

Climate roadmap in action

February 2021

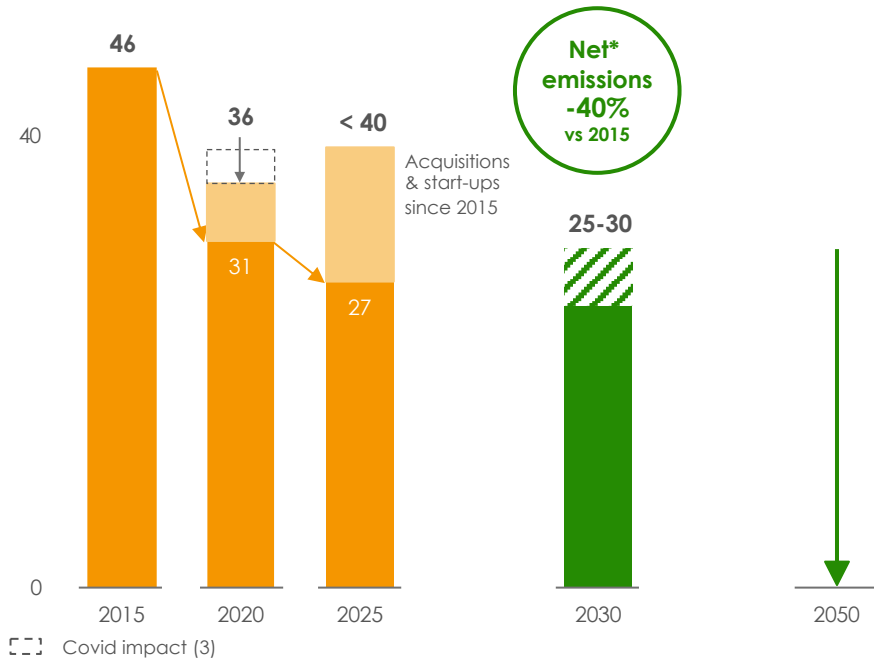


Reducing carbon emissions from operations



New commitment on Scope 1 & 2: -40% in 2030 vs 2015 while growing

Scope 1 & 2 emissions from operated oil and gas facilities
MtCO₂e



On the way to Net Zero across Total's worldwide operations by 2050

* Net of carbon sinks



CO₂ emissions reduction levers

Track CO₂ across all our operations



Energy Efficiency



Process electrification



CCS



Flaring reduction



Methane control

Manage our portfolio

Develop carbon sinks



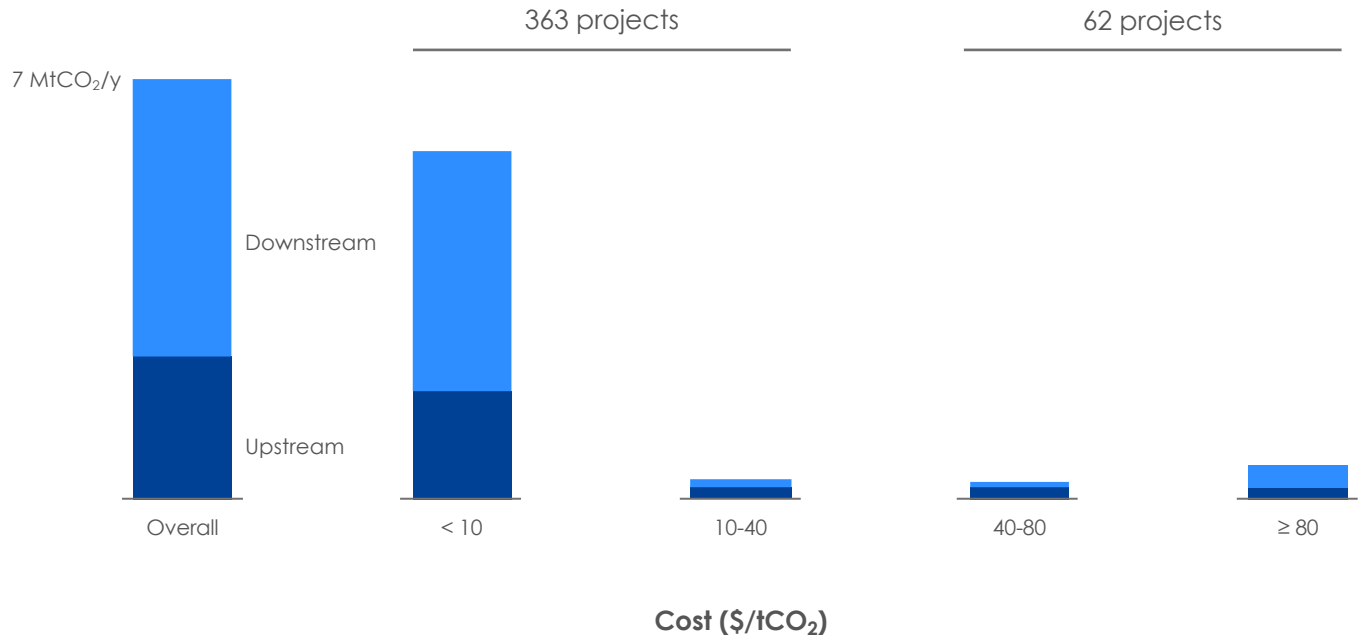
NBS

Developing strong internal low-carbon culture

2020: CO₂ fighting squad systematically reviewing all assets emissions

> 400 emission reduction projects already qualified

Carbon Footprint Reduction projects



Scope 1&2 reduction initiatives in Upstream

-2.5 MtCO₂/y emissions reduced by 2025 through 160 projects

Reduce flaring and venting



Reduce non-routine flaring

Stop routine flaring by 2030

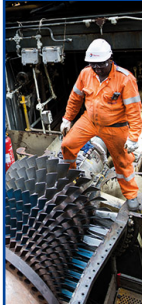
All new projects with closed flare

Congo / Gabon: venting rerouting and compression projects (-850 ktCO₂/y)

