# IKERLAN TECH OFFER FOR CLEAN h2 PROJECTS

IKERLAN, Luis Diaz

Research centre

Ldiaz@ikerlan.es, 943712400

**Please send to cristina.garrido@cdti.es before 31st January**

**If necessary, presentations will be selected by the maturity of the project idea and its adequacy to the proposed topic**

# 1. IKERLAN's capacities

ikerlan
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

Cooperative-based R&D center

+400 people

Mondragon Corporation

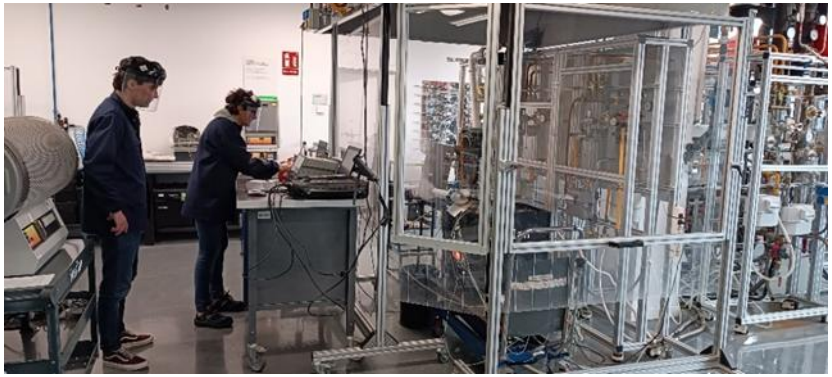
Basque Research & Technology Alliance

Combustion and burner design:

- Working on combustion (gas –including H2 blends-, liquid, solid biomass) for about 40 years
- Working on 100% H2 combustion for about 10 years
- Combustion CFD simulations for burner and appliance design
- Combustion lab, including H2 combustion
- Several projects for H2 burner development:
  - Domestic appliances (boilers, range tops…), including CFD, prototyping, testing and pre-certification, for clients like ORKLI, COPRECI, BSH
  - Industrial appliances, only at CFD level or lab-scale prototypes: heat treatment, secondary aluminium melting, industrial boilers

Other capacities (non-related to H2):

- Energy & Power Electronics
- Embedded systems, Cybersecurity, IA
- Mechatronics



