TotalEnergies

Plastics in the Circular Economy

30% recycled and renewable plastics by 2030

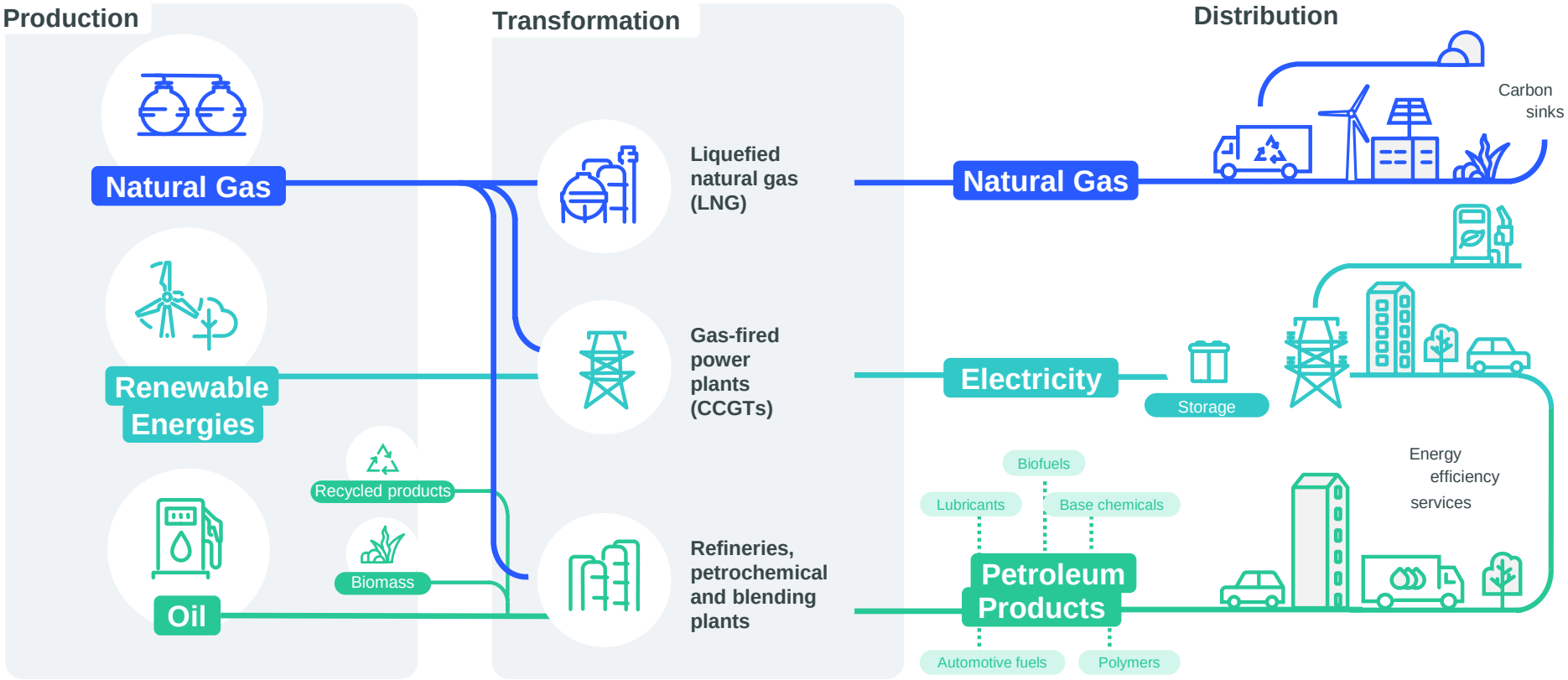
Ursula Thakkar
VP Low Carbon Development
Refining and Petrochemicals Orient

Energy is reinventing itself, so are we!

