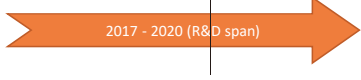





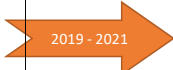


Country	Institute	Category	Related programs (with short summary)	Target / Goal Outcome	Lead person / Organization	Partnership (if any)	Related information
Germany	Fraunhofer		<p>Carbon2Chem Brings together the energy, steel and chemical industries to form a cross-industry production network. The hydrogen synthesis process plays a key role, as hydrogen is required for almost all subsequent synthesis routes. [2016-2020]</p> <p style="text-align: center;">Current </p>	Pilot plant for demonstrating the integration of technology modules into a cross-industry network with the smelter. Production of hydrogen by means of water electrolysis using volatile renewable energies.	Fraunhofer-UMSICHT	thyssenkrupp AG, Max Planck Institute for Chemical Energy Conversion and other partners from research and industry	https://www.umsicht.fraunhofer.de/de/presse-medien/pressemitteilungen/2019/carbon2chem-laboreinweihung.html
		Hydrogen production and CO2 reduction	<p>HYPOS - Hydrogen Power Storage & Solutions East Germany One of the ten innovation projects of the "2020 - Partnership for Innovation" funding initiative launched by the German Federal Ministry of Education and Research (BMBF). The objective of the project is the production, storage, distribution and broad application of green hydrogen in the chemical and refining industry, mobility and energy sectors. [2018-2020]</p> <p style="text-align: center;">Current </p>	Substituting the use of fossil fuels for hydrogen production	Fraunhofer-IMWS	HYPOS e.V. now has over 100 members throughout Germany	http://www.hypos-eastgermany.de/
		Fuel cells	<p>DEKADE: novel catalyst systems, electrodes and membranes are developed for automotive fuel cell applications. [2017-2019]</p> <p style="text-align: center;">Current </p>	Making fuel cell drive systems competitive, especially for the automotive industry	Fraunhofer ISE	National Research Council, University of British Columbia and Simon Fraser University, Vancouver (Canada)	https://www.imtek.de/forschung/projektuebersicht/projektuebersicht?projectId=10642

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Germany	Fraunhofer	CO2 reduction	<p>SALCOS SALCOS® focuses on the primary avoidance of CO2 formation in the steel production process through research innovative process technologies. Specialists from a large German steel producer are working together with Fraunhofer Institutes and other partners on integrated the new technologies into smelting plants. [2017-2020]</p> <p style="text-align: center;">Current</p> 	<p>The goal is CO2-reduced steel production. With a step-by-step implementation of the technology, a CO2 reduction of initially up to 50% is principally possible. If successful, the reduction could rise up to 85% in the future.</p>	Fraunhofer IKTS	Salzgitter AG (German steel industry)	https://salcos.salzgitter-ag.com/
		CO2 recycling	<p>Carbon2Chem Brings together the energy, steel and chemical industries to form a cross-industry production network. The hydrogen synthesis process plays a key role, as hydrogen is required for almost all subsequent synthesis routes. [2016-2020]</p> <p style="text-align: center;">Current</p> 	<p>Pilot plant for demonstrating the integration of technology modules into a cross-industry network with the smelter.</p> <p>Production of hydrogen by means of water electrolysis using volatile renewable energies.</p>	Fraunhofer-UMSICHT	thyssenkrupp AG, Max Planck Institute for Chemical Energy Conversion and other partners from research and industry	https://www.umsicht.fraunhofer.de/de/presse-medien/pressemitteilungen/2019/carbon2chem-laboreinweihung.html

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Germany	Fraunhofer	Solar energy	AtaMoS-TeC: photovoltaic technologies for harsh conditions [2017 - 2025] Current 	Develop photovoltaic technologies that adapt to the exceptional conditions of the Atacama Desert (high radiation; high average hours of sunshine; an arid climate; skies almost cloudless; Low ambient temperature). Energy cost will be reduced to a target of 25 US\$/MWh by the year 2025.	Fraunhofer Chile Research	SERC Chile (Solar Energy Research Center)	https://www.fraunhofer.cl/en/press/news/cset-news/amos-tec-starts-construction-for-applied-research-outdoor.html
			CPV-India: Concentrator Photovoltaics Targeted for highly efficient power production in India [2016-2020] Current 	The main objective of the project is the installation and scientific evaluation of a 53 kW CPV system for power generation in India.	Fraunhofer ISE	NTCP NETRA (India)	https://www.ise.fraunhofer.de/de/forschungsprojekte/cpvindien.html
		Wind energy	AFLOWT: Demonstration of high survivability cost competitive floating offshore wind (FOW) technology [2018-2022] Current 	Demonstrators for a floating platform that it is viable in offshore operation and cost-competitive.	Fraunhofer IWES	Research institutions from Ireland, France, Netherlands	https://www.iwes.fraunhofer.de/de/forschungsprojekte/aktuelle-projekte/afloft.html
		Electricity grid	REstable: Improvement of regenerative-based power grid systems and services [2016-2019] Current 	Securing grid stability in the European electricity grid network by expanding fluctuating electricity generation with renewable energies.	Fraunhofer IEE	ARMINES MINES-ParisTech, Artelys, ENERCON, HESPUL, HydroNEXT, INESC, TEC, Maïa Eolis, SolarWorld	https://www.iee.fraunhofer.de/de/projekte/suche/laufende/restable.html
		Battery	ICON-Project: Solid State Battery [2019-2021] Current 	Development and battery cell production and produces the first prototypes.	Fraunhofer ISC	EMPA (Switzerland)	https://www.isc.fraunhofer.de/en/press-and-media/press-releases/solid-state-batteries-for-tomorrows-electric-cars.html