

FIELDLAB INDUSTRIAL ELECTRIFICATION



DIRECT CO₂-CONVERSION

GENERAL DESCRIPTION:

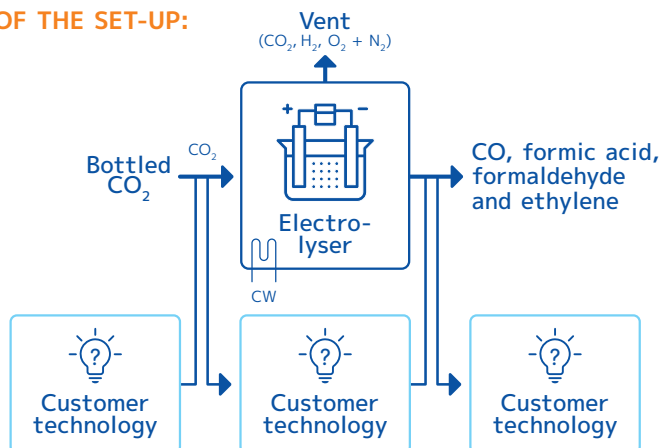
A chemistry based on CO₂ as feedstock will open up new routes for chemicals production and valorization of CO₂. One of the main challenges is the development of an integral technological solution utilizing renewable electricity to convert CO₂ to a versatile chemical building block. Some novel electrochemical synthesis routes have a strong emphasis on electrochemical process intensification.

The Fieldlab Industrial Electrification (FLIE) offers a place to test electrochemical conversion routes starting from CO₂ in a controlled environment. The FLIE hosts two pilot installations which will offer the industrial

user or technology supplier the option to test either the performance of an electrochemical stack reactor for the utilization of CO₂, or testing the lifetime of electrochemical reactor components. These installations allow for testing under higher pressures and temperatures as well as providing the capability of inline analytics of both the liquid and gaseous fraction.

Validating a technology within the FLIE helps you to mitigate (technical and financial) risks and make informed decisions on how to make your industrial processes more sustainable and futureproof.

SCHEME OF THE SET-UP:



DIRECT CO₂-CONVERSION

SOME EXAMPLE OPPORTUNITIES:

- Electrochemical stack testing and validation for a variety of products, such as CO, formic acid, formaldehyde and ethylene
- Lifetime testing of ionic exchange membranes for the electrolysis of CO₂ over prolonged campaigns
- Testing of the electrocatalyst stability and activity over prolonged testing campaigns (> 500h)
- Stability testing under flexibility scenarios of intermittent power supply to the electrolyser
- Validation of purification techniques of the products formed during the electrochemical processes

SPECIFICATIONS:

Characteristics	Flow [Nm ³ /h]	Pressure [bar]
Potable water	0.04	4
Instrument air	4.5	6
Bottled N ₂	2.8	300
Bottled CO ₂	6	50
Power supply	~ 50 kW available	



WANT TO KNOW MORE?

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The Fieldlab is continuously developing. It is therefore possible that the specifications have changed in the meantime. Do you want to view the latest version? Scan the QR code or look at www.flie.nl/directco2conversion.