



SAFT

In brief 2024

We energize the world.

On land, at sea, in the
air, and in space.



TotalEnergies

Summary



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About Saft

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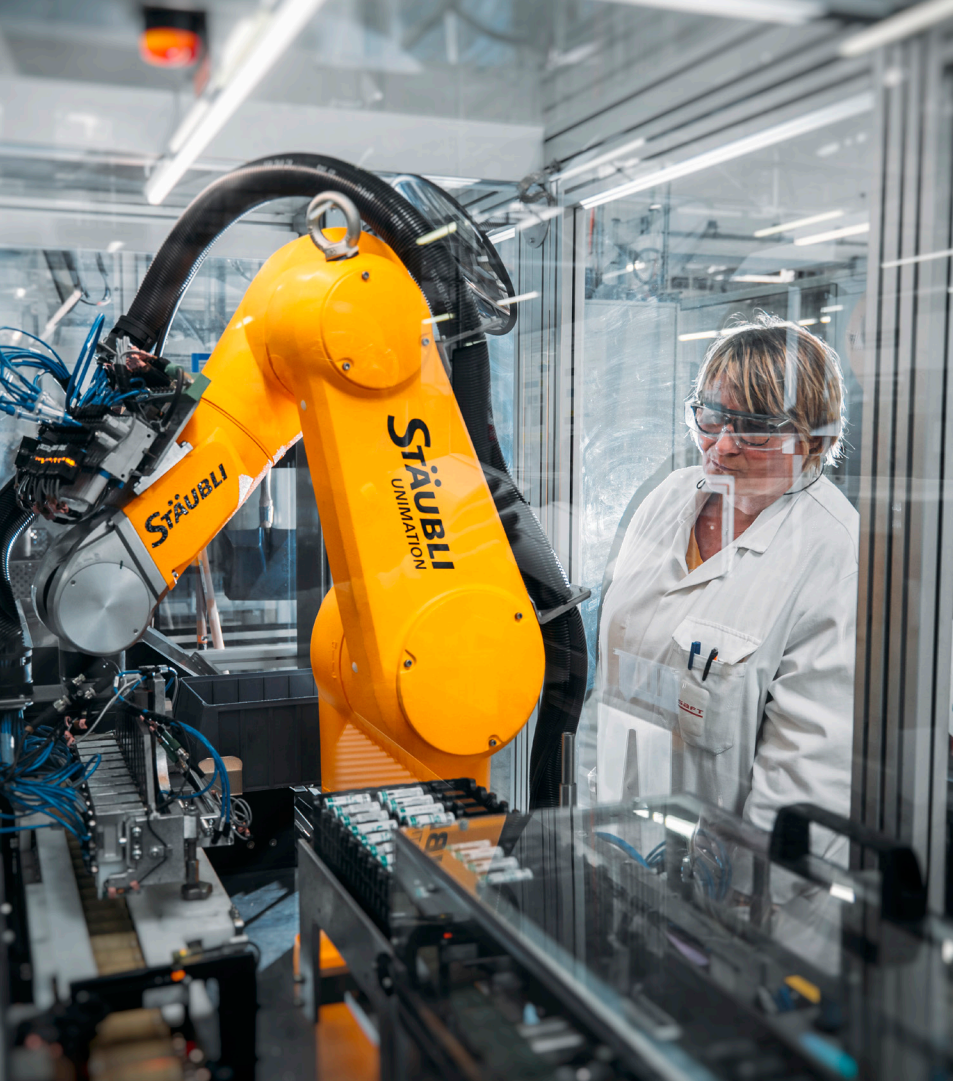
Our divisions

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1 About Saft





About Saft

Saft specializes in **advanced technology battery solutions for industry**, from the design and development to the production, customization and service provision.

For more than 100 years, Saft's longer-lasting batteries and systems have provided critical safety applications, back-up power and propulsion for our customers.

