



Low Carbon Day

Boosting the Transition

Josu Jon Imaz
CEO



The Repsol Commitment
Net Zero Emissions
by 2050



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Index

01.

Repsol Strategy recapitulation

02.

Low carbon strategy progress

03.

Ambition and targets review



The Repsol Commitment
Net Zero Emissions
by 2050

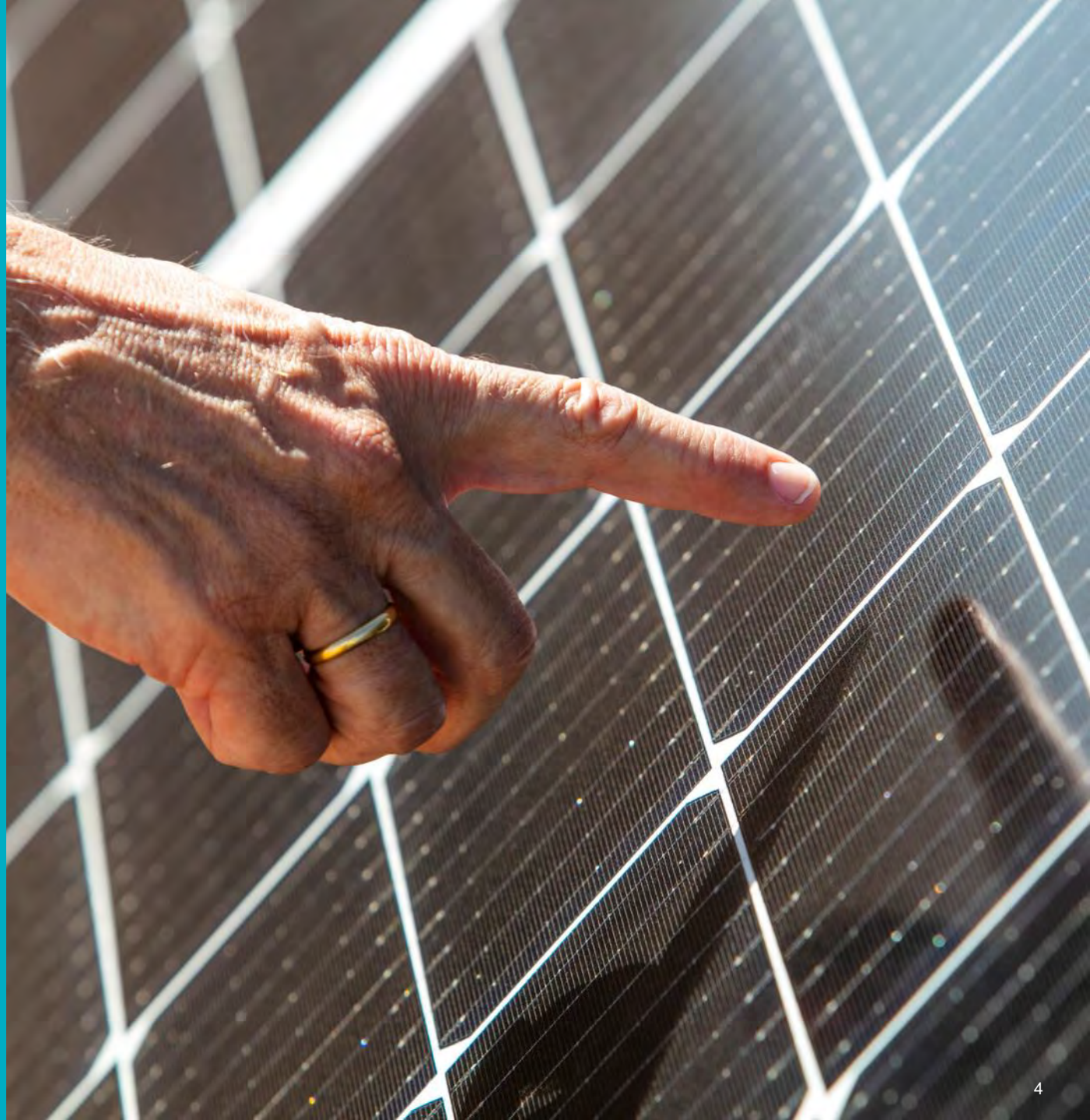


01.

