

Partnering offer

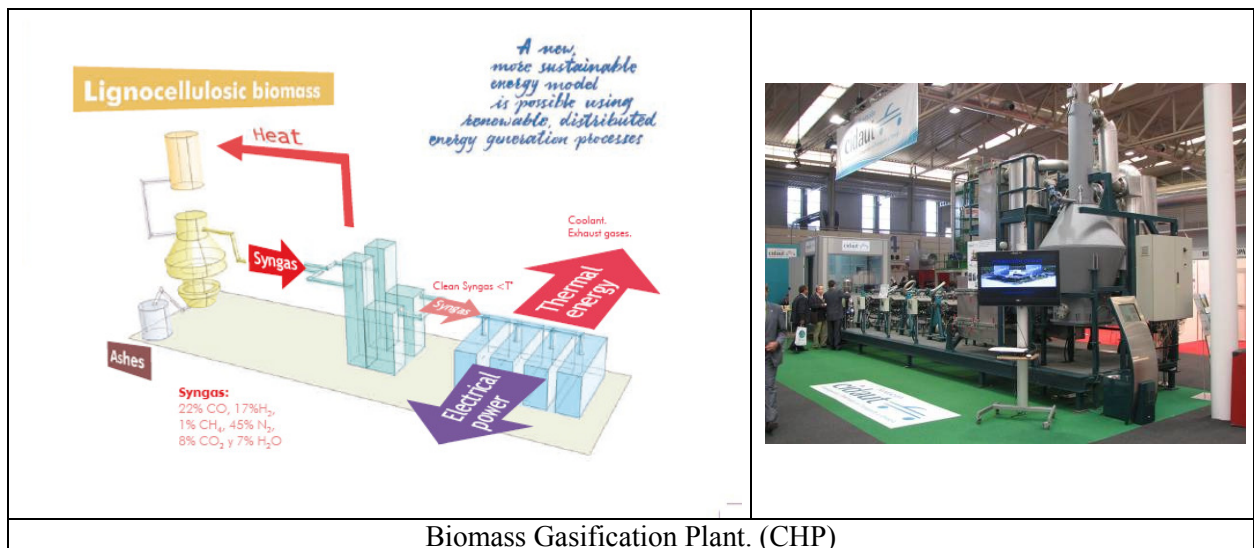
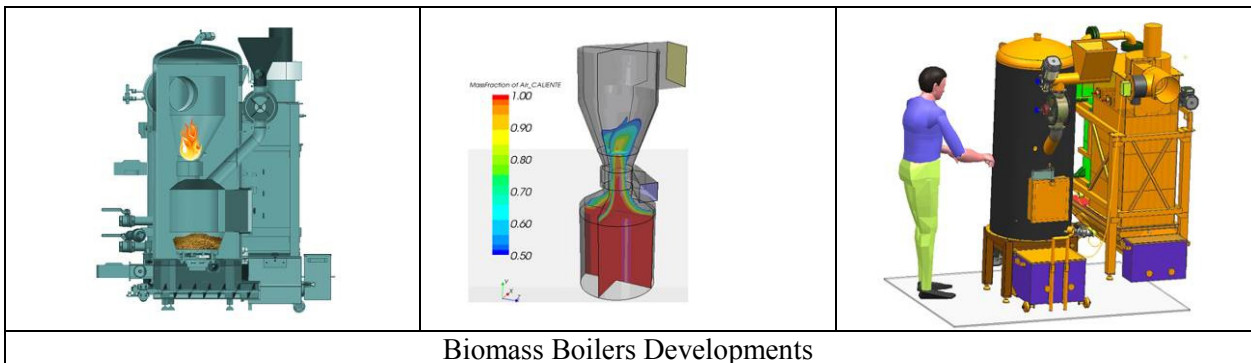
Date (DD-MM-YY)

- (*) **Description of the expertise offered (up to 1000 characters)**

CIDAUT is looking for established consortiums or groups already interesting in the following topics.