TotalEnergies' purpose is to supply more affordable, more available, and cleaner energy to as many people as possible

TotalEnergies, a major player in the energy transition

Integrated across the entire energy chain



TotalEnergies' Climate Ambition

Achieving Carbon Neutrality by 2050 together with society

Ambitions		2030 objectives vs 2015	
Net Zero worldwide on operated activities (Scope 1+2)	>	Net emissions on operated oil and gas facilities	**-40%**
Net Zero worldwide for indirect emissions(1) (Scope 3)	>	Scope 3 worldwide emissions	**2030 < 2015**
		Carbon intensity (2) (Scope 1+2+3)	**> -20%**

(1) Related to the use by our customers of energy products sold for end-use
(2) Average carbon intensity of energy products used by our customers worldwide

TotalEnergies' Polymers Ambition

Low Carbon Products & Circularity

Plastic recycling

Ambition:

30%

circular* polymers by

2030

* Circular = recycled + biopolymers + alternative feedstocks

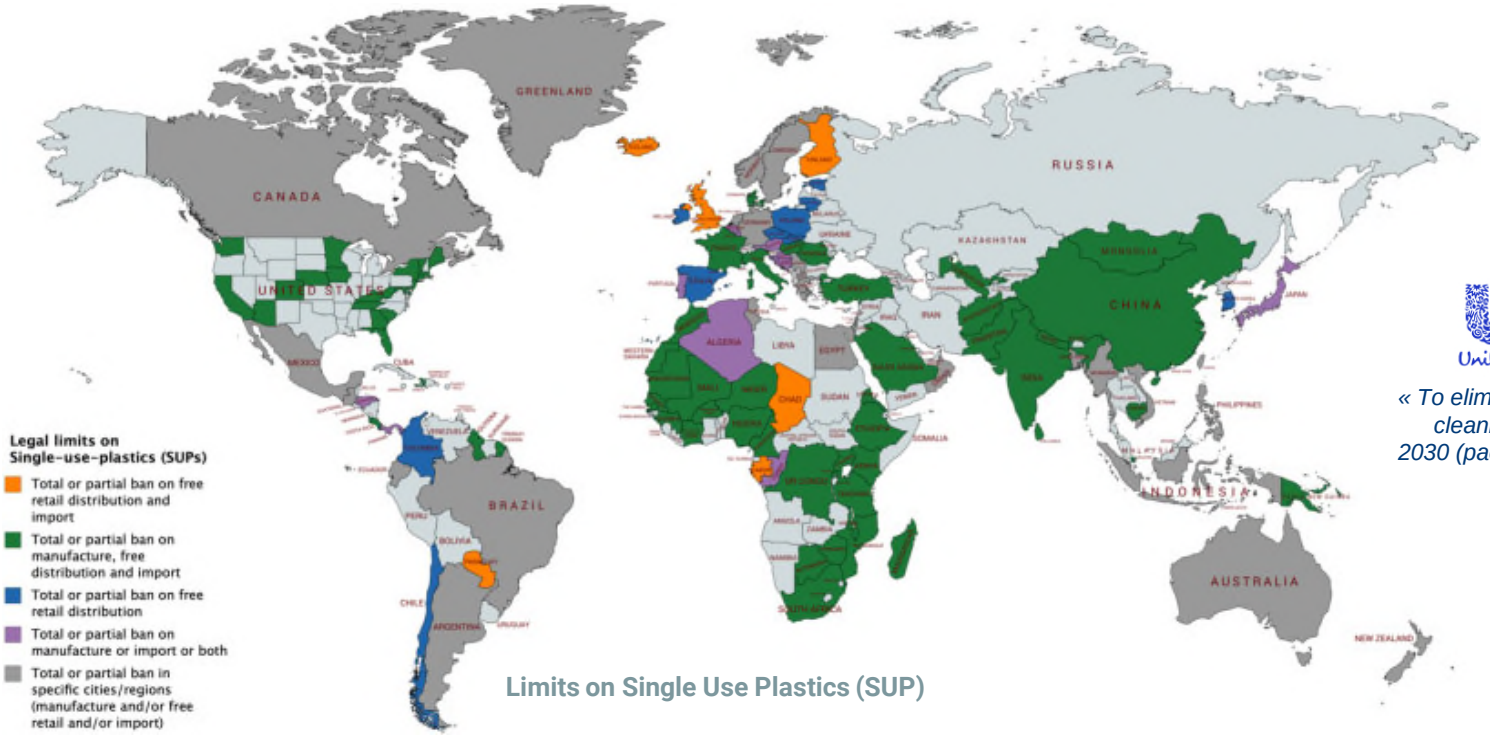
Alternative feedstock

Examplese of alternative feedstocks are CO/CO2/H2 & industrial waste gas

