# AGI-integrated innovative storage for green H2 production

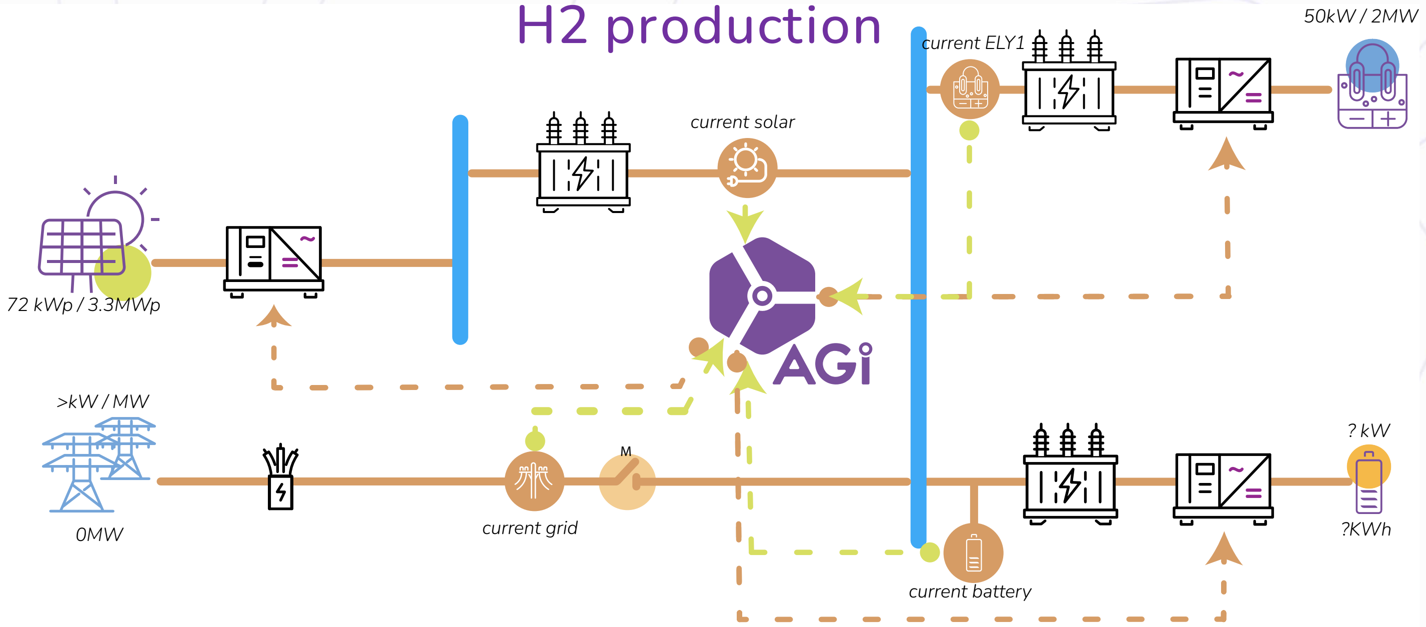
## Location

Shell R&D site, The Netherlands

## Objectives

1. Reducing the grid connection cost by minimizing the grid hosting capacity for green hydrogen production.
2. Enhancing the electrical integration of electrolyzers by improving the inadequate power quality and deficient dynamics deteriorating the local network.
3. Improving electrolyzer's efficiency and lifetime by minimizing large transients acting on the the electrolyzer/stack.
4. Enabled fast transients by fast high-power storages to the green hydrogen production site.

## Proposed AGI-integrated innovative storage for green H2 production




## Technologies used

- Alkaline electrolyzer
- Energy storage system
- Advanced controllers
- PV generation
- AC/DC converters
- Short circuit limiter

## Expected results

- Demonstrating/quantifying how the integration of energy storage with electrolysis and onsite renewables can lead to reduced grid connection costs.
- The need for power quality compensation, improvements in electrolysis operational efficiency and a reduction in curtailed renewable energy not available for electrolysis, leading to lower scope 1 emissions and improved Life Cycle Assessment impacts.
- Minimum sizing of energy storage devices to improve the power grid hosting capability for onsite generation.

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