Our innovative, safe and reliable technology delivers high performance **on land, at sea, in the air and in space.**

Saft is powering industry and smarter cities, while providing critical back-up functionality in remote and harsh environments from the Arctic Circle to the Sahara Desert.

Saft is a wholly owned subsidiary of TotalEnergies, a broad energy company that produces and markets energies on a global scale: oil and biofuels, natural gas and green gases, renewables and electricity.

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Saft worldwide

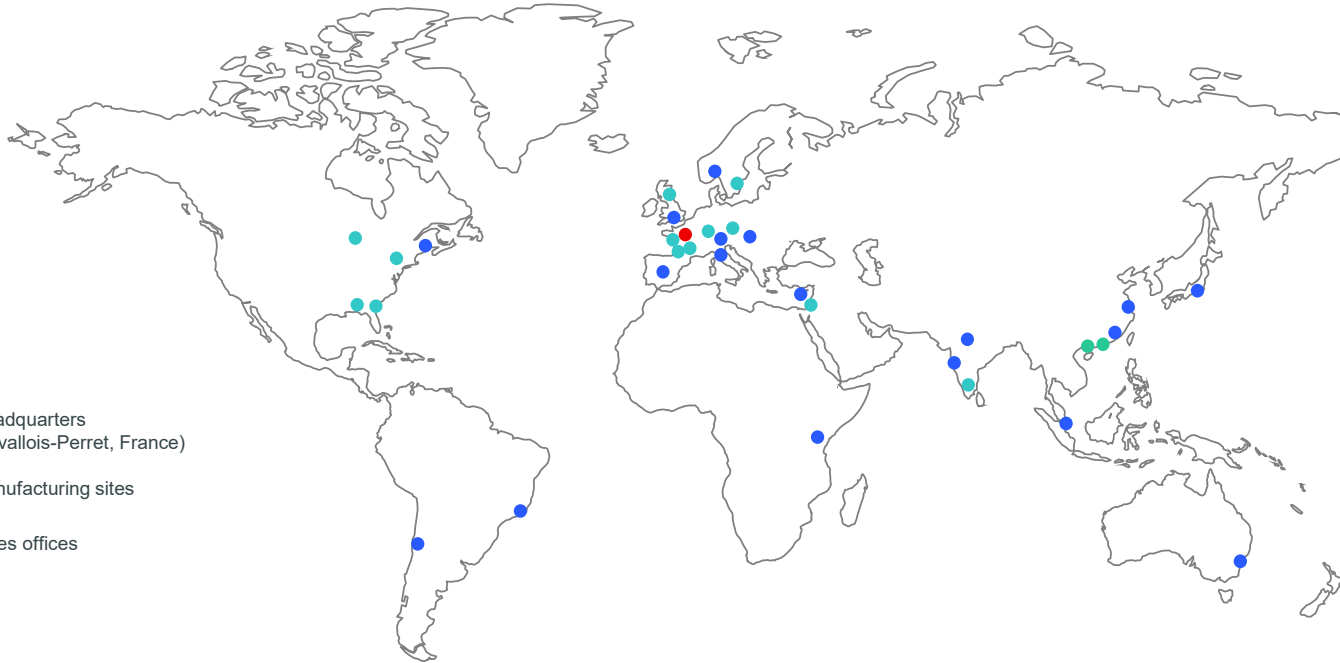


17
Manufacturing sites

19
Countries

31
Sales offices

- Headquarters (Levallois-Perret, France)
- Manufacturing sites
- Sales offices



Saft: key figures



 **€1.2 B** revenues in 2023
+18% vs 2022

 **4300** employees
69% men, 31% women & 56 nationalities

 **3000** customers in 2023

 **€101 M** invested in
R&D in 2023

 **42** patents filed in 2023

A wide range of offerings designed for specific needs



**Aerospace
& Defense**



**Buildings &
Industries**



Oil & Gas



**Telecom &
Networks**



Energy



IIoT *



Transportation

Four divisions, a multitude of solutions



Aerospace, Defense, & Performance

- Communication, scientific and observation satellites
- Satellite launchers, space vehicles
- Defense ground vehicles
 - Racing
- Commercial and military aircraft