Increasing expectations among stakeholders

TotalEnergies

Policy Makers



Limits on Single Use Plastics (SUP)

Brand Owners & Consumers

L'ORÉAL

« Pledge that 100% of the plastics used in packaging will be either recycled or bio-based by 2030»

DANONE
ONE PLANET. ONE HEALTH

« aims for a 100% recycled carbon based packaging as final objective (not mass balanced) »

Unilever

« To eliminate fossil fuels in cleaning products by 2030 (packaging included)»

PEPSICO

25% recycled content (33% for PET bottles) by 2025

Mondelēz International

100% with recycling packaging by 2025

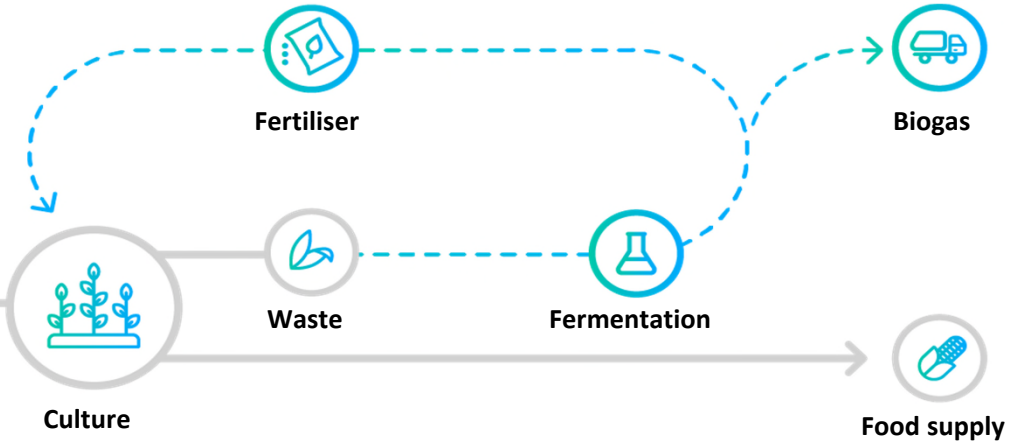
Map Source: "Rethinking and optimising plastic waste management under COVID-19 pandemic: Policy solutions based on redesign and reduction of single-use plastics and personal protective equipment" Silva, A.L.P. et al (2020)

Transforming to reinvent energy

Circular resource management applied to TotalEnergies

Circular resource management in 2 words:

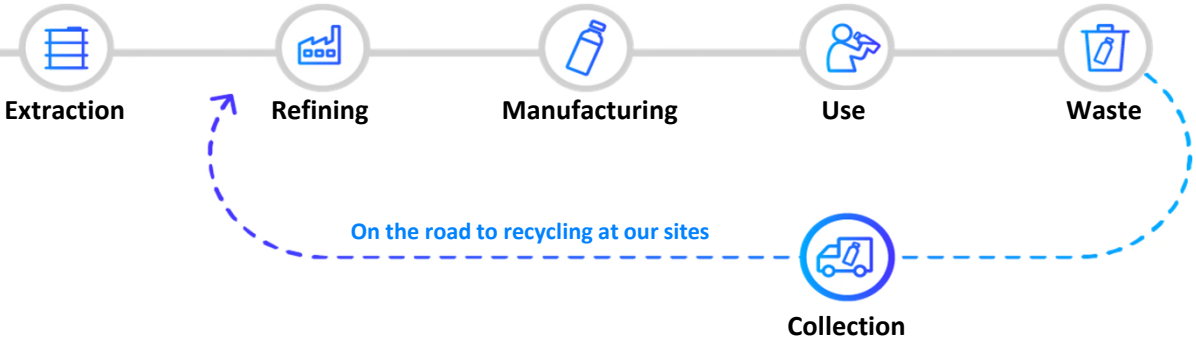
means giving a second life to our waste.



