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**Partner search**

**Date (04/09/2020)**

* **(\*) Indicate numbers of relevant topics for Green Deal call:**

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| LC-GD-1-1-2020: Preventing and fighting extreme wildfires with the integration and demonstration of innovative means  LC-GD-1-2-2020: Towards Climate-Neutral and Socially Innovative Cities  LC-GD-2-1-2020: Innovative land-based and offshore renewable energy technologies and their integration into the energy system  LC-GD-2-2-2020: Develop and demonstrate a 100 MW electrolyser upscaling the link between renewables and commercial/industrial applications  LC-GD-2-3-2020: Accelerating the green transition and energy access Partnership with Africa  LC-GD-3-1-2020: Closing the industrial carbon cycle to combat climate change - Industrial feasibility of catalytic routes for sustainable alternatives to fossil resources  LC-GD-3-2-2020: Demonstration of systemic solutions for the territorial deployment of the circular economy  LC-GD-4-1-2020: Building and renovating in an energy and resource efficient way  LC-GD-5-1-2020: Green airports and ports as multimodal hubs for sustainable and smart mobility  LC-GD-9-1-2020: European Research Infrastructures capacities and services to address European Green Deal challenges |

* **Quick description of the project**

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* **(\*) Do you intend to apply as ? :**

**Coordinator: No**

**Participant: Yes**

**(\*) Either Description of the expertise requested (up to 1000 characters) - *specify which points of the "expected impact" of the call you are targeting***

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**Or Description of the expertise proposed (up to 1000 characters) - *specify which points of the "expected impact" of the call you are targeting***

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| Energy scenarios simulation  Energy sources hybridization  Modelling - Digital twins  Thermal control, safety  Eco design  Thermic, fluidics and electrical architecture  Electrical and abuse characterizations (up to 800kWh)  Manufacturing of lithium-based battery packs (from tiny hearing-aid batteries to electric-bus batteries)  \* Cell chemistry selection  \* Battery modelling (multi-scale and multi-physics)  \* Battery casing design: thermal control, collision protection, easy recycling  \* Battery Management System (BMS)  \* Power electronics: architecture, converters, inverters, commuted system  \* Second life batteries: state of health assessment, second life management  \* Battery recycling  Manufacturing of PEM Fuel cell (membrane electrodes, catalyst, bipolar plate, stack)  \* Components selection  \* PEM electrical and thermal modelling  \* Stack design  \* PEMFC management system  Hydrogen safety  PEM Water Electrolysis  **Key words:** **Battery, PEM Fuel Cell, Energy sources hybridization, Energy storage, Energy and power optimisation** |

**Organisation information**

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| **Organisation and country:**  **CEA LITEN (DEHT), FRANCE** |
| **Type of organisation:**  **□ Enterprise □ SME □ Academic □Research institute X Public Body □ Other: Association** |
| **Former participation in FP European projects?**  **X Yes □ No** |
| **Web address:**  <http://liten.cea.fr/cea-tech/liten/english/> |
| **Description of the organisation:**  The French Alternative Energies and Atomic Energy Commission (CEA) is a key player in research, development and innovation in four main areas: defence and security, low carbon energies (nuclear and renewable energies), technological research for industry, fundamental research in the physical sciences and life sciences. Drawing on its widely acknowledged expertise, the CEA actively participates in collaborative projects with a large number of academic and industrial partners.  CEA LITEN institute is devoted to the development of innovative technologies for the energy transition. It has a staff of 975 people, an annual budget of 138 million euros, and has more than 200 industrial partners from a wide range of market segments: energy, transport, aerospace, construction, civil engineering, environmental, and IT industries, amongst others. Intellectual property forms a major part of CEA LITEN activities, with a portfolio of 1,600 international patents.  The Electricity and Hydrogen Department (DEHT) develops new technologies (materials, components and systems) for Li-ion and post Li-ion batteries, fuel cells, PEM electrolysers and hybridization of electrochemical systems. The main topics addressed are material synthesis, development of cells, MEA, bipolar plates and stacks, characterization, modelling and system integration. Applications range from stationary energy storage to road, aeronautics or waterborne transport. |

**(\*) Contact details**

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| **Country** | France |

**(\*) –Mandatory**