Nigeria: OML 100 Routine Flaring reduction (-240 ktCO₂/y)

-1.8 MtCO₂/y

Reduce fuel gas consumption through efficiency



Improve energy efficiency
Change operating practices

Angola: operating practices & power optimization (-140 ktCO₂/y)

Nigeria, Angola: Digital initiatives (-60 ktCO₂/y)

-0.7 MtCO₂/y

Reduce fuel gas consumption through electrification



Renewables & Electrification

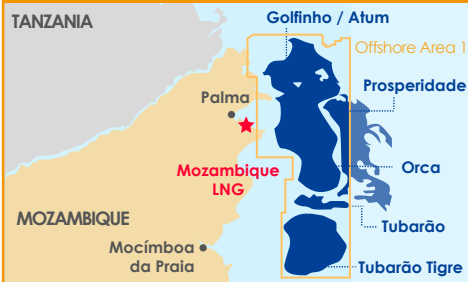
North Sea electrification: wind farm under study

Onshore sites solarization

Minimizing emissions from future Upstream projects

Mozambique LNG

Total 26.5% Op. - First LNG 2024



Optimizing power generation & demand

- Low-emission gas turbines
- WHRU¹ installation
- Boil-off gas compressors

On-site renewable electricity

- Solar farm project to power LNG liquefaction site

25 kgCO₂/boe

Average LNG: ~38 kgCO₂/boe

Mero 3 – Brazil

Total 20% - First oil 2024



Improving Mero 3 FPSO design

- CO₂ extraction from fuel gas + reinjection
- Gas compression optimization
- WHRU¹ installation

Carbon intensity reduced by 25% between Mero 1 and 3

15 kgCO₂/boe

Average oil&gas: ~20 kgCO₂/boe

Lake Albert – Uganda

Total 56.6% Op. - First oil 2024



Tilenga fuel gas optimization

- LPG extraction from production and local commercialization

EACOP pipeline power

- Solarization of pumping stations in Tanzania

13 kgCO₂/boe

Average oil&gas: ~20 kgCO₂/boe

¹ WHRU: Waste Heat Recovery Unit

Scope 1&2 reduction initiatives in Downstream

-4.5 MtCO₂/y emissions reduced by 2025 through 280 projects

Avoid



Processes electrification

La Mède biorefinery: green H₂ production

Go Green project: green power for all RC sites in Europe

-2.3 MtCO₂/y

Reduce



Energy efficiency in processes

Switch from fuel oil to natural gas for steam and electricity

Digital

-1.4 MtCO₂/y

Capture



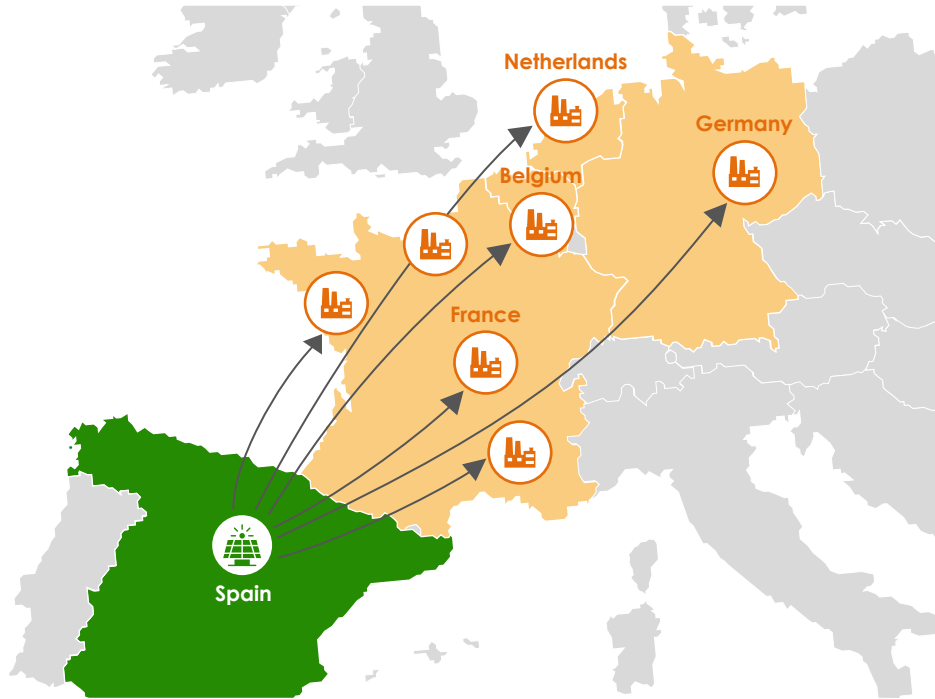
Zeeland refinery: CO₂ capture from H₂ production (SMR)

Antwerp refinery: CO₂ capture, integration with Antwerp@C project (> 2025)

-0.8 MtCO₂/y (ZR)