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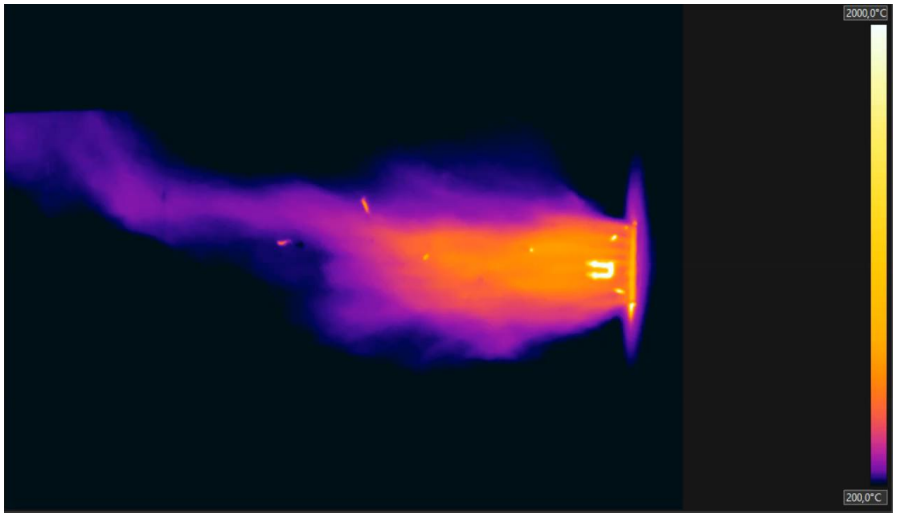
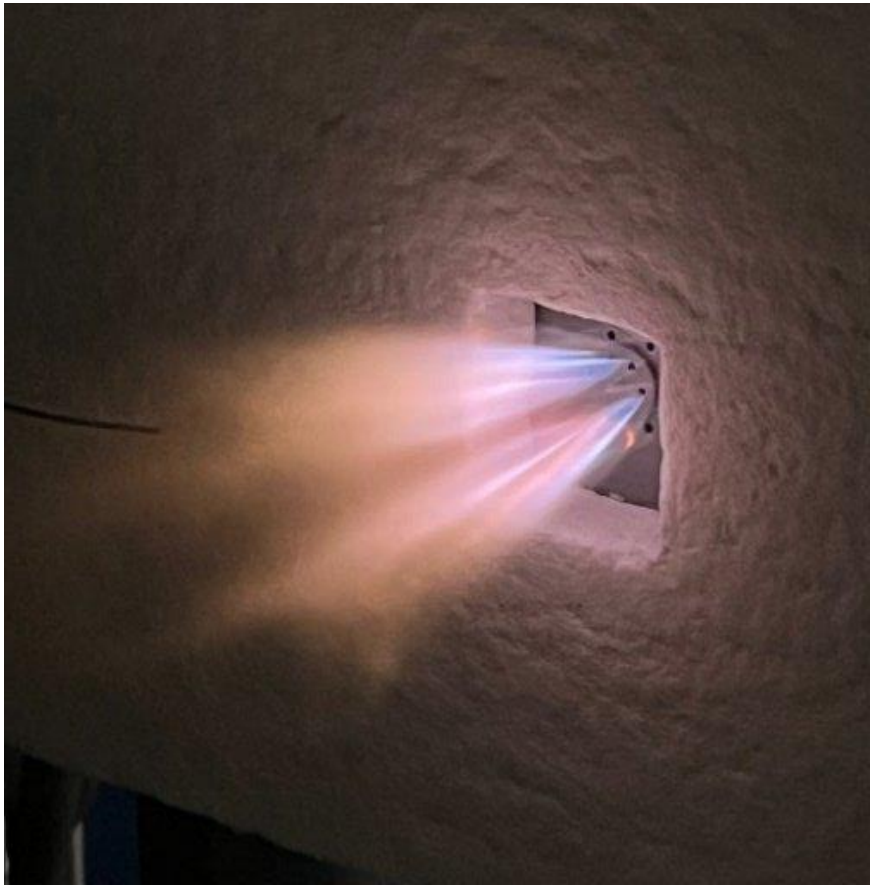



