

### **Task 33: Fuel Cells for Stationary Applications**

Task 33 is an application-type Task with the objective to better understand how stationary fuel cell systems may be deployed successfully in energy systems. The work focuses on the market requirements for fuel cells in stationary applications; both opportunities and obstacles are investigated and discussed. Market development is followed closely with a special focus on fuels, environment and competitiveness.

All kinds of stationary applications are addressed, both grid-connected and stand-alone. Opportunities in niche and broader markets are investigated, where fuel cells have advantages over existing, competing technologies. Obstacles to be overcome are discussed as well as recommendations for new regulations.

The market for small stationary fuel cells for residential use has increased significantly, but very locally. A first major task in the new Task is to investigate untapped markets for residential stationary fuel cells, where there is a viable economic and environmental case, analyzing how the market varies between countries, including energy prices and the framework for the use and production of electricity and heat.

A second task is to investigate the implications for stationary fuel cells caused by the introduction of new Directives or relevant legal regulations and standards. Effects on the increase of fuel cell competitiveness will be discussed to provide IEA-qualified input to the ongoing regulatory processes, elaborating recommendations and justifications as needed.

A third task is to investigate technology and market development of large fuel cell plants. These are often used in parallel with the grid in sensitive applications, such as hospitals, banks, offices, warehouses and supermarkets. The state of the art will be studied by analyzing user cases in the different IEA Member countries and beyond.

A fourth essential task is to predict how fuel cells will be applied in future energy systems, and in particular the opportunities concerning the use of renewable fuels and hydrogen, applications for H<sub>2</sub> mobility, smart grids, power to gas, and other applications where FCs can play a pioneering role.

All fuel cell technologies and sizes under development are considered for analysis in Task 33.

This Task will focus on information sharing and learning between experts with knowledge and experience on fuel cells technologies for stationary applications. Task 33 holds a series of annual workshops where representatives from the participating countries present the status of research, development and demonstration in their respective countries, in addition to discussing a selected topic. Where possible, these workshops will be linked to other relevant conferences, in order to minimize travelling costs. The workshops lead to open discussions relating to common problems and should have realizable and achievable aims.

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