Greening all power used by our European operations

Reducing Scope 2 emissions in Europe by 2 MtCO₂/y



Large contribution to RC emissions reduction in EU

Our solar farms



Solar farms producing ~10 TWh by 2025

Selling excess power to 3rd parties

Our trading



Interfacing with local Power markets and Group entities

Our Total sites



Consuming ~6 TWh in operated industrial sites, commercial sites and offices

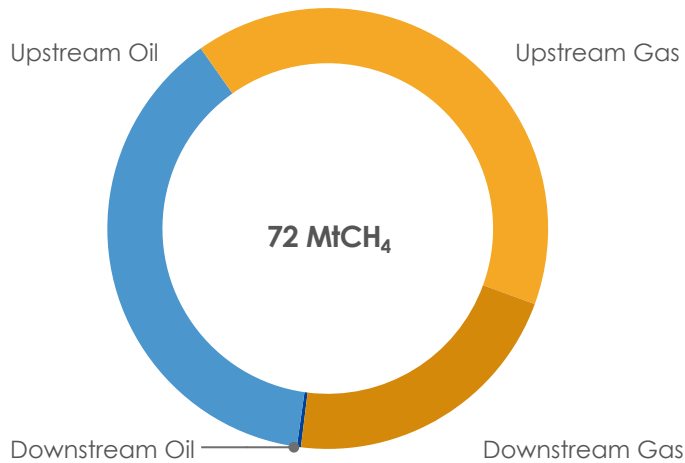
Focus on methane



Focus on Methane

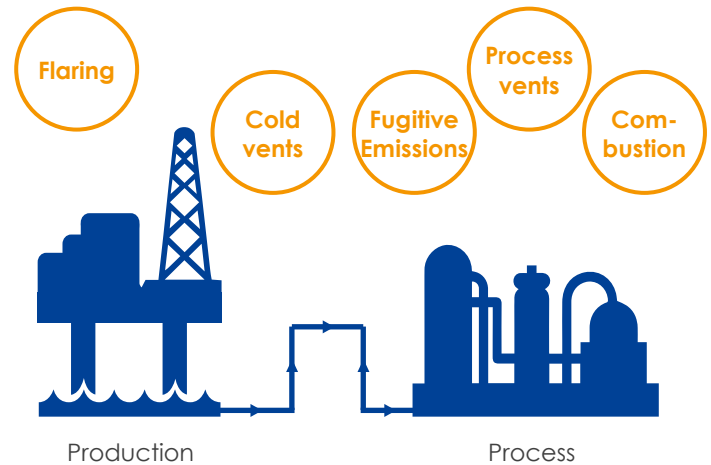
Dispersed, numerous sources, uncertain measurements

O&G worldwide methane emissions
(2020 - source IEA)



**Most emissions from E&P
and gas distribution**

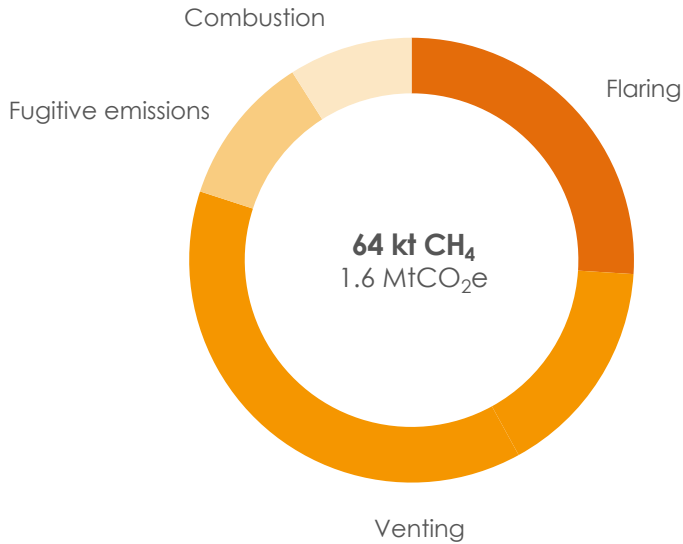
Upstream emissions sources



**Dispersed sources
but technically addressable**

TOTAL methane emissions

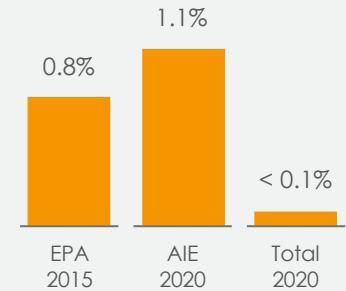
2020 methane emissions



Flaring and venting to be addressed as a priority

- 98% from E&P
- Methane **intensity***
 - < **0.20%** for oil & gas assets
 - < **0.10%** for gas assets

Upstream gas methane intensity



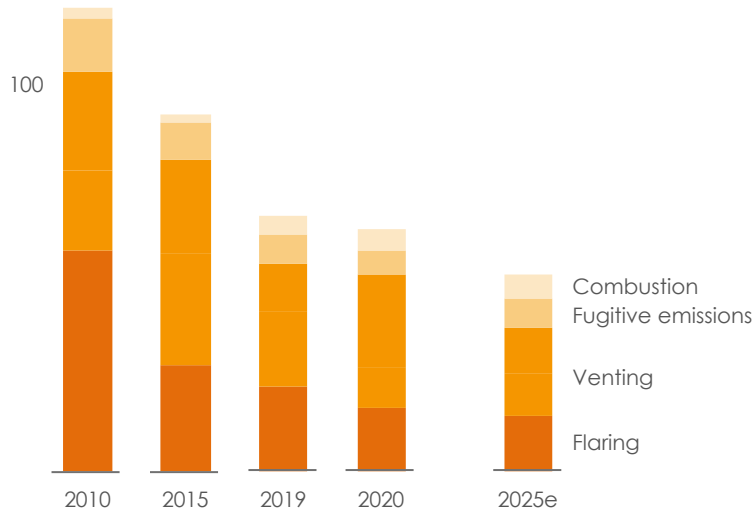
* Methane emission volumes / commercial gas volumes produced