100% HYDROGEN + AIR MICROMIX BURNER



100% HYDROGEN + O2 BURNER

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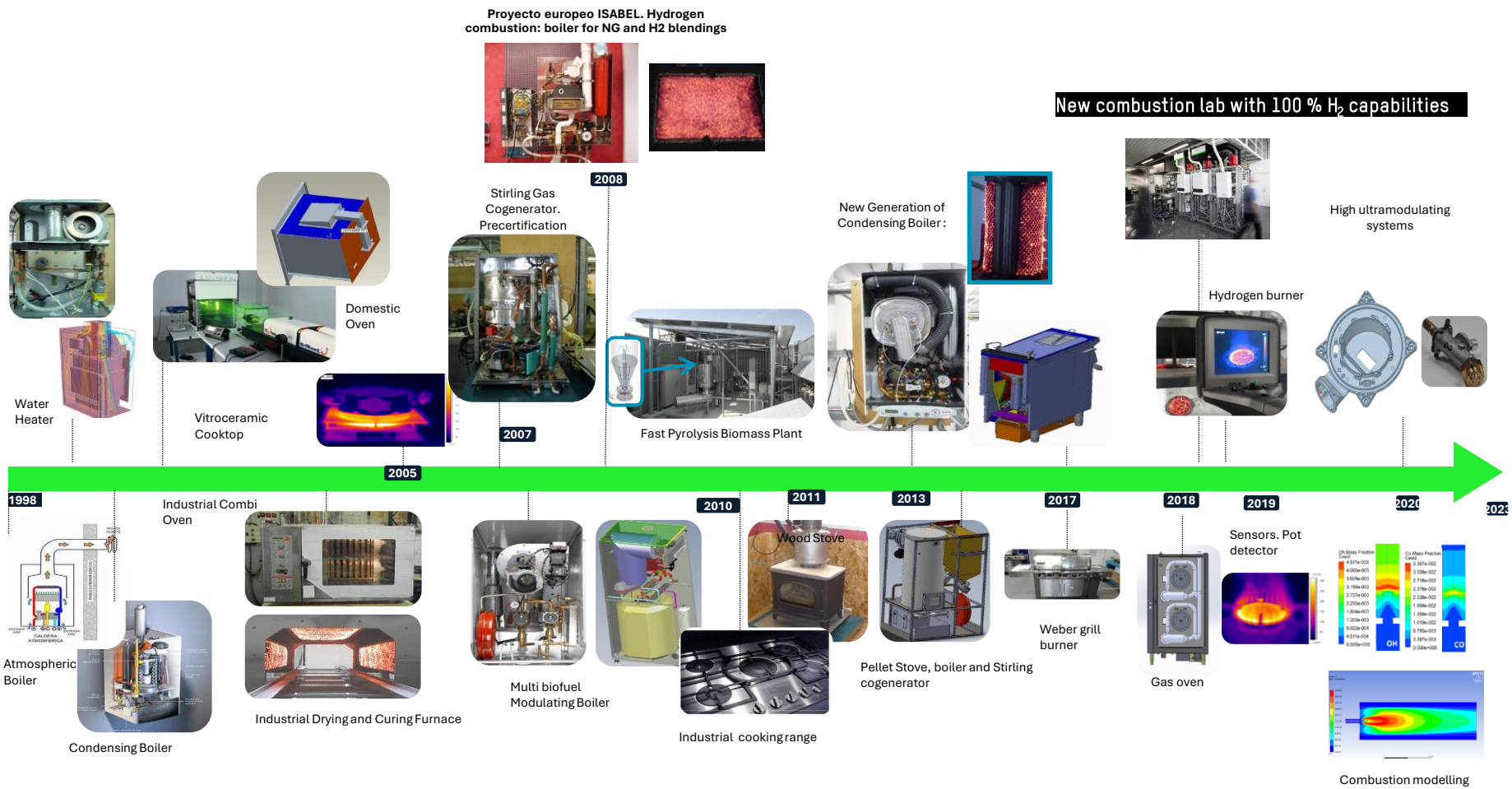

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## Our Customers:

# 2. Topics of interest in calls 2025

| Topic | Experience and Contribution |
|---|---|
| HORIZON-JU-CLEANH2-2025-01-06 Innovative hydrogen and solid carbon production from renewable gases/biogenic waste processes<br><br>• Topic goal: H2 and C production from biogenic waste.<br>• H2 produced can have impurities. High purity H2 is costly: some applications may not need such a purity. | *** Experience:**<br>• FP7NMP2-LA-2008-214395 H2SUSBUILD 2007-2014. http://www.h2susbuild.ntua.gr/ and many others (EU and national/regional).<br>*** Contribution:**<br>• Depending on the technologies used to transform biogenic wastes/biogas/biomethane/renewable gases into hydrogen, this hydrogen can contain impurities. Purifying the gas can be costly, so, if at least for some applications H2 gas of lower purity is allowed, this can ease the fulfilling of the topic goals.<br>• In case of burning the hydrogen, these impurities can negatively affect the applications, processes and products, i.e., can clog or prematurely degrade burners and components, promote harmful emissions, affect the quality of heat treated products, etc. IKERLAN can perform combustion calculations in order to adress the combustion features of the gas obtained.<br>• IKERLAN can also perform, in its Hydrogen Combustion Laboratory, experimental tests to asses the effects (mentioned above) of burning this "dirty" hydrogen, and then devise solutions to minimise or avoid them, and analise whether these solutions are more cost effective than cleanining the gas at the production site. For this, we can developo experimental tests at small scale (tens of kW) in our lab. |