LCE 2 – 2015: Developing the next generation technologies of renewable electricity and heating/cooling

CIDAUT has developed technology for boilers and for CHP systems based on cogeneration. CIDAUT has facilities able to be used within the project as test benches and a biomass plant which could be used for testing different types of feedstock.



Moreover, other skills and capabilities necessary for the project are also able to be used for this project proposal. Such as CFD codes, emissions measurements and boiler test benches and monitoring services.

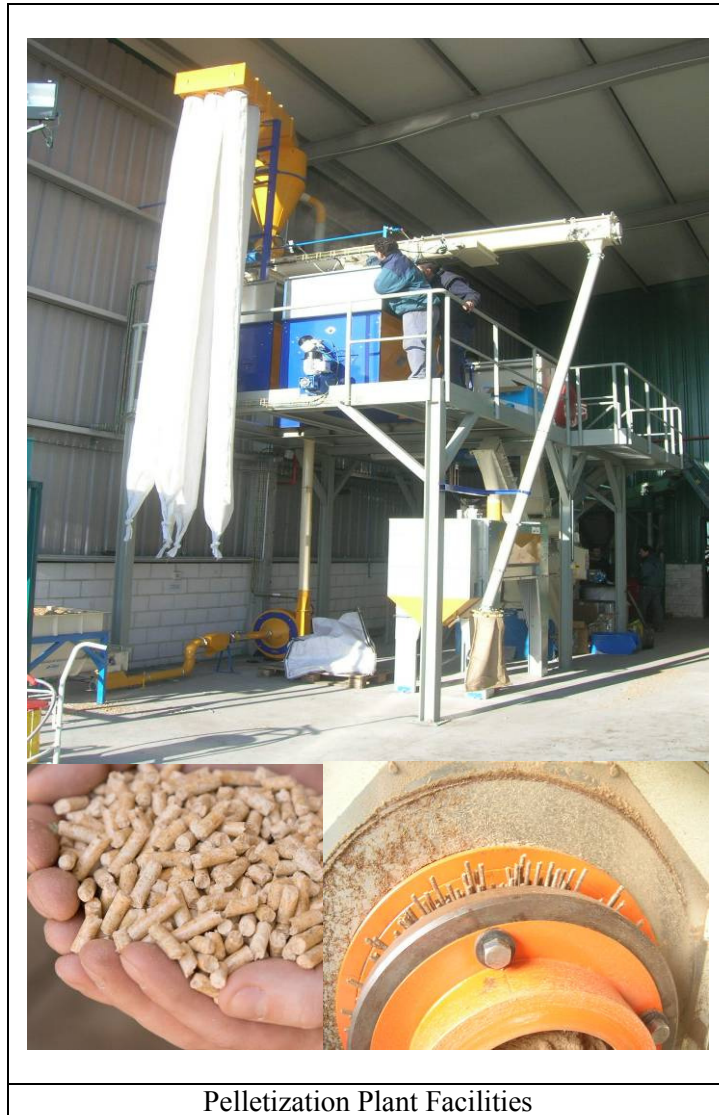
The purpose of the topic is to try and tests new feedstock to supply these systems, currently from less quality and cheaper than those already used. It is very interesting for the development of these systems already patented to test and develop for new and innovative feedstock.

CIDAUT is able to involved industrial partners from the installation of these kind of systems and other possible sectors.

WASTE-7-2015: Ensuring sustainable use of agricultural waste, co-products and by products

CIDAUT has worked in the development of new uses of biomass feedstock such as agricultural residues and by-products. One of the possible uses is to develop the mixtures and technology to produce high quality biomass pellets which could be used for domestic boilers.

CIDAUT has facility and skills to design and prepare this type of biomass fuels.



CIDAUT is able to involved industry partners within H2020 proposal from the agricultural and industry side.

WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication

CIDAUT suggest working on the reuse of gray water from households saves as precious as is the case of water resource.

To reuse these gray water (from cleaning systems type washing machine and dishwasher and showers) to be subjected to treatment processes so that the water will meet with the RD1620 at Spanish level but also the Water directive. These establish the parameters and values that you meet the water depending on the end use of the treated water will.

