



INTEGRATING CLIMATE INTO OUR STRATEGY

Sustainable Future Forum

19th September 2019

Jeremy G Cutler

Head of Research & Development Department

Stavanger Research Centre - Total E&P Norge AS



Total is the world's **4th-ranked**
international oil and gas company*
and a **global leader** in low-carbon energy.

WITH OPERATIONS IN MORE THAN

130 COUNTRIES

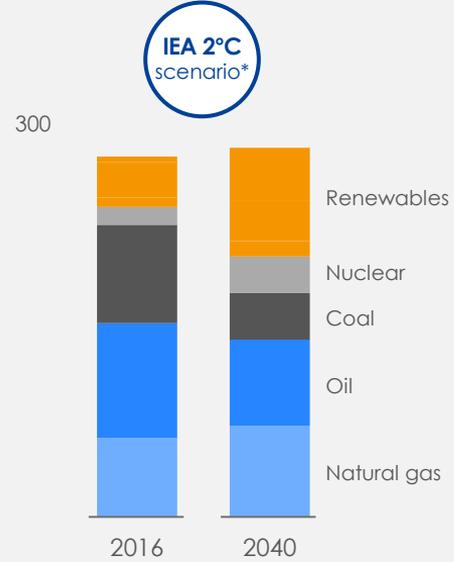
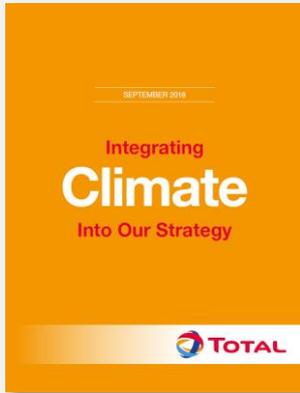
we have approx. **98 000 employees**
who are **COMMITTED TO BETTER ENERGY**

* Based on market capitalization in U.S. dollars at December 31, 2017

Integrating climate into strategy

Taking into account anticipated market trends

Global energy demand
Mboe/d



* IEA Sustainable Development Scenario

Focusing on **oil** projects with **low breakeven**



Expanding along the **gas value chain**



Developing profitable & sizeable **low carbon electricity** business



20 / NUMÉRO SPÉCIAL

Investir, le Journal des Finances / N° 2374 / 6 juillet 2019

Nous sommes aussi une partie de la solution !

Total La raison d'être du groupe est de contribuer à apporter au plus grand nombre une énergie plus abordable, plus disponible et plus propre.