Connected Smart Energy (CSE)

- Smart metering
- Industrial Internet of Things
- Electronic Toll Collection
 - Asset tracking
- Security systems



Energy Storage Systems (ESS)

- Storage of renewable energy
- Support grid stability
- Frequency regulation
- Commercial & industrial back-up
- End user peak shaving



Industry, Mobility & Infrastructure (IMI)

- Utilities & substations
- Industrial buildings
 - Data Centers
- Off-road vehicles
- Rail rolling stock & trackside

Some key customers



Mobility

Oil & Gas

Rail

Telecom

Utilities

IIoT

Medical

Metering

Microgrids C&I *

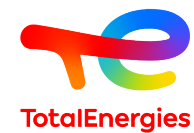
Utility Energy Storage

Aviation

Defense

Marine

Space



2 Our divisions: 4 pillars of progress





01.

Aerospace, Defense, & Performance (ADP)

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Aerospace, Defense & Performance



Primary applications



Aerospace

- Backup power & emergency systems
- Engine & turbine starting for airplanes
- Communications, scientific & observation satellites
- Satellite launchers & space vehicles



Defense

- Weapons & torpedo systems
- Military aircraft
- Armored vehicles



Performance

- Formula 1 & Formula E
- Workboats & ferries
- Cruise liners & luxury yachts
- Cargo & offshore vessels



Technologies

- Nickel batteries for aviation
- Lithium-ion batteries
- Silver-based batteries for military equipment



Highlight 2023



EUMETSAT

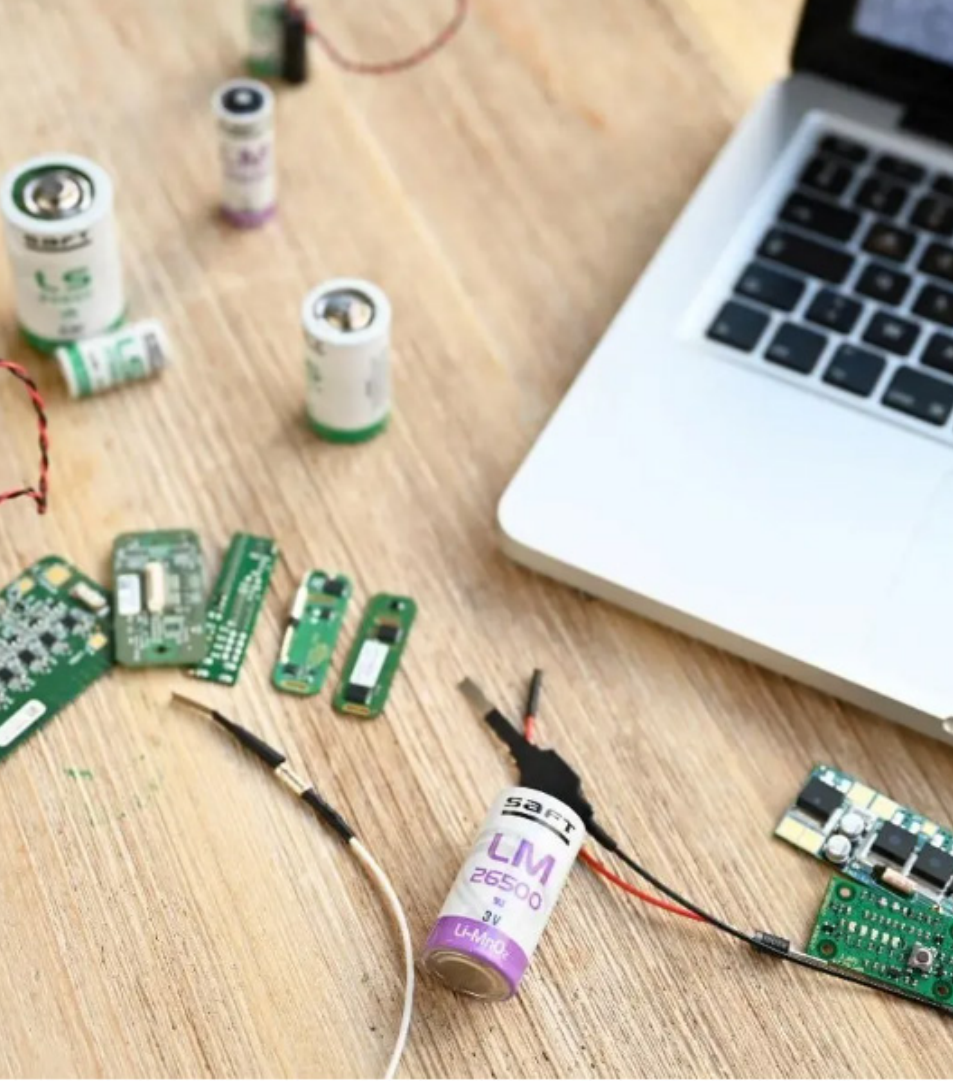
Saft provided lithium-ion batteries for EUMETSAT's Meteosat Third Generation program.

