

Project Information



Subject Control and Management System for Fuel Cells

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Project description:

For using of fuel cells in domestic heating demands is essential a complex and sophisticated system which is able to feed the current produced by the fuel cell into the electric grid. This also includes:

- Controlling and monitoring of the fuel cell
- Integration into the controlling and monitoring of the reformer and the heat exchange
- Transforming the current of the fuel into AC and connect it to the grid
- Enabling a communication with the supervisor on-site as well as by Internet connection (in order to control a virtual power plant)

Currently, there are no systems commercially available which combine all these characteristics. The target of this project is the development of the so-called **Cell Management Systems CMS** with the functions mentioned above.

The transformation to AC by our system is realized in a new patented manner, so that the resulting current has extremely small harmonic waves (nearly a perfect sinus wave). The inverter has furthermore the feature that it produces a desired and well defined feedback to the fuel cell.

The monitoring of the grid is a passive system. It is extremely fault-tolerant und thus being able to monitor grids which are heavily loaded with interfering signals. The patent for this technology is pending.

Our control device allows the operation of the complete system including fuel cell, reformer, heat exchange and current inverting. An additional interface will ensure the remote operation forming the basis for a virtual power plant.