Repsol Strategy recapitulation



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Net Zero Emissions
by 2050



01. Repsol Strategy recapitulation

Decarbonizing the portfolio

Repsol Strategic Plan 21-25 is a transformation story, based on decarbonization, and will be done in a way that benefits Repsol as a whole



01. Repsol Strategy recapitulation

Repsol with the right ambition and more feasible

Repsol's transformation story has a distinctive approach and differentiated starting point, with a right ambition and scale to afford decarbonization

the right
ambition

a credible
size

a well-suited
play

- De-carbonization as a **business opportunity** creating profitable Transition growth platforms
- **More credible and feasible ambition**, right aligned with allocated Capex
- **Legacy business** providing cash-flow to enable the transition

- **Large enough** to build a leading player in the Energy Transition
- **Small enough** in the O&G universe to feasibly transform the portfolio with attractive opportunities

- **Customer leadership in Iberia** with differential **brand** over competitors
- **Tier#1 industrial sites** provide unmatched platforms for emerging de-carb business
- Iberian peninsula with local advantages on project economics (green H₂, e-fuels, circularity), provided by a **large renewable resource base**

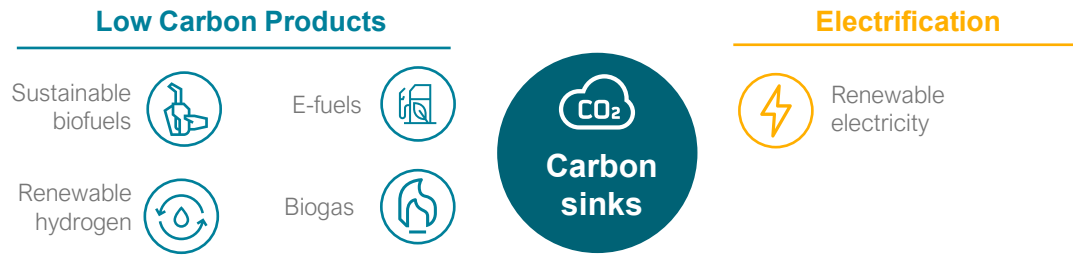
01. Repsol Strategy recapitulation

Decarbonizing through a hybrid platform

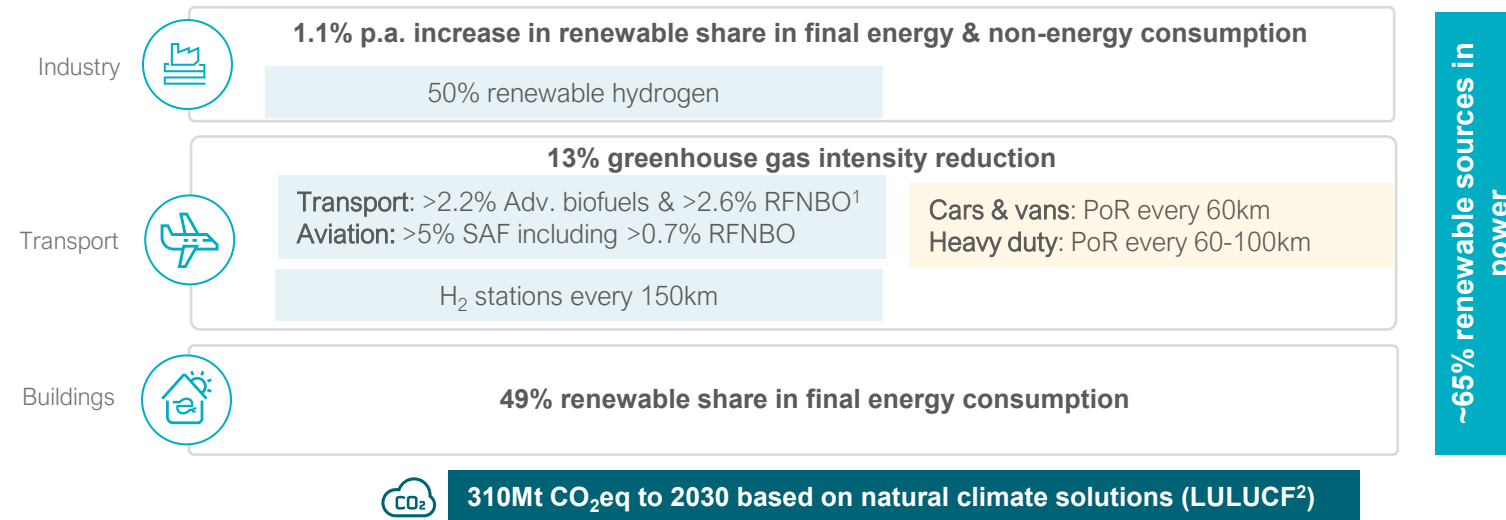
Fit for 55 package reinforces Repsol's vision in which a combination of electrification and low carbon products is the best solution to decarbonize the