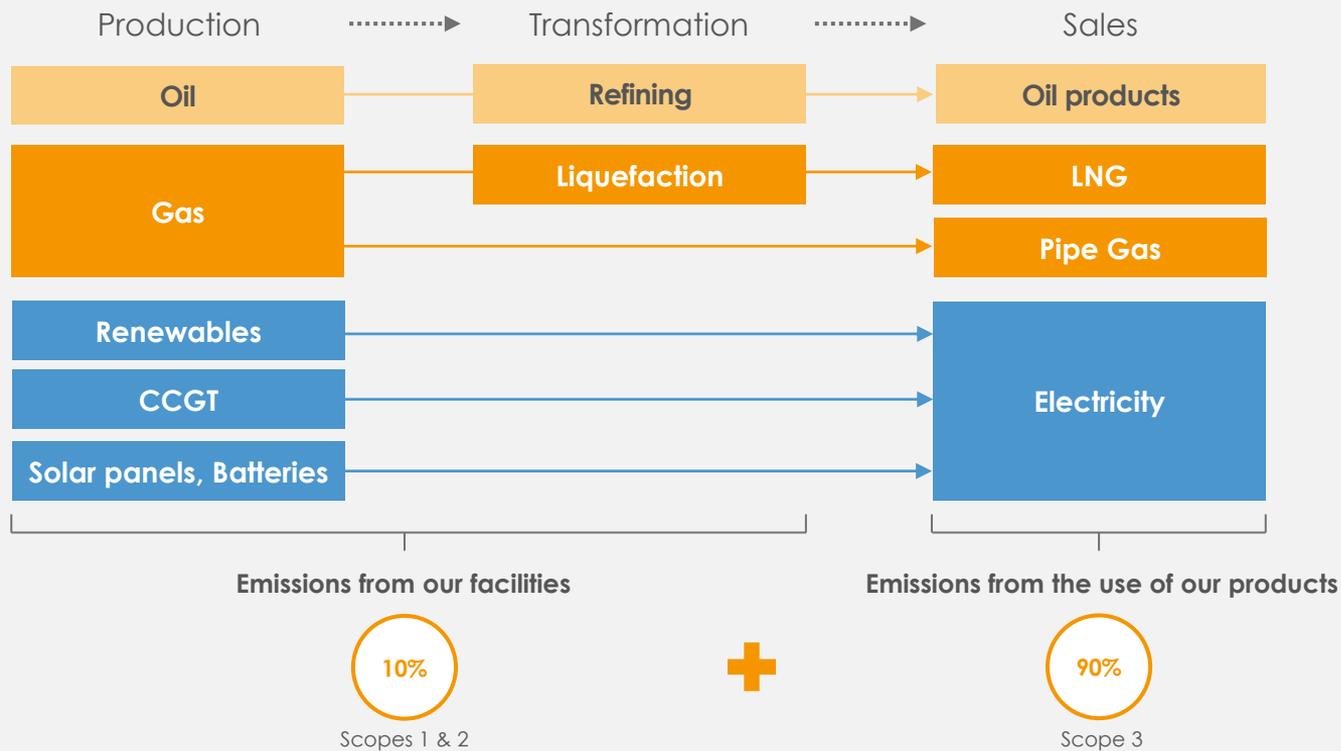


PATRICK POUYANNÉ,
PRÉSIDENT-DIRECTEUR
GÉNÉRAL

To become the Responsible Energy Major means providing energy that is affordable, reliable and clean.

Carbon Intensity indicator (gCO₂eq / kBTU) of our energy sales

Weighted average of scope 1+2+3 emissions of all energy products sold

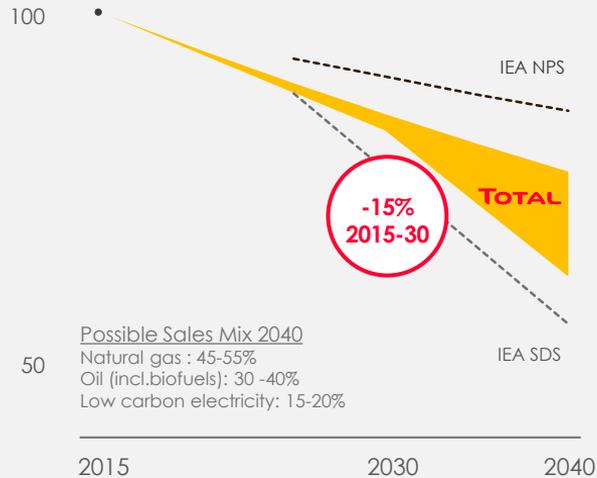


Reducing carbon intensity of our energy sales

Responsible contribution to tackle climate challenge

Carbon intensity

Base 100 in 2015 (75 gCO₂/kbtu)



NPS: New Policy scenario ~2.7°C by 2100
SDS: Sustainable Development scenario ~2°C by 2100

Further improving our **operations efficiency**

Growing in **natural gas**

Developing a profitable **low carbon electricity** business

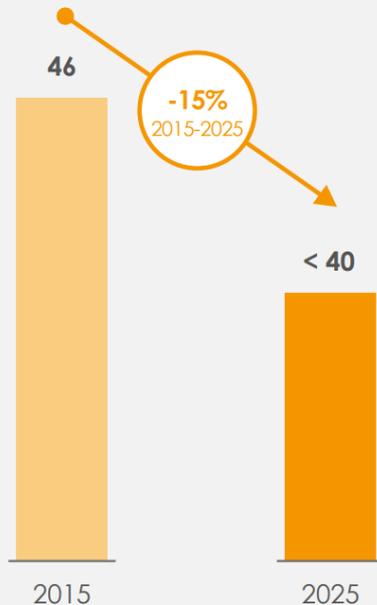
Promoting sustainable **biofuels**

Investing in **carbon sinks**
(natural sinks & CCUS)

