



Press Release

Total and IFPEN Team Up to Accelerate Carbon Reduction R&D

Paris, July 9, 2019 — IFP Energies Nouvelles (IFPEN) and Total announce that they signed a strategic R&D partnership yesterday, that includes an agreement to endow a chair at the IFP School, on carbon capture, utilization and storage (CCUS) and technologies to curb CO₂ emissions. The roughly €40 million partnership covers a period of five years.

The agreement has two parts:

- **A strategic R&D partnership on carbon capture, utilization and storage (CCUS)** aims to reduce the cost of infrastructure and improve the CCUS chain's energy efficiency to secure its large-scale deployment. The partnership steps up the long-standing collaboration between Total and IFPEN by marshaling additional resources. The research will focus on fields related to new materials, process scale-up, underground carbon storage in deep saline aquifers, technical and economic feasibility studies and the quantification of environmental benefits for the entire CCUS chain.
- **The Carbon Management and Negative CO₂ Emissions Technologies to Net-Zero Carbon Future Chair** will help train a new generation of international researchers and experts who will develop technologies to reduce carbon in the atmosphere. Overseen by a scientific committee comprised of world-renowned, independent experts, the chair will bring together seven doctoral and five post-doctoral researchers for five years.

Following the signature of the agreement, Patrick Pouyanné, Chairman and CEO of Total, stated: *"We are delighted to accelerate the R&D partnership between Total and IFPEN. We want to pool our innovation capabilities to reduce the cost of CCUS technologies and improve their efficiency — both of which are necessary for large-scale deployment. Total wants to help make the planet carbon neutral and boost the competitiveness of an industrial-scale CCUS sector."*

Didier Houssin, Chairman and CEO of IFPEN, commented: *"IFPEN has been actively researching carbon capture, utilization and storage technologies for nearly 20 years. Our strengthened partnership with Total will allow us to combine our teams' skills and know-how*

with Total's and thus to accelerate the deployment of CCUS technologies, which are a key solution for drastically cutting CO₂ emissions.”

According to the International Energy Agency's (IEA) Sustainable Development Scenario, which corresponds to a less than 2°C rise in the global average temperature, it will be necessary to capture and store 6 billion tons of carbon by 2050. This will require developing viable, cost-competitive CCUS technologies.

About IFPEN

IFP Energies nouvelles (IFPEN) is a major research and training player in the fields of energy, transport and the environment. From research to industry, technological innovation is central to all its activities, structured around three strategic priorities: sustainable mobility, new energies and responsible oil and gas.

About Total

Total is a major energy player that produces and markets fuels, natural gas and low-carbon electricity. Our 100,000 employees are committed to better energy that is safer, more affordable, cleaner and accessible to as many people as possible. Active in more than 130 countries, our ambition is to become the responsible energy major.

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