

New Norwegian Research Center on Zero Emission Energy Systems with focus on battery- and hydrogen technology for transport applications

Objectives & Goals

The main objective with MoZEES is to be a *Center for environment-friendly energy research (FME)* with the goal to develop new battery and hydrogen materials, components, and technologies for existing and future transport applications on road, rail, and sea.



Photo: Symbio Fuel Cell



Photo: Alstom Transport Europe

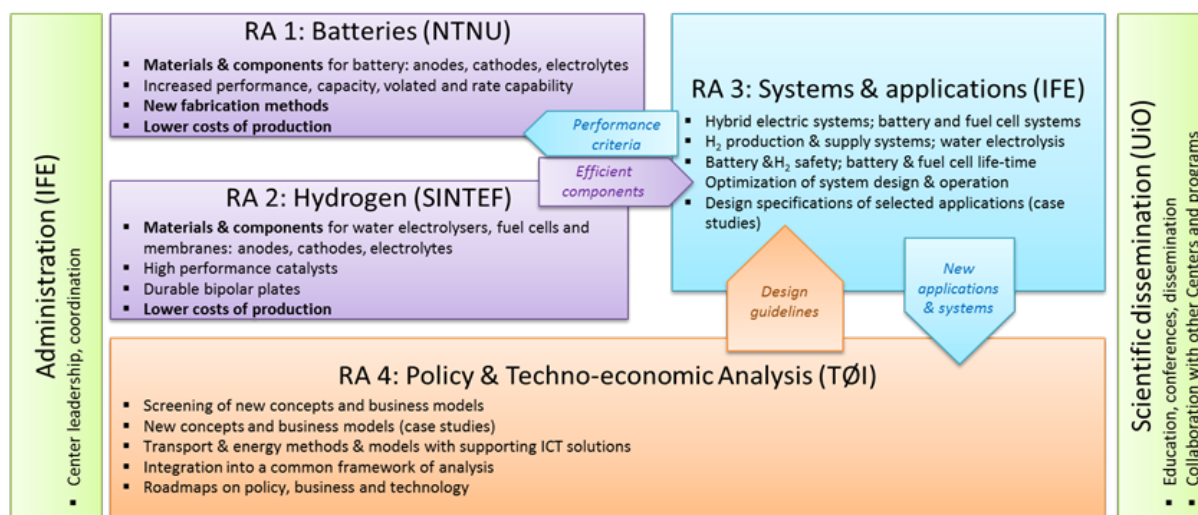


Photo: Norled

Research Areas

The research in MoZEES will focus on the following:

1. New materials and processes that enable the industrial User Partners to compete in niche markets of the battery and hydrogen/fuel cell industry (RA1 & RA2)
2. Battery and hydrogen key components and technologies for export-oriented products (RA1 & RA2)
3. Battery and hydrogen systems for application by User Partners into near to medium term transport markets (road, rail, sea), with a particular focus on maritime applications (RA3 & RA4)
4. Integrated zero-emission energy and transport solutions and services, including battery charging and hydrogen refueling infrastructures (RA3 & RA4)



MoZEES

Mobility Zero Emission Energy Systems



Background & Motivation

Norway has access to vast amounts of renewable power, some of which can be used to produce electricity and hydrogen for transport. Ambitious national and regional climate policies on low and zero emission transport are currently being implemented, including economic support for the introduction of battery and hydrogen fuel cell electric vehicles. There is also a strong national policy to stimulate existing and new businesses to create new “green jobs”. Hence, there is now a need to couple national and regional climate policies with long-term industry-driven business development strategies.

Battery and hydrogen technologies have been demonstrated for use in zero emission transport systems in many countries and regions around the world. However, further developments are needed before these technologies can be introduced into other transport sectors, such as heavy-duty transport by road, rail, or sea. MoZEES will focus on battery and hydrogen value chains, systems, and applications where Norway can take leading position in the future.

Markets

The maritime sector has been identified as an important area where Norway can and should develop new zero emission technologies, systems, and solutions, both for domestic and international markets. One of the main ambitions in MoZEES is therefore to show how zero emission technologies can be a viable technical and economical alternative for the maritime sector, both in Norway and abroad. MoZEES will also support R&D performed by the commercial User Partners that intend to participate in the international battery and hydrogen technology value chains.

Organization & Partners

MoZEES will consist of 7 national Research Partners, 6 international Research Partners, and more than 30 User Partners, including 20 commercial and industrial User Partners. Public funding for 8 years was recently awarded by the Research Council of Norway, and the plan is to complete all agreements and the formal establishment of MoZEES by the end of 2016.

Norwegian Research Partners		International Research Partners
IFE	Institute for Energy Technology	• Uppsala University (Sweden)
SINTEF	Stiftelsen SINTEF	• Fraunhofer ISE (Germany)
UiO	University of Oslo	• RWTH Aachen (Germany)
NTNU	Norwegian University of Science and Technology	• VTT (Finland)
FFI	Norwegian Defense Research Establishment	• University of Genova (Italy)
HiT	Telemark University College	• UC Davis (California)
TØI	Institute of Transport Economics	

Contact

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