Relentlessly decreasing methane emissions

Walking the talk and maintaining near-zero emissions

Upstream methane emissions

kt CH₄



Close to 50% decrease since 2010

< 0.20%
Intensity of
operated
O&G assets

< 0.10%
Intensity of
operated
Gas assets

Operational levers

For new projects, install **closed flare systems** and **exclude gas instrument** as well as **continuous cold venting**

Reduce gas instrumentation on all operated producing assets

Increase **frequency of Leak Detection & Repair campaigns**

Eliminate **routine flaring** by 2030

Examples of venting reduction

Over 25% reduction expected by 2025* – Some examples

Cold vents



Tyra redevelopment project (Denmark)

- Cold vent removal
- CH₄ reduction: 1.2 kt/y

Anguille cold vent rerouting project (Gabon)

- Reroute gas in between two platforms, installation of an electrical compressor
- CH₄ reduction: 7.4 kt/y

Process vents



Elgin vent rerouting project (UK)

- Reroute Glycol unit strip gas to LP Flare
- CH₄ reduction: 3.6 kt/y

* vs 2019

Dedicated R&D program on methane

Improving detection and quantification

A dedicated testing platform (TADI)



Open-air testing site near Lacq (south of France)

Simulation of methane leak scenarios (3 to 10 kt/y range)

Testing of GHG detection and measurement technologies

Over 30 technologies tested since 2018

An airborne GHG measurement technology (AUSEA)



Proprietary **sensor technology mounted on drone** (CO₂ and CH₄)

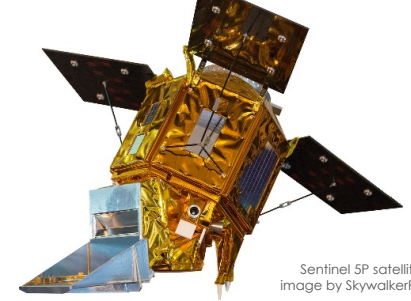
Source detection and quantification

Technology **proved on TADI**

Successful campaign on 6 Total sites (onshore and offshore)

Onsite deployment 2020-2023

A move towards continuous monitoring



Satellite detection

- Internal project (DEMETER)
- Partnerships (Kayros, GHGSAT)

Fixed monitoring: camera, microsensors (tests ongoing)

Integrating top-down and bottom-up approaches

TADI: Transverse Anomaly Detection Infrastructure
AUSEA: Airborne Ultra-light Spectrometer for Environmental Application

