

## **Electrification of the Chemical Industry**

# **Business Case Modelling Tool**









Collect and standardize information regarding the business cases which are relevant for the VoltaChem program lines.





#### --- Motivation

Enable business case analysis before making investments in research and development, while taking into account different scenarios and incentives.

#### - Project Scope

Development of a generic electro-chemical business case calculation tool with four example cases: hydrogen, methanol, FDCA and formic acid.

#### --- Tool Description

#### --- Key Features

- Calculation of the operational hours as a result of marginal profit and cost figures;
- Testing of the sensitivity to different prices scenarios for electricity and natural gas;
- Testing of the opportunities for business cases through different subsidy schemes.

#### --- Results

• Economic parameters, like net present value (NPV) and internal rate of return (IRR); Waterfall of cumulative cash flow for the hydrogen example case with a TNO price scenario.

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The model includes an electrochemical conversion process, a subsequent post processing plant, energy price scenarios, and various options for incentives. • Operational parameters like annual

operating hours and production totals;

Product prices and division of costs

(waterfall plots);

• Detailed cash flow analysis over the depreciation period.

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