One of the most novels for wastewater treatment techniques is photocatalysis. This technology employs photocatalysts used being the TiO₂, the activation requires excitation by radiation. The most commonly

used photocatalysts UV radiation, but investigations are underway where these catalysts can work across the range of sunlight: UV + visible.

The principle of this type of process is in the oxidation of organic matter present in the water by releasing hydroxyl radicals generated from the catalyst which are highly oxidizing. This achieves remove organic matter and microorganisms in the water.

Photocatalysis has traditionally been used for the removal of microorganisms called "persistent" or difficult to degrade, so the use of technology in the purification of gray water is a technological novelty.

CIDAUT suggest working on the design and development of a test bench for this purpose. Moreover, CIDAUT is able to involved industry partners from water and construction sector within the H2020 proposals.

LCE-21-2015 Modelling and analysing the energy system, its transformation and impacts

The objective is to generate awareness about renewable technologies applicable production and storage of energy from renewable energy resources for efficient operation isolated hybridized conventional networks. This knowledge will help in the future design (1), size (2), running (3) management (4) and keeping (5) facilities for energy supply in isolated adjusted both energy resources and their evolution, energy demand as required at each time.

CIDAUT suggest working on the micro and mini grids and particularly focused on the rural areas where there is a great potential of replication and installation of new energy grids. CIDAUT could involved in this area industry partners from many renewable energy technologies, ESCO (Energy Services Companies) and construction sectors.

- **Keywords describing the expertise offered (up to 10 words)**

LCE 2 – 2015: Developing the next generation technologies of renewable electricity and heating/cooling

Biomass, feedstock, gasification, boiler

WASTE-7-2015: Ensuring sustainable use of agricultural waste, co-products and by products

Biogas, pellets, biomass

WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication

Gray water reuse, test bench, photocatalytic, etc.

LCE-21-2015 Modelling and analysing the energy system, its transformation and impacts

Energy integration, mini and micro grids, smart grids

- **(*) Relevant topic in work programme**

LCE 2 – 2015: Developing the next generation technologies of renewable electricity and heating/cooling

WASTE-7-2015: Ensuring sustainable use of agricultural waste, co-products and by products

WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication

LCE-21-2015 Modelling and analysing the energy system, its transformation and impacts

- **Former participation in FP or other international cooperation projects**

CIDAUT has experience in the management and participation within European Projects of the FP7, Clean Sky and other European programmes. CIDAUT has been involved within the JTI as a full member since it was launched and it has participated in different projects related to hydrogen.

Organisation information

Organisation and country:

Fundacion CIDAUT. Research and Development in Transport and Energy (Spain)

Type of organisation:

Enterprise SME Academic **Research institute** Public Body Other:

Former participation in FP European projects?

Yes No

Web address:

www.cidaut.es

Description of the organisation:

Fundacion CIDAUT is a non-profit foundation, whose aim is to foster the competitiveness and the industrial development of the enterprises of the transport and energy sector and strengthen the industrial tissue through the promotion of their technological capabilities, so as to enable them to develop new products and processes.

Energy and Environment Area

CIDAUT researches in order to develop equipment and plants for reusing the gas obtained from agricultural and forest lignocellulose residue gasification in reciprocating internal combustion engines and its associated electricity production. It also works on the design and modelling of fuel processors to obtain hydrogen from different fuels, and the definition of fuel cell characteristics in order to use them in cogeneration plants and transport applications (automotive, railway, etc.)

CIDAUT develops efficient processes for producing renewable sourced fuel suitable for use in thermal engines and its validation in its testing cells where it is also carried out the design and adaptation of systems and components of motors with different objectives such as antipollution standards, new fuels, better performance, etc

New diagnostic techniques are being investigated, design and development of diagnostic equipment for use in predictive maintenance to be used in industrial processes and transport fleets.

Theoretical tool development (models) and experimental (testing bench) for the design and trial of new products and processes. Use of simulation codes CFD for the development of new products and processes and validation of results by experimental tests.

Integral solutions are also provided for vehicle fleet maintenance, improving traditional processes and introducing new techniques.

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(*) -Mandatory