N.ERGHY Members´ Expertise

The Name of the Organization IMDEA

Areas of Expertise

Transport Pillar

1.1 Road Vehicles Applications ☐

Description

1.2 Non-road Vehicles (including materials handling) Applications ☐

Description

1.3 Auxiliary Power Units (APU) ☐

Description

1.4 Hydrogen Refueling Infrastructure (HRS) ☐

Description

1.5 Stack Components ☐

Description

1.6 System (BoP) Components ☐

Description

1.7 System Integration ☑

Description: Power electronics, real-time control systems, energy management, demand forecast

1.8 On-board Hydrogen Storage ☐

Description

1.9 Demonstration ☑

Description: Power network integration

1.10 Modelling ☑

Description: Modelling of grid integration, power electronics

1.11 Characterisation and Testing ☑

Description: Realistic power network test conditions

1.12 Materials Synthesis, Design and Manufacturing from Components to Systems ☐

Description

Energy Pillar / Energy to Hydrogen

2.1 Hydrogen Production ☑

Description: Production of H2: CH4 decomposition, thermochemical cycles.Integration of solar technologies for thermal, electric and hydrogen production contribution.

2.2 Hydrogen Storage ☐

Description

2.3 Hydrogen Handling and Distribution ☐

Description

2.4 Smart Buildings and Communities ☑

Description: Building energy management system, optimisation of energy supply mix, grid integration

2.5 Smart Cities ☑

Description: energy management of local resources

2.6 Smart Grids ☑

Description: activepower network management, renewable integration, network state estimation, demand forcasting

2.7 Stack Components ☐

Description

2.8 Stack Integration and BOP ☐

Description

2.9 Demonstration ☐

Description

2.10 Modelling ☐

Description

2.11 Characterization and Testing ☐

Description

2.12 Design and Manufacturing ☐

Description

Energy Pillar / Fuel Cells to Energy

3.1 Combined Hit and Power Units (CHP) ☐

Description

3.2 Power Generation ☐

Description

3.3 Back-Up Power Systems ☐

Description

3.4 Residential ☐

Description

3.5 Commercial ☐

Description

3.6 Industrial ☐

Description

3.7 Control, Diagnostics and Prognostics ☑

Description: Management and control strategies

3.8 Innovation on Fuel Cells and Components ☐

Description

3.9 Manufacturing Technologies ☐

Description

3.10 Modelling ☐

Description

3.11 Characterization and Testing ☑

Description

Laboratory for electricity network studies, Smart Energy Integration Lab (SEIL).Electrochemical Devices Testing Lab (EDTL)

Cross-Cutting Research Activities

4.1 Education ☐

Description

4.2 Recycling ☐

Description

4.3 Safety ☐

4.4 Communication and Public Awareness ☐

Description

4.5 E-Science and E-Educations ☐

Description

4.6 Market and Technology Monitoring ☐

Description

4.7 Pre-Normative Research ☑

Description

Pre-Normative Research

4.8 Regulations, Codes and Standards (RCS) ☐

Description

4.9 Techno-, Socio- and Economic Analysis ☑

Description

Management and life cycle analysis: LCA, LCA+DEA, LCC, environmental declarations applied to products, processes and services. Energy integration feasibility studies

4.10 Support (to Public Authorities, Policy Officers and Society ☐

Description