Focus on Carbon Capture & Storage

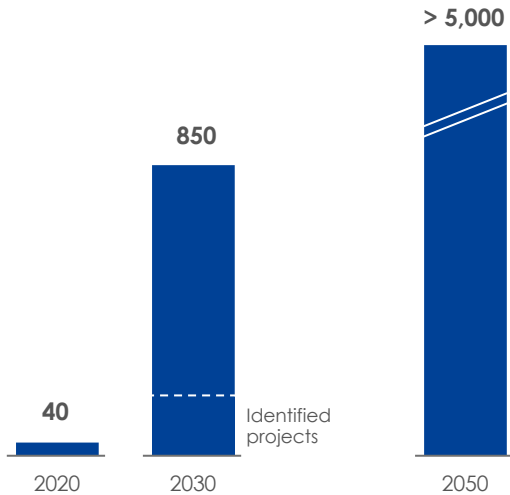


CCS mandatory to meet climate challenges

Key enablers: supporting policies + carbon pricing

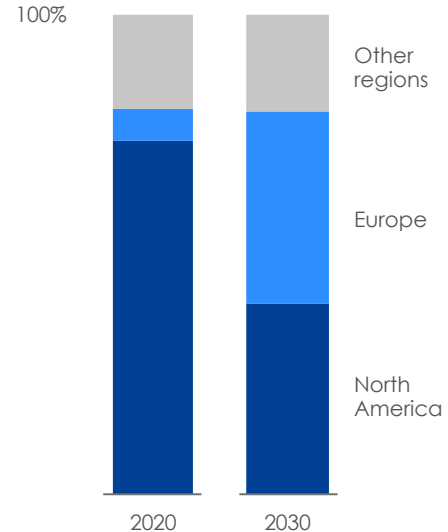
CO₂ emissions reduction needed via CCS¹

MtCO₂



CCS identified projects per region²

%



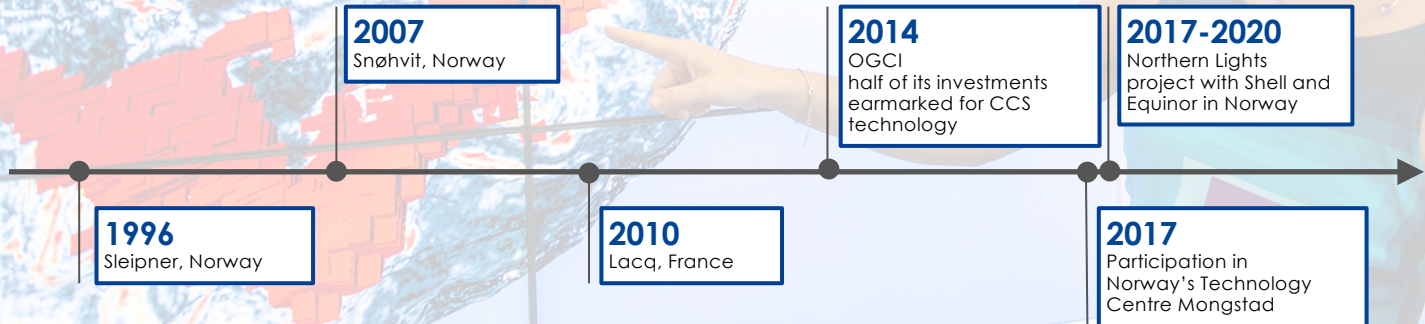
Economies of scale to drive cost down

Europe to foster CCS projects by 2030

¹ Source: WEO 2020 (CO₂ captured and stored from process emissions in the energy and industrial sectors in the SDS < 2°C scenario), Global CCS Institute



² Source: Global CCS Institute + Total analysis

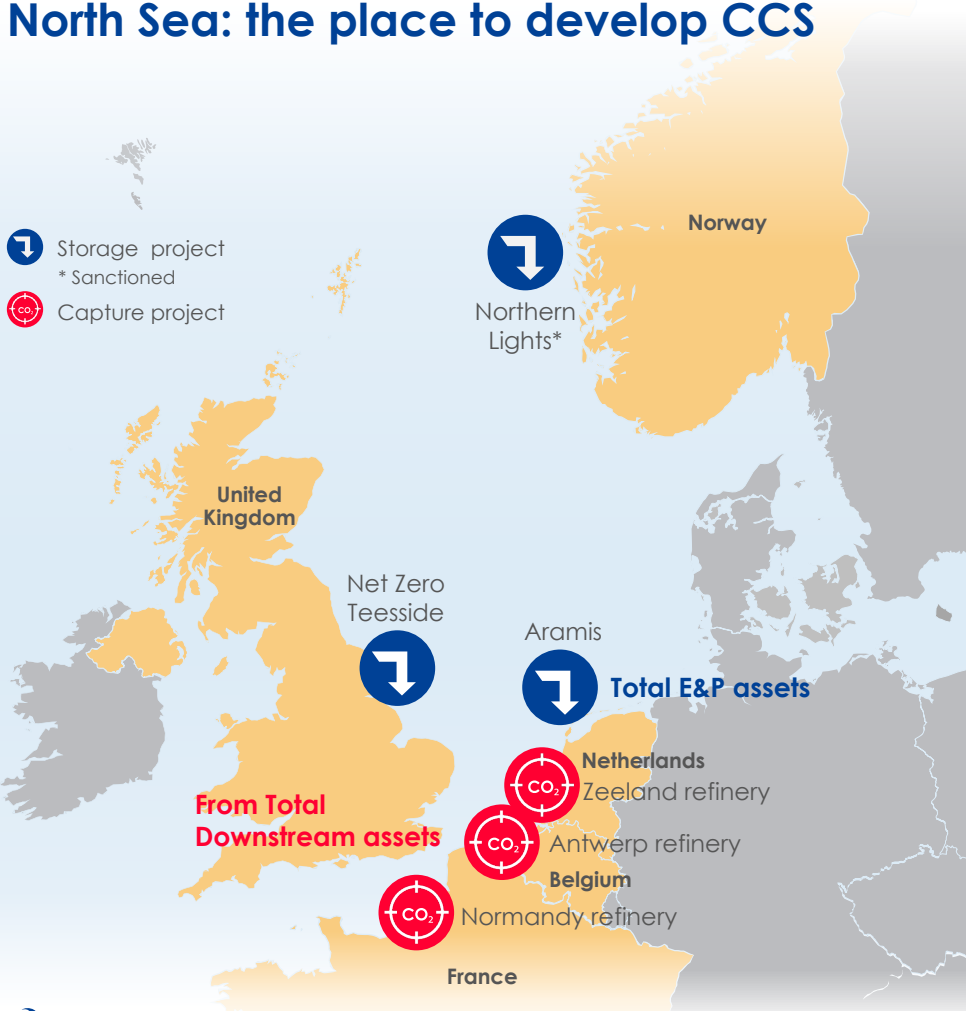
1996 – 2020: building up CCS competencies



Mobilizing expertise spread across the company

North Sea: the place to develop CCS

-  Storage project
* Sanctioned
-  Capture project



EU favorable regulatory policies

- North sea region: area of concentrated CO₂ emissions and large storage potential