These batteries power six satellites, improving the accuracy of weather forecasts.

Saft batteries offer a constant flow of weather data, even during solar eclipses in geostationary orbit.

They will support two types of satellites over the course of the 20-year mission, helping to gather visual data, and monitor water vapor and atmospheric gas.





02.

Connected Smart Energy (CSE)

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Connected Smart Energy



Primary applications



- Smart metering
- Electronic toll collection systems (ETC)
- E-call
- Asset tracking
- Industrial Internet of Things (IIoT)
- Medical devices
- Portable military applications
- Oil drilling
- Environmental monitoring
- Security systems

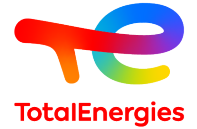


Technologies

- Primary lithium batteries
- Li-SOCl₂
- Li-MnO₂
- Li-SO₂
- Hybrid
- Lithium-ion batteries



Highlight 2023



Wi-CARE

Vibration analysis is essential to keep machines in good condition. It can detect problems before they become critical, and provide a real-time view of the state of rotating machines.

Our client I-care launched Wi-care™ 130 Next Gen, a wireless solution for monitoring predictive maintenance and vibration analysis.

Each Wi-care™ 130 device uses a Saft LS 26500plus battery, which is ideal for sensors and measurement equipment.

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03.

Energy Storage Systems (ESS)



Energy Storage Systems



Primary applications



- Energy storage solutions for network services & renewable energy services
- Micro-grids for commercial & industrial applications



Technologies

- **Lithium-ion batteries**



Highlight 2023



MYRTLE

Saft played a central role in commissioning Myrtle Solar, TotalEnergies largest solar power plant in the United States.

Saft provided 114 high-technology containers that store a total of 225 MWh, thereby helping stabilize the network.

These batteries allow Myrtle to produce enough green energy to power the equivalent of 70,000 households, and to meet the needs of TotalEnergies industrial sites.





04.

Industry, Mobility & Infrastructure (IMI)

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Industry, Mobility & Infrastructure



Primary applications



Industry

- Backup power, starting power, & cycling applications in the oil & gas industry
- Power generation & distribution



Mobility

- Electrification of industrial vehicles
- On-board backup power for lighting, air conditioning, communication systems
- Critical safety rail applications (emergency braking, door opening systems)
- On-board rail traction systems



Infrastructure

- Railway signaling systems
- Backup power for the telecommunications industry
- Data centers



Technologies

- **Nickel batteries**
- **Lithium-ion batteries**



Highlight 2023



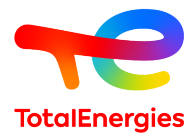
Siemens Mobility

In 2023, Saft equipped SIEMENS MIREO PLUS H hydrogen-powered trains with two battery systems, each providing 100 kWh of energy.

