



DEMO 1 E-METHANOL PRODUCTION

Contact Person: Olivia Anstis, TNO

Email address: olivia.anstis@tno.nl

Introduction

TNO innovation
for life

- Aim of demo** - This task aims to demonstrate at TRL 6 the use of a membrane assisted reactor for more efficient methanol production from CO₂ and H₂ feed. Methanol production from CO₂ hydrogenation is a thermodynamically limited reaction, and at lower pressures (35bar) conversion per pass is typically up to 23 mol%.. By selective removal of reaction products via membrane, the conversion per pass can be increased significantly, hence decreasing energy demand for a recycle and reducing CAPEX and OPEX. The multi-tubular membrane reactor will be designed and constructed by TNO and tested in the Fieldlab Industrial Electrification (FLIE). This reactor will be size for and connected to a 100 kW PEM electrolysis unit already available at FLIE.

KPIs

Lessons Learned

ON HOLD UNTIL AMENDMENT APPROVAL!

Current Progress Status

1. Launch of demonstrator; 2. Elaboration of KPIs, Operation characterization and modelling, and ongoing studies; 3. Testing phase in lab and data collection; 4. simulations and testing phase in pilot area; 5. results and commercially available; 6. ready to scale up