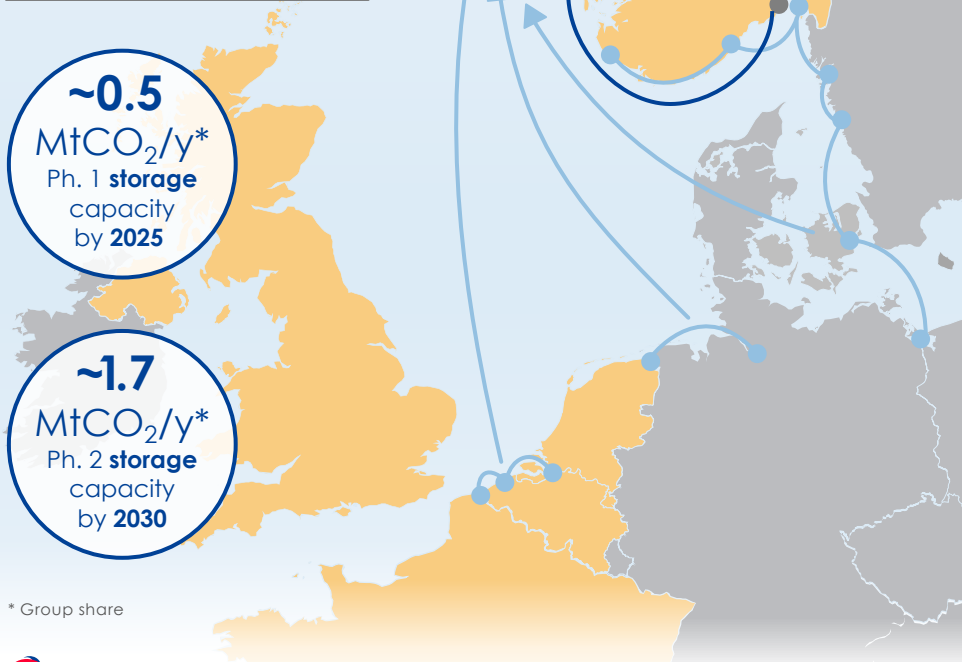
Total's approach

- Reducing Scope 1 emissions from operated assets through CO₂ capture and storage
- Scale enabling cost reduction in transportation and storage
- Targeting 3 to 5 MtCO₂/y storage capacity* by 2030

* Group share

Northern Lights

Norway & Total historic CCS partners since 1996



* Group share



Northern Lights JV

Equinor (1/3, operator), Total (1/3), Shell (1/3)

- Norwegian government strong support, while announcing CO₂ tax (~220 \$/tCO₂ by 2030)
- FID taken in May 2020
- Phase 1:
 - Transport, injection and storage up to 1.5 MtCO₂/y (0.8 MtCO₂/y already booked)
 - ~150 \$/tCO₂
- Phase 2:
 - Potential capacity expansion for European emitters' needs up to 5 MtCO₂/y or more
 - ~70 \$/tCO₂

Capex Ph.1: 800 M\$¹
for transport and sequestration

¹ State subsidies: ~80%

Decarbonizing Zeeland refinery (Scope 1)

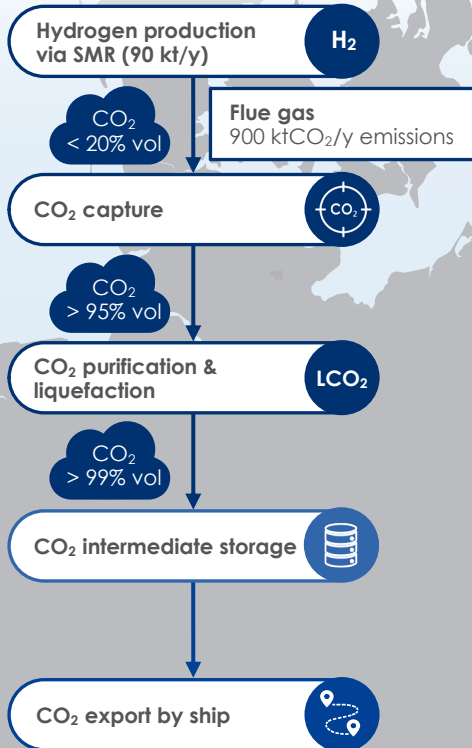
Producing clean hydrogen



~0.8
MtCO₂/y*
captured
and avoided
from 2025

 Zeeland Refinery

* Operated volumes



Zeeland refinery

Total (55%), Lukoil (45%)

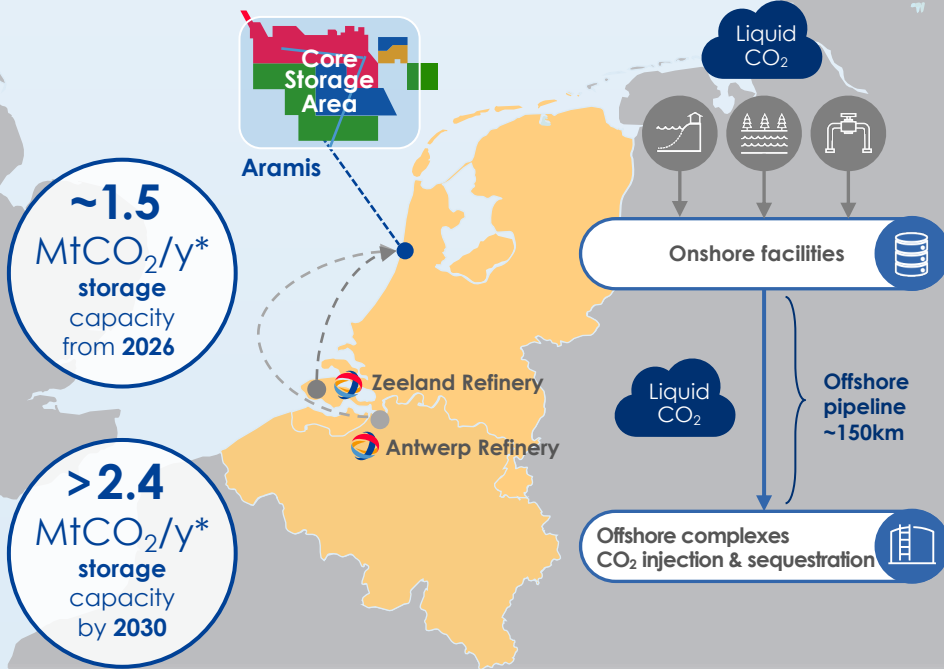
- **Dutch climate accord** setting the pace for a decarbonized economy, targeting a CO₂ tax increase (~150 \$/tCO₂ by 2030)
- **Attractive national subsidy schemes** for CCS (SDE++) in addition to European Union fundings
- **Maximizing CO₂ emissions reduction** by optimizing process synergies and heat recovery opportunities
- ~70 \$/tCO₂ for 0.8 MtCO₂/y

