

## Carbon Capture, Utilisation and Storage (CCUS) & Alternative Fuels

### H2020 CLUSTER WORKSHOP

### PROJECT OVERVIEW

POLICY-NEAR CCUS ACTIONS		
SSFZEP 826051	<a href="#">Support stakeholders in zero emission fossil fuel power plants and energy intensive industry</a> CCS, CCU, industry <a href="#">Project webpage</a>	EU Contribution: € 997,671.75
IMPACTS9 842214	<a href="#">Implementation Plan for Actions on CCUS Technologies in the SET Plan</a> CCUS, carbon capture, storage utilisation, climate, energy, industry <a href="#">Project webpage</a>	EU Contribution: € 1 100 298,75
STRATEGY CCUS 837754	<a href="#">STRATEGIC PLANNING OF REGIONS AND TERRITORIES IN EUROPE FOR LOW-CARBON ENERGY AND INDUSTRY THROUGH CCUS</a> CCUS scenarios clusters, European infrastructure in Southern and Eastern Europe <a href="#">Project webpage</a>	EU Contribution: € 2 959 533,75
ACT 691712	<a href="#">Accelerating CCS technologies as a new low-carbon energy vector</a> CCS, Carbon capture, carbon storage, low carbon energy <a href="#">Project webpage</a>	EU Contribution: € 11 889 929,23
INDUSTRIAL CCUS PROJECTS		
CHEERS 764697	<a href="#">Chinese-European Emission-Reducing Solutions</a> Chemical-looping combustion, petroleum refineries, TRL 5,6,7. <a href="#">Project webpage</a>	EU Contribution: € 9,727,105
CLEANKER 764816	<a href="#">CLEAN clinker production by Calcium looping process</a> Calcium looping, cement production, TRL 7 <a href="#">Project webpage</a>	EU Contribution: € 8,972,201.25
3D 838031	<a href="#">DMX Demonstration in Dunkirk</a> DMXTM CO2 capture technology, steel mill, TRL 7 <a href="#">Project webpage</a>	EU Contribution: € 14,739,369.91
LEILAC2 884170	<a href="#">LOW EMISSIONS INTENSITY LIME AND CEMENT 2: DEMONSTRATION SCALE</a> Direct Separation calcining technology, lime and Portland cement, TRL7	EU Contribution: € 15,994,730



European  
Commission

	<a href="#">Project webpage</a>	
<b>MOF4AIR 837975</b>	<a href="#">Metal Organic Frameworks for carbon dioxide Adsorption processes in power production and energy Intensive industries</a> Metal Organic Framework, vacuum pressure and moving bed temperature swing adsorption, power supply, carbon-intensive industries (cement, steel, petrochemical), TRL5/6 <a href="#">Project webpage</a>	EU Contribution: € 9,947,143.16
<b>REALISE 884266</b>	<a href="#">Demonstrating a Refinery-Adapted Cluster-Integrated Strategy to Enable Full-Chain CCUS Implementation</a> Low-energy solvent-based absorption process refinery, TRL7 <a href="#">Project webpage</a>	EU Contribution: € 6,444,163.75
<b>C4U 884418</b>	<a href="#">Advanced Carbon Capture for steel industries integrated in CCUS Clusters</a> DISPLACE and CASOH solid sorbent technologies iron and steel industry, TRL7 <a href="#">Project webpage</a>	EU Contribution: € 12,499,083
<b>ConsenCUS 101022484</b>	<a href="#">CarbOn Neutral cluSTers through Electricity-based iNnovations in Capture, Utilisation and Storage</a> Absorption of CO2 in KOH and electrochemical regeneration method, Cement, Magnesia, Oil refinery, TRL 6/7 <a href="#">Project webpage</a>	EU Contribution: € 12,862,331
<b>ACCESS 101022487</b>	<a href="#">Providing access to cost-efficient, replicable, safe and flexible CCUS</a> Rotary packed bed absorber, enzymatic solvent, pulp and paper, cement, TRL7	EU Contribution: € 14,983,874
<b>CO2 UTILISATION/ALTERNATIVE FUELS PROJECTS</b>		
<b>EForFuel 763911</b>	<a href="#">Fuels from electricity: de novo metabolic conversion of electrochemically produced formate into hydrocarbons</a> Electrochemistry, renewable electricity conversion, formate assimilation, synthetic metabolism, bio-refineries, hydrocarbon fuels, TRL4 <a href="#">Project webpage</a>	EU Contribution: € 4 117 207,50
<b>KEROGREEN 763909</b>	<a href="#">Production of Sustainable aircraft grade Kerosene from water and air powered by Renewable Electricity, through the splitting of CO2, syngas formation and Fischer-Tropsch synthesis</a> Sustainable aviation fuel, plasma CO2 conversion, membrane O2 gas separation, Fischer-Tropsch synthesis, power-to-X technology, TRL 4 <a href="#">Project webpage</a>	EU Contribution: € 4 951 958,75
<b>COZMOS</b>	<a href="#">Efficient CO2 conversion over multisite Zeolite-Metal nanocatalysts to fuels</a>	EU Contribution:



European  
Commission

837733	<a href="#">and Olefins</a> Fuels and high added value chemicals, propane, propene, bifunctional catalyst, nanocatalyst, zeolite, single reactor, steel and refineries, TRL 5 <a href="#">Project webpage</a>	€ 3,997,163.75
C2FUEL 838014	<a href="#">Carbon Captured Fuel and Energy Carriers for an Intensified Steel Off-Gases based Electricity Generation in a Smarter Industrial Ecosystem</a> Formic acid, dimethylether steel, green hydrogen, solid oxide electrolysis, membrane reactor, blast furnace , steel, TRL5/6 <a href="#">Project webpage</a>	EU Contribution: € 3,999,840
CO2FOKUS 838061	<a href="#">CO2 utilisation focused on market relevant dimethyl ether production, via 3D printed reactor- and solid oxide cell based technologies</a> Dimethyl ether, 3D printed reactors, multichannel reactors, solid oxide cell based technologies, TRL 6 <a href="#">Project webpage</a>	EU Contribution: € 3 994 950
eCOCO2 838077	<a href="#">Direct electrocatalytic conversion of CO2 into chemical energy carriers in a co-ionic membrane reactor</a> Synthetic jet fuels, CO2 conversion process, renewable electricity, water steam, ceramic electrolyte, ionic conductor, zeolite, electrochemical reactor, TRL5 <a href="#">Project webpage</a>	EU Contribution: € 3,949,978.75
SELECTCO2 851441	<a href="#">Selective Electrochemical Reduction of CO2 to High Value Chemicals</a> Electrochemistry, CO2 reduction, ethylene, ethanol, carbon monoxide, electrolyzer, catalysis, TRL4 <a href="#">Project webpage</a>	EU Contribution: € 3 772 265
GICO 101006656	<a href="#">Gasification Integrated with CO2 capture and conversion</a> Hydro thermal carbonisation; sorption enhanced gasification; hot gas conditioning, methanol, TRL4 <a href="#">Project webpage</a>	EU Contribution: € 3 928 257,50
EcoFuel 101006701	<a href="#">Renewable Electricity-based, cyclic and economic production of Fuel</a> CO2 direct air capture, direct electro-catalytic CO2 reduction to hydrocarbons, transportation fuels, TRL4 <a href="#">Project webpage</a>	EU Contribution: € 4 858 547,50
TAKE-OFF 101006799	<a href="#">Production of synthetic renewable aviation fuel from CO2 and H2</a> CO2 utilization, aviation, renewable fuel, reactor design, catalyst development, synthetic fuel, olefins, green H2, in situ water removal, renewable Hydrogen, captured CO2, TRL 5	EU Contribution: € 4 998 788,25



European  
Commission

<p><b>LAURELIN</b> <b>101022507</b></p>	<p><a href="#">Selective CO2 conversion to renewable methanol through innovative heterogeneous catalyst systems optimized for advanced hydrogenation technologies (microwave, plasma and magnetic induction)</a> Renewable fuel, methanol, catalyst, CO2 hydrogenation reaction, decarbonisation, TRL 3</p>	<p>EU Contribution: € 4 448 838,75</p>
<p><b>4AirCRAFT</b> <b>101022633</b></p>	<p><a href="#">Air Carbon Recycling for Aviation Fuel Technology</a> Process intensification; CO2 conversion; renewable fuels; high density hydrocarbons; organic-inorganic catalysts; cascade synthesis; aviation; fuels, TRL3</p>	<p>EU Contribution: € 2 239 591,25</p>
<p><b>ALTERNATIVE FUELS/ARTIFICIAL PHOTOSYNTHESIS PROJECTS</b></p>		
<p><b>SUN-to-X</b> <b>883264</b></p>	<p><a href="#">Bringing liquid solar fuels closer to commercialisation</a> Solar-powered Hydrogen production, Storage of H<sub>2</sub> in a liquid, Hydrosil, Solar fuels, photoelectrochemical and thermochemical reactions, Recycling plastic waste, TRL5 <a href="#">Project webpage</a></p>	<p>EU Contribution: € 2 999 143,75</p>
<p><b>SUN2CHEM</b> <b>884444</b></p>	<p><a href="#">Novel photo-assisted systems for direct Solar-driven redUctioN of CO2 to energy rich CHEMicals</a> Solar-driven CO2 reduction, ethylene, photoelectrochemical cells and advanced photocatalytic reactors, TRL4, TRL5 <a href="#">Project webpage</a></p>	<p>EU Contribution: € 2 998 445</p>
<p><b>BacToFuel</b> <b>825999</b></p>	<p><a href="#">BACterial conversion of CO2 and renewable H2 INTO bioFUELS</a> Photocatalytic splitting of water, bacterial media to convert CO2 and renewable hydrogen into biofuels, TRL 5 <a href="#">Project webpage</a></p>	<p>EU Contribution: € 2 999 919</p>
<p><b>METHASOL</b> <b>101022649</b></p>	<p><a href="#">International cooperation for selective conversion of CO2 into METHANol under SOLar light</a> Transport biofuels, methanol, photocatalysis, direct sunlight conversion, CO2 conversion, oxygen evolution reaction, Z-scheme heterojunction, TRL 3/4</p>	<p>EU Contribution: € 3 999 633,75</p>
<p><b>NEFERTITI</b> <b>101022202</b></p>	<p><a href="#">Innovative photocatalysts integrated in flow photoreactor systems for direct CO2 and H2O conversion into solar fuels</a> Transport biofuels, long chain alcohols, photocatalysis, flow reactors, heterogenous photocatalysts, light-harvesting, solar ethanol, TRL 4</p>	<p>EU Contribution: € 3 844 427,50</p>