These batteries provide sufficient traction for the train's acceleration before the hydrogen takes over.

The project was led from Bordeaux, France, with production in Jacksonville, U.S. and assembly in Nersac, France.

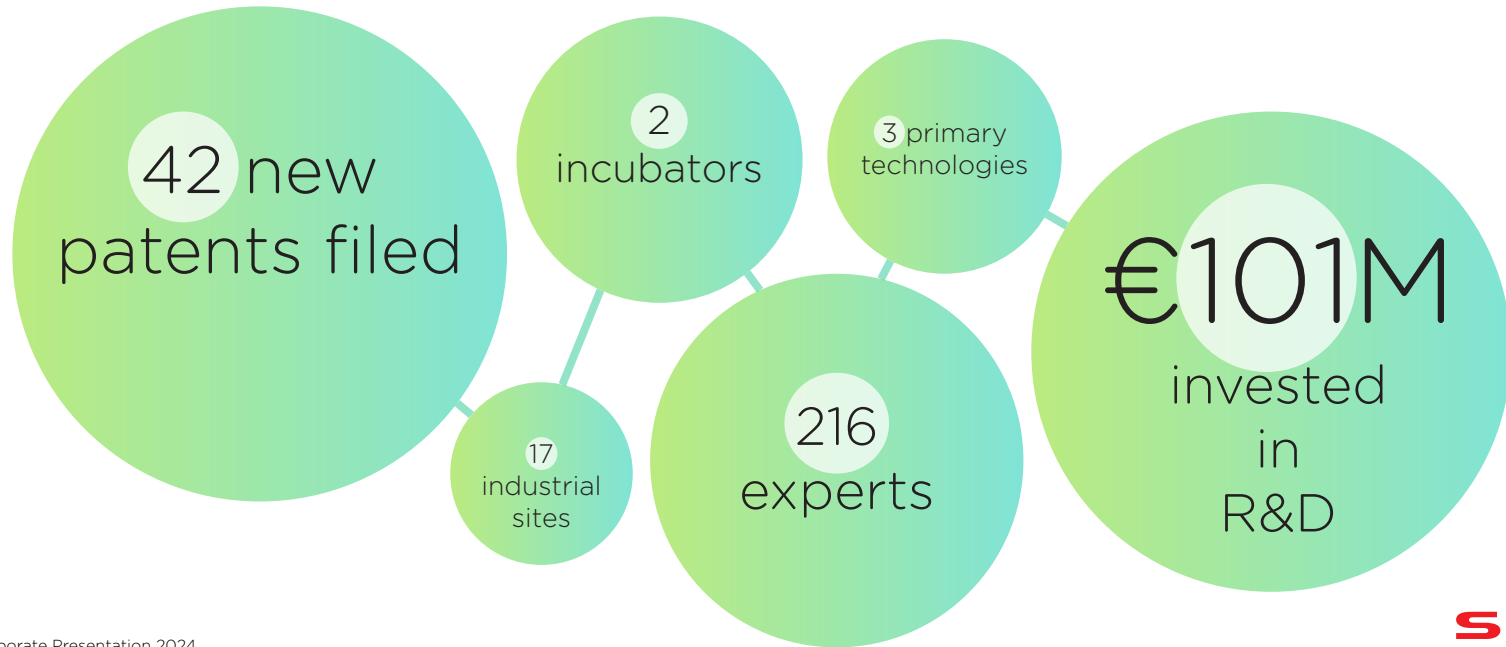
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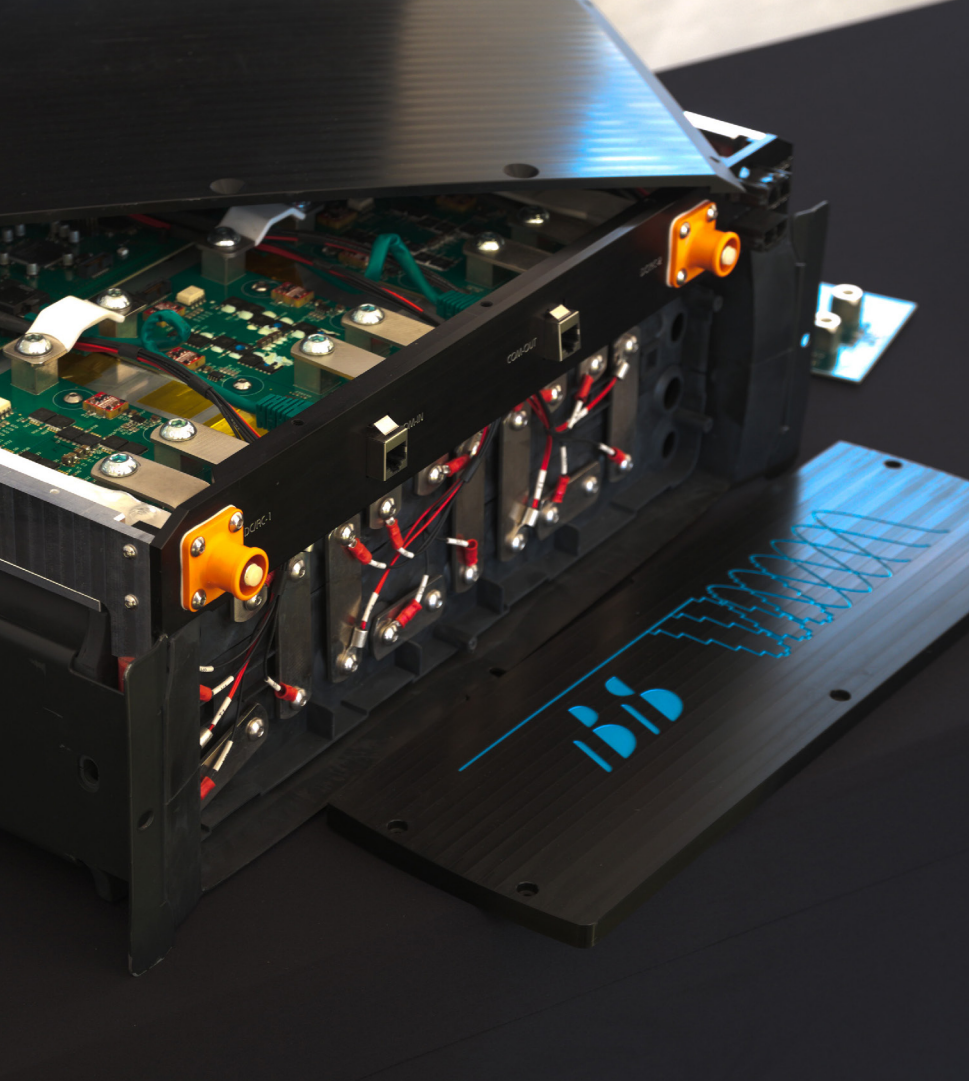