Improving our operations

30% reduction of GHG emissions since 2010 on operated production

2015-25 Scope 1 & 2 emissions from operated facilities by E&P + RC + M&S Mt/y



Energy Efficiency improvement

- **Objective: -1% /year**

2010 - 17: 10% reduction achieved

- **Zero routine flaring by 2030**

2010 - 17 : > 80% reduction achieved

- **R&C: 300 M\$ capex investment plan**

Improve energy efficiency over 5 years

Further reduce methane emissions

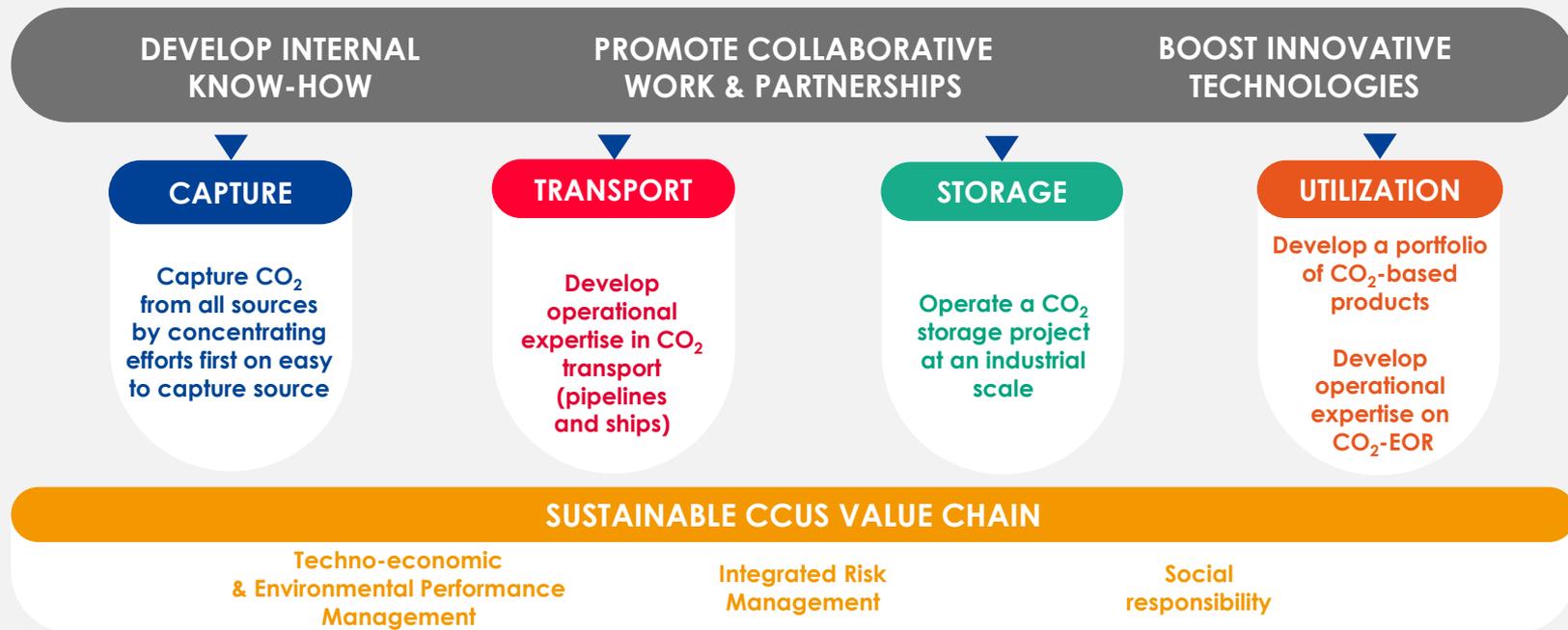
- 2017 Upstream emission intensity < 0.3%
- Reducing sustainably this intensity below 0.2%

Carbon pricing

- **30 \$/t CO₂ price** embedded in investment decisions
- Public campaigning through World Bank's Carbon Pricing Leadership Coalition

10% of our energy R&D budget for CCUS

Be a major CCUS technology integrator along the value chain **to participate to climate change mitigation** and **prepare for new business opportunities**



Technology Centre Mongstad

A world class testing facility for post combustion CO₂ capture technology

The largest CO₂ capture test facility in the world

- Capacity to treat up to 100,000 te / yr of CO₂
- 6 billion Norwegian Kroner initial investment
- TOTAL has a 7.5% share

