



FutureGas WP3

November
2019

WORK IN WP3

Main activities in WP3

Work carried out in relation to WP3 includes:

- Journal papers
- Conference papers
- Reports
- Presentations

Journal Papers

One paper has been published in a scientific journal and one more submitted.

- **Well-to-wheel assessment of natural gas vehicles and their fuel supply infrastructures – Perspectives on gas in transport in Denmark.** *Transportation Research Part D 65: 14-35.*
- *Dejene A. Hagos, Erik O. Ahlgren*
Focus: This paper presents a well-to-wheel assessment of natural gas vehicles based on a number of natural and bio gas pathways, which are selected based on conditions of the Danish energy and transport system.
- **Exploring cost-effective transitions to fossil independent transportation in the future energy system of Denmark.** *Submitted to Applied Energy, Dec 2018. Under revision.*
- *Dejene A. Hagos, Erik O. Ahlgren*
Focus: This paper presents a whole energy systems modelling analysis under carbon phase-out scenarios of Danish transport futures with a particular focus on gas in transport.
- **Prospects and challenges on the development of natural gas vehicle (NGV) as an alternative fuel vehicle: A review**
Under revision
- *Dejene A. Hagos, Erik O. Ahlgren*
Focus: The paper includes an extensive review of the use of natural gas in various kinds of vehicles, and of the policies that have been applied to promote this.

Conference Papers

One conference paper has been published.

- **Economic performance evaluation of natural gas vehicles and their fuel infrastructures,** published in E3S Web of Conferences 51, 01008 (2018); available in Scopus.
- *Dejene A. Hagos, Erik O. Ahlgren*
Focus: The paper presents an economic performance evaluation of natural gas vehicles and their infrastructures.

Reports

- **A state-of-the art review on the development of CNG/LNG infrastructure and natural gas vehicles (NGVs)**
- *Dejene A. Hagos, Erik O. Ahlgren*
Focus: A comprehensive report covering gas use in transport, different gas vehicles, engines, use in different countries, developments and policies.
- **Techno-economic assessment of NGVs and its fuel supply infrastructure - Perspectives on Danish gas in transport**
- *Dejene A. Hagos, Erik O. Ahlgren*
Focus: This report is presenting well-to-tank and tank-to-wheel assessment of energy, greenhouse gas and air pollutions emissions, cost and social cost of a number of selected gas for transport pathways defined based on Danish energy system conditions combined with gas vehicles in different transport segments (road and sea).

Presentations

- ➔ **“LNG/LRNG as alternative fuels in heavy duty transportation - a techno-economic assessment “**
Presentation by Dejene Hagos at the Future Gas November 16 2017 workshop in Copenhagen on *Fremtidens grønne transport til lands og vands – hvad driver fremtiden?*

- ➔ **“Economic performance evaluation of natural gas vehicles and their fuel infrastructures“**

Presentation by Dejene Hagos at the April 6-8 2018 International Conference on Advances on Clean Energy Research conference in Barcelona.

“The Role of Gas in Cost-Effective Green Transport Transitions – a Whole Energy Systems Modelling Assessment Applied to Denmark“

Presentation by Erik Ahlgren at the August 26-28, 2019, European Association of Energy Economics Conference in Ljubljana, Slovenia.

INFORMATION

Erik Ahlgren, Chalmers (erik.ahlgren@chalmers.se)