Organic World

Example of biogas:

Circularity means using waste to produce fertilizer and biogas



Industrial World

An illustration with plastic:

Circularity means collecting and recycling used plastics at our sites

Mechanical Recycling

Synova is the French leader in rPP production from industrial waste plastics, household waste and car parts such as bumpers.

18. 2. 2019 – Acquisition of Synova.

01.10. 2021 – TotalEnergies announces the doubling of Synova's mechanical recycling production capacity to meet growing demand for sustainable polymers from customers, such as automotive manufacturers (Auto OEM) and the construction industry.

Carling - Saint-Avold

25.11.22 TotalEnergies announces the construction of a new production line of high-performance recycled polypropylene for automotive applications in its polymer plant in Carling, France.

TotalEnergies Certified Renewable Polymers

Our Industrial Footprint

TODAY

La Mède biorefinery

France's first world class

BIOREFINERY

275 M€ investment

500 kt/year of HVO

for biodiesel market

Technology that can process

ALL TYPES OF OILS:

Vegetable, used and residual

PROJECT

Grandpuits biorefinery

TotalEnergies'

ZERO-CRUDE PLATFORM

Start up : **2024**

170 kt /year of aviation biofuels,

120 kt/year of road biofuels and

50 kt/year of renewable naphtha

Feedstock: primarily animal fats and UCO, supplemented with rapeseed and other vegetable oils

PLA production, Chemical Recycling

PLA – A Biosourced and Biodegradable polymer

A Market Leader With Total Corbion PLA

Bioplastics

Be the **PLA market leader with TotalEnergies Corbion PLA**

200,000 tons/year of PLA by 2025

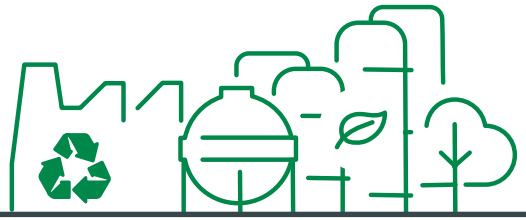
TotalEnergies

50%

JV
TotalEnergies
Corbion

50%

Corbion

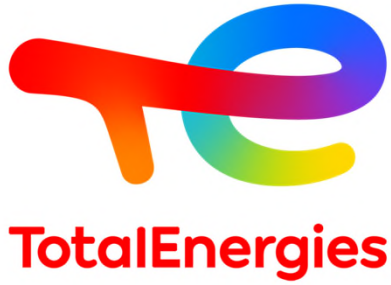


Plant in Rayong, Thailand
75,000 tons/year of PLA – startup in 2018

Plant in Grandpuits, France
100,000 tons/year of PLA – startup in 2024

TotalEnergies Polymers Sustainable Offer

		TotalEnergies offer	Feedstock	Drop in	Food contact	Type of offer	Availability
Recycled based products	Mechanical recycling	rPE compounds ♻	Plastics waste (> 50%)	No	No	Segregation	Today
		rPP compounds ♻	Plastics waste (Up to 100%)	No	No	Segregation	Today
	Advanced recycling	PE, PP, PS ♻	Plastics waste (Up to 100%)	√	√	Mass balance	In 2023
Alternative feedstocks for virgin polymers	PLA	PLA By JV TOTAL CORBION	1G (Sugar cane)	No	√	Segregation	Today
	Bio MB	PE, PP, PS	1G, 2G	√	√	Mass balance	Today
	Waste carbon	Recycled Carbon based PE	Waste gas (CO, CO2..)	√	√	Segregation	Post 2025



Thank You

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