3 Goals & Values



Key figures for innovation and expertise





IBIS Project



In July 2023, Saft, CNRS and Stellantis officially presented the IBIS battery (Intelligent Battery Integrated System).

IBIS integrates the electric charger and inverter functions into the lithium-ion battery modules replacing them with electronic conversion cards thereby freeing up space in the vehicle and reducing cost.

A demonstrator, operational since 2022, is the subject of numerous patents and marks a major break from electrical energy conversion systems currently used.

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ELIAS project



In partnership with a consortium of academic and industrial actors, Saft is working on the ELIAS project to create “solid-state” lithium batteries. These batteries offer enhanced performance without compromising safety.

The ELIAS project, supported by France 2030 and Bpifrance, is a response to the expected expansion of the battery market, which should quadruple by 2030.

Saft anticipates having an operational prototype in Bordeaux available in late 2024, marking a major step in the development of this technology.

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Program Net Zero



Goal



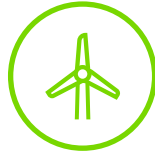
Reduce our environmental impact



Help our customers decarbonize



Implement circular economy throughout our operations



Procure sustainably



Develop people and contribute to society

In 2023



6M L
recycled water



-3.6%
carbon intensity
/unit produced



3/5
of waste recycled

Our values

On a daily basis, we rely on a set of values that guide our actions, support our corporate culture, and enhance our organization. They are at the heart of our way of working.





4 Governance & Organization



Saft management team



Hervé Amossé
Executive Vice President
Energy Storage Systems



Igal Carmi
Executive Vice President
Connected Smart Energy



Lenny Cypel
Executive Vice President
Industry Mobility & Infrastructure



Annie Sennet
Executive Vice President
Aerospace Defense & Performance



Cedric Duclos
CEO

Asset Management
Communications
Legal



Bertrand de La Noue
Chief Administrator & Financial



Kamen Nechev
Chief Technology & Innovation



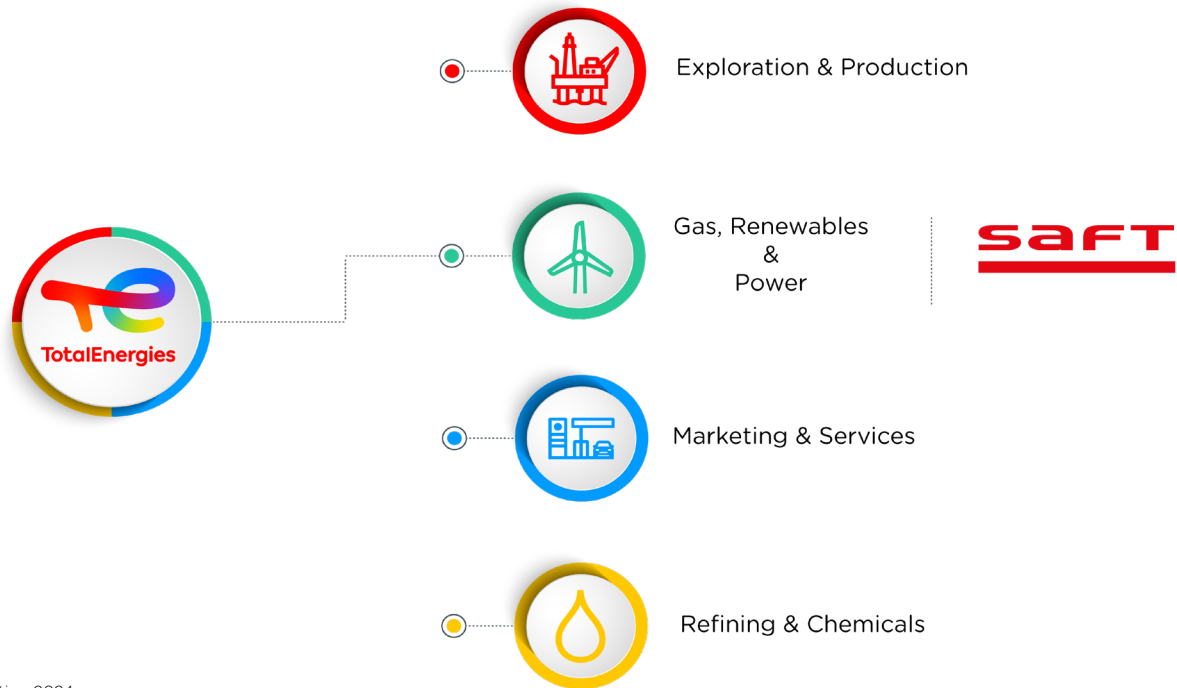
Eric Viriot
Chief Performance & Growth Officer

Human Resources Digital Systems & IT

Saft Excellence System HSE Sustainability & Government Affairs



Saft, a wholly-owned subsidiary of TotalEnergies since 2016





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