

The background of the entire image is an aerial photograph of a dense forest with various shades of green. Overlaid on this is a large rectangular graphic. The graphic has a dark teal center where the text is located. This center is framed by a wide border with a purple-to-magenta gradient. Within this border, there are several diagonal streaks of light in orange, yellow, and green, resembling light trails or data paths.

# CRIGEN

**Research and Innovation Center  
in Gas and New Energy Sources**





# ENGIE Lab CRIGEN in a Nutshell...

ENGIE Lab CRIGEN is the corporate R&D center of the Group, dedicated to new energy sources (hydrogen, biogas and LNG), new energy uses in cities, buildings and industry of tomorrow, and emerging technologies (computer sciences and AI, robots and drones, nanotechnologies and sensors).

ENGIE Lab CRIGEN conducts operational R&D projects and develops pilots for the Business Units, corporate entities of ENGIE and external customers, in an effort to master tomorrow's technologies, bring them to maturity, and prepare the Energy Transition.

ENGIE Lab CRIGEN creates value through :

- Innovative low-carbon solutions for ENGIE's customers
- Innovative solutions to improve operational excellence of industrial assets

CRIGEN runs ENGIE Lab Singapore

CRIGEN covers 3 main areas:

New Gases

New Uses of Energy

Digital and Enabling Technologies



€35 million revenues, from 30 countries

180 employees

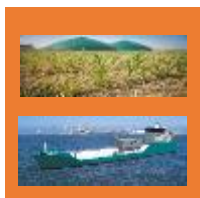
100 patents in portfolio

20 Testing Facilities and pilots

An international ecosystem of R&D and innovation Partners

A quality level that is ISO 9001 certified

# ENGIE Lab CRIGEN's Main Focus Areas



## New Gases

Biogas & Biomass

Hydrogen

LNG & Retail LNG



## New Uses of Energy

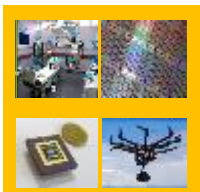
Future Building and City

Future Industry

Energy Storage

Green Mobility  
(CNG, LNG, H<sub>2</sub>)

Societal &  
Environmental Impact



## Digital and Enabling Technologies

Artificial Intelligence,  
Computer sciences

Smart Grid

Nanotech, Sensors

Drones & Robots

# Three Types of Activities to Support ENGIE's Development on the Energy Transition

## **Collaborative projects and demonstrators (multi-year projects)**

- ✓ Collaborative projects, demonstrators, industrial pilots, etc., generally with industrial and academic partners
- ✓ Co-financed by ENGIE, partners and public subsidies

## **Techno developments and assessments for new businesses**

- ✓ Technological (co)-development or assessments of products, and integration of solutions for end customers
- ✓ Support for the development of BUs' new offers
- ✓ Development of the ENGIE Toolbox (sizing and costing tools, modeling tools, data platforms, etc.)
- ✓ In close collaboration with BUs, Métiers, KP and ENGIE Fab

## **Technowatch, Ecosystems management, Standardization & Regulation**

- ✓ Technowatch, observatory of technologies
- ✓ Partnerships and R&I ecosystems
- ✓ Technological support for the Group: advice and studies on request (due diligence, etc.)
- ✓ Technological Knowledge transfer
- ✓ Support for standardization and regulation
- ✓ Industrial property issues





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