Delivering test campaigns and advisory services

- Offers open and proprietary test campaigns
- Developing new test site for emerging technologies
- Relentless focus on health, safety and environment

TOTAL has committed to spend 10% of its R&D budget on CCUS

- TCM is a training ground for TOTAL secondees

Developing technologies to reduce the cost of carbon capture



Photo courtesy of TCM DA

The Northern Lights Project

Part of the Norwegian full-scale CCS project

Northern Lights in Norway

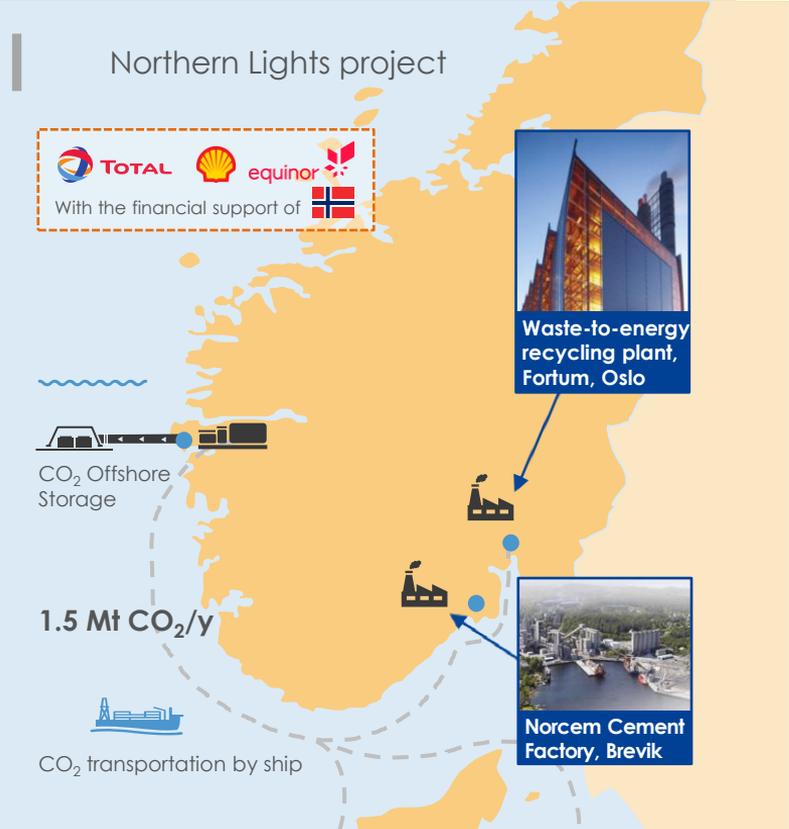
- First integrated industrial-scale project
- FID 2020/21- start up 2023/24
- Initial project 1.5 Mt/y

A demonstration project for CCS technology

- Capture of CO₂ from industrial sources in Oslo region
- Transportation of liquified CO₂ by ship to an onshore terminal on the Norwegian west coast
- Export of liquified CO₂ by pipeline to offshore storage location

Developing a storage solution for CO₂ from Europe

- Capacity up to 5 Mt/y
- 7 MOUs signed with potential industrial customers



Closing remarks

- Total aims at being **the responsible energy major integrating climate into its strategy**
- **Norway** and the North Sea region are **important** for the delivery of this strategy
- **Flagship CCS projects at Technology Centre Mongstad & Northern Lights**



DISCLAIMER and COPYRIGHT RESERVATION

The TOTAL GROUP is defined as TOTAL S.A. and its affiliates and shall include the person and the entity making the presentation.

Disclaimer

This presentation may include forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 with respect to the financial condition, results of operations, business, strategy and plans of TOTAL GROUP that are subject to risk factors and uncertainties caused by changes in, without limitation, technological development and innovation, supply sources, legal framework, market conditions, political or economic events.

TOTAL GROUP does not assume any obligation to update publicly any forward-looking statement, whether as a result of new information, future events or otherwise. Further information on factors which could affect the company's financial results is provided in documents filed by TOTAL GROUP with the French *Autorité des Marchés Financiers* and the US Securities and Exchange Commission.

Accordingly, no reliance may be placed on the accuracy or correctness of any such statements.

Copyright

All rights are reserved and all material in this presentation may not be reproduced without the express written permission of the TOTAL GROUP.