integrated part of the future Danish energy system", 12th Conference on Sustainable Development of Energy, Water and Environment Systems – SDEWES Conference, Dubrovnik 2017
-Lise Skovsgaard Nielsen
- "The Role of Regulation in the Market Integration of the Power to Biomethane Process", 12th Conference on Sustainable Development of Energy, Water and Environment Systems –Dubrovnik 2017
-Tara Sabbagh Amirkhizi
- Future Gas projektet - Gas som en integreret del af det fremtidige Energisystem; Skive november 8th 2017, Biogas2020: Skandinaviens biogas konference - biogassen i en grøn omstilling
-Lise Skovsgaard Nielsen
- "FutureGas - Gassens rolle i fremtidens energisystem", DGC board meeting, January 2018
- Poul Erik Morthorst
- "Rammebetingelser -Biogas og andre VE-gasser", gastekniske dage, May 2018
- Lise Skovsgaard Nielsen
- "From Value stacking to Tool stacking in Renewable Gas Regulation", SDEWES Conference, Palermo 2018
- Lise Skovsgaard Nielsen
- "Gas and the Energy System - Status, perspectives, regulation and challenges", Gasakademin 2018
- Poul Erik Morthorst
- "FutureGas - De første resultater ", Energinet 2018
- Poul Erik Morthorst
- FutureGas - De første resultater", Gaskonferencen 2018
- Poul Erik Morthorst
- FutureGas - De første resultater", Energistyrelsen, Copenhagen 2019
- Poul Erik Morthorst, Tara Sabbagh Amirkhizi
- FutureGas – Regulation for biomethane markets", DTU visit from the Gabonese delegation, Copenhagen 2019
- Tara Sabbagh Amirkhizi
- "Den grønne omstilling - gassens rolle", Gastekniske dage, Billund 2019
- Poul Erik Morthorst
- "A European journey to a common biomethane market", Gastekniske dage, Billund 2019
- Tara Sabbagh Amirkhizi
- FutureGas – Work Package 6, Preliminary results", HMN Naturgas A/S, Viborg 2019
- Tara Sabbagh Amirkhizi
- "A European journey to a common biomethane market", Gasstorage Danmark A/S, Copenhagen 2019
- Tara Sabbagh Amirkhizi
- Joint FutureGas-CITIES-InnoSE Gas Workshop", Copenhagen, 2017

Workshops

Workshops was held at DTU and Energistyrelsen. Experts within the Danish gas industry were invited. The workshops included presentations and discussions.

- **Futuregas Workshop-“Fremtidens grønne transport til lands og vands-hvad driver fremtiden?”**, Copenhagen,2017
- **SWOT Analysis og Diskussion af støttemekanismer**, Copenhagen 2018
- **WP6 internal workshop: Support Schemes for biogas – initial consideration**, DTU, December 2017
- **WP6 internal workshop: Evaluation of Support Schemes for biogas**, DTU, February 2018
- **FutureGas model workshop: Results and input for modelling regulation**, DTU, May 2018

Education

The FutureGas project offered an interesting background to educate project partners and DTU graduate students regarding the potentials of Gas in sector coupling. The two courses mentioned below, analysed problems regarding the FutureGas project in 2017.

- **“Natural gas and renewable gas in the Danish energy system”**
Frauke Wiese, Lise Skovsgaard Nielsen
- **“Feasibility studies of energy projects- Case: Gas Electric Heat Pumps”**
- Tara Amirkhizi, David Mora Alvarez

Media

This section includes podcasts and media content related to WP6 of the FutureGas project.

- **FSR Podcast: “FutureGas project”- December 2018**
-Maria Olczak, Tara Amirkhizi
- **FSR Lights on Women – “Integrating Renewables in Denmark’s Power Sector”- October 2019**
-Interview with Marie Münster, Lise Skovsgaard Nielsen, Tara Amirkhizi, and Sara Ben Amer