







Institute/Country	Theme	Sub Theme	Related programs (with short summary)	Target / Goal Outcome	Lead person / Organization	Partnership (if any)	Related information
CEA/France	Hydrogen	Production	Development of High Temperature Steam Electrolysis 	Increase lifetime and robustness of SOE cells stacks and systems Scaling up to 300 kW capacity	Dr Thierry PRIEM / CEA	Europe H2020, French Local Institutions, French ANR, Industrial partnerships	
		Transportation /Storage	Development of a reversible Solid Oxide Steam Electrolysis /Fuel cell system (r-SOC)	Proof of concept and evaluation of operation conditions domain	Dr Thierry PRIEM / CEA	Europe H2020, French Local Institutions, French ANR, Industrial partnerships, Syffen	
			Hydrogen storage in hydrocarbon liquids	Feasibility, proof of concept development life cycle and environmental impact analysis	Dr Thierry PRIEM / CEA	Europe H2020 and French ANR	
		Utilization	Development of Proton Exchange Membrane Fuel Cells (PEMFC) 	Development of low cost fabrication processes, research for reduction of Pt catalysts (< 0,25g / cm <sup>2</sup> ), research for increasing PEMFC lifetime and operation conditions domain	Dr Thierry PRIEM / CEA	Europe H2020, French ANR, Industrial partnerships	

CEA/France	CCUS	Methanation	Development of micro reactors for thermal monitoring, reaction kinetics control and modular scaling up 	Increase methanation reaction yields and catalysts durability	Dr Thibault CANTAT / CEA	Europe H2020, French ANR, Industrial partnerships	
		Power to X	Research on relevant exchange-reactor design for producing various type of hydrocarbon molecules Jupiter 1000 demonstration project : Contribution to methanation reactor dimensionning	Increase reactions flexibility with relevant yields	Dr Thibault CANTAT / CEA	French ADEME, industrial partnership	
		Co electrolysis	Development of high temperature CO <sub>2</sub> + steam electrolysis 	Evaluation of high temperature co-electrolysis potential for complementing methanation in industrial processes	Dr Thierry PRIEM / CEA	Europe H2020, French ANR	

CEA/France	Renewable Energy	Solar PV	High yield heterojunction PV cells and modules development High yield tandem solar cell development Recycling of PV modules 	25% cell yield by 2020	Dr Pierre JULIET / CEA	Europe H2020, French ANR, Industrial partnerships	
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CEA/France	Others	Battery	Development of next generation Li ion batteries 	Increase power, capacity and safety	Dr Thierry PRIEM / CEA	Europe H2020, French ANR, Industrial partnerships	
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