**Capex: ~300 M\$¹
for capture and conditioning**

¹ Capex at 100%

Aramis sequestration project

A new life for depleted gas fields



* Group share



Aramis project

- Leveraging Total assets to develop > 4 MtCO₂/y CCS integrated project:
 - Build onshore multimodal terminal: reception by pipe, barges, ships
 - Build offshore sequestration network re-using existing infrastructure
- Modular expansion based on customer demand (> 8 MtCO₂/y by 2030)
- Targeting ~50 \$/tCO₂ for 2-4 MtCO₂/y for transportation and storage

Investing in R&D to lower CCS costs

Budget of 50 M\$/y

Capture



Optimizing interaction between CO₂ and the capture medium (new materials and processes)

Optimizing CO₂ flow: in the process, in the material (Svante)

Developing partnership for Direct Air Capture (Climeworks)

Improving capture efficiency

Transport

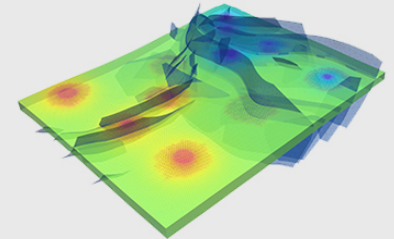


Mastering hydrate avoidance during transport and injection

Increasing shipping capacity (Northern Lights focus)

Enabling economies of scale

Storage



Monitoring CO₂ behavior in reservoir:

- Reservoir modelling
- Reservoir monitoring

Ensuring safe permanent storage

Speeding up research results from lab to industrial projects through partnerships

Nature Based Solutions contributing to get to Net Zero emissions

Multiple ways to sink carbon in nature

Conversion to carbon sink



Afforestation / Reforestation **Agroforestry**

Farmland restoration
Regenerative Agriculture
Sylvo-pastoralism
Grazing Management
Perennial crops
Productive trees

Improved Management



Natural forest management **Plantation management**

Protection & Conservation

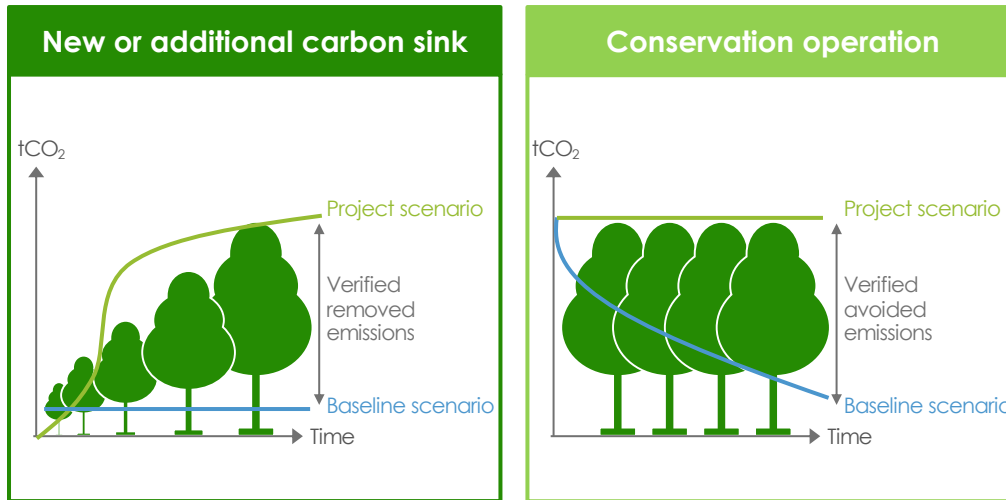


Forest protection **Conservation agriculture**

Grassland protection
Peatlands & wetlands
protection

Targeting high quality carbon units

Highest standards only, balancing various certification environments



Carbon credit standards

- Mostly under **voluntary verification environment**
- Existing standards and associated credits are based on:
 - Robust **independent scientific framework**
 - Principles of **unicity, additionality, permanence** and no leakage
 - **Measured real carbon sink performance**

Professionalized measurements and certification process

Ensuring local inclusive & integrated value chains

Mandatory conditions for sustainability



Sustainable operations

- Improves livelihood of local populations
- Eliminates causes for deforestation and land degradation
- Avoided emissions from local productions on top of carbon sink
- Material co-benefits (jobs, water management, biodiversity, etc.)

