

Safety Regulation of Hydrogen as an Energy Carrier

Introduction

A large-scale use of hydrogen as an energy carrier in society will result in significant changes in the production, distribution, use etc. of hydrogen compared to the current context. The PhD project is based on an assumption that these changes call for a review of the current hydrogen regulations and potentially development of a regulatory system that are aimed at safety and security-related concerns given a large-scale introduction of hydrogen as an energy carrier.

Objective

The primary objective of the PhD-project is to provide scientific knowledge about how safety and security can be regulated given a large-scale implementation of hydrogen as an energy carrier.

Finished activities

- Systems thinking as a basis for regulating hydrogen safety in society
- Strength of Knowledge and uncertainties in safety and security regulation of hydrogen as an energy carrier

Current activities

- Framework for assessing knowledge quality in hydrogen regulation (article in progress)
- Factors that enable the choice of regulatory strategies in the case of hydrogen as an energy carrier in society (article in progress)

Future activities

- Systems theoretical analysis of transport of liquid hydrogen (planned paper)

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Related projects: HySociety, Safe Hydrogen Fuel Handling and Use for Efficient Implementation 2 (SH2IFT-2)

PhD-candidate in Risk Management and Societal Safety

Educational background – political science and societal safety



Estimated progress of the PhD project:



Publications

- Stavland, B. & Njå, O. (2022). Systems Thinking as a Basis for Regulating Hydrogen Safety in Society. *Proceedings of the 32nd European Safety and Reliability Conference (ESREL 2022)*. DOI: https://doi.org/10.3850/978-981-18-5183-4_R13-03-204-cd
- Stavland, B. & Njå, O. (2023). Strength of Knowledge and Uncertainties in Safety Regulation of Hydrogen as an Energy Carrier. I: *Proceedings of the 10th International Conference on Hydrogen Safety (ICHS 2023)*. ISBN 9791221042740. s.1103-1114.