Australia: partnering to develop soil carbon sinks

tCO ₂ e	Investment	Activities
1 MtCO ₂ e* avoided over 25 years	9 M\$* over 12 years	10 000 ha converted to regenerative agriculture

100 Farmers
Participating in
the first module



- Partnering with a **specialized carbon developer** with a track record of similar projects getting **Australian Carbon Credits Units (ACCUs)**
- Emission reductions verified and certified under the Australian **Emissions Reduction Fund**
- Carbon removal from **soil carbon sequestration through pastureland management** (3 MtCO₂e over 25 years)
- Large scale-up opportunities

* Group share

Peru: partnering for large scale conservation and reforestation

tCO ₂ e	Investment	Activities
> 25 MtCO ₂ e* Avoided + Removed over 20 years	~125 M\$* over 20 years	> 0.9 Mha under conservation



- **Direct exclusive joint-development agreement with local NGO** with +30 years of experience, with additional **25 MtCO₂e operations in pipeline**
- **Involves conservation of tropical dry-forest and amazon rainforest**, impacting favourably biodiversity conservation
- **Engagement of local communities** through **cocoa and carob agroforestry** value chains
- **Highest market certifications carbon & co-benefices:** Verra's VCS & CCBS Gold level

Biodiversity
protecting world
biodiversity hotspots

**Local
inclusive
value chain**
Cocoa & Carob in
agroforestry

* 100% view

Central Africa: afforesting 40 000 ha and recreating a forest atmosphere in time

tCO₂e

~13 MtCO₂e*
removed
over 20 years

Investment

230 M\$*
over 20 years

Activities

Afforestation: 40 kha
including 2 kha of
agroforestry

Local
inclusive
value chain
Cassava & Wood



- Unprecedented operations to afforest a poor and barren ecosystem through a **proven afforestation model**
- **Strategic location in the supply basin of 2 African megacities**, allowing market access to produced commodities
- **Potential to double the planted area** from 2030 onwards

* Group share

Building Group's carbon reserves

Invest in, scale-up, manage integrated and communities-inclusive nature-based value chains that capture carbon

- Quality of operations
- ESG approach
- Co-investor or business partner

- 100 M\$/y
- < 20 \$/tCO₂e targeted average credit cost
- > 40 MtCO₂e of approved multi-year projects*

- 5-10 MtCO₂e/y sequestration capacity **by 2030**
- Targeting **100 MtCO₂ carbon credits** from operations **by 2030**
- Carbon credits **to be used from 2030** while maintaining **at least 10 years of reserves**

* Investments already approved for operations to be spent over the next 20 years

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Financial information by business segment is reported in accordance with the internal reporting system and shows internal segment information that is used to manage and measure the performance of TOTAL. In addition to IFRS measures, certain alternative performance indicators are presented, such as performance indicators excluding the adjustment items described below (adjusted operating income, adjusted net operating income, adjusted net income), return on equity (ROE), return on average capital employed (ROACE), gearing ratio and operating cash flow before working capital changes. These indicators are meant to facilitate the analysis of the financial performance of TOTAL and the comparison of income between periods. They allow investors to track the measures used internally to manage and measure the performance of the Group.

These adjustment items include:

- (i) Special items
Due to their unusual nature or particular significance, certain transactions qualified as "special items" are excluded from the business segment figures. In general, special items relate to transactions that are significant, infrequent or unusual.

However, in certain instances, transactions such as restructuring costs or asset disposals, which are not considered to be representative of the normal course of business, may be qualified as special items although they may have occurred within prior years or are likely to occur again within the coming years.

- (ii) Inventory valuation effect

The adjusted results of the Refining & Chemicals and Marketing & Services segments are presented according to the replacement cost method. This method is used to assess the segments' performance and facilitate the comparability of the segments' performance with those of its competitors.

In the replacement cost method, which approximates the LIFO (Last-In, First-Out) method, the variation of inventory values in the statement of income is, depending on the nature of the inventory, determined using either the month-end price differentials between one period and another or the average prices of the period rather than the historical value. The inventory valuation effect is the difference between the results according to the FIFO (First-In, First-Out) and the replacement cost.

- (iii) Effect of changes in fair value

The effect of changes in fair value presented as an adjustment item reflects for some transactions differences between internal measures of performance used by TOTAL's management and the accounting for these transactions under IFRS.

IFRS requires that trading inventories be recorded at their fair value using period-end spot prices. In order to best reflect the management of economic exposure through derivative transactions, internal indicators used to measure performance include valuations of trading inventories based on forward prices.

TOTAL, in its trading activities, enters into storage contracts, whose future effects are recorded at fair value in Group's internal economic performance. IFRS precludes recognition of this fair value effect.

Furthermore, TOTAL enters into derivative instruments to risk manage certain operational contracts or assets. Under IFRS, these derivatives are recorded at fair value while the underlying operational transactions are recorded as they occur. Internal indicators defer the fair value on derivatives to match with the transaction occurrence.

The adjusted results (adjusted operating income, adjusted net operating income, adjusted net income) are defined as replacement cost results, adjusted for special items, excluding the effect of changes in fair value.

Euro amounts presented herein represent dollar amounts converted at the average euro-dollar (€-\$) exchange rate for the applicable period and are not the result of financial statements prepared in euros.

This document also contains extra-financial performance indicators, including a carbon intensity indicator for energy products used by Total customers, that measures the average greenhouse gas emissions of those products, from their production to their end use, per unit of energy. This indicator covers the direct GHG emissions of production and processing facilities (scope 1) and their indirect emissions associated with energy purchase (Scope 2), as well as the emissions associated with the use of products by the customers of the Group (Scope 3) which Total does not control (for the definitions of scopes 1, 2 and 3, refer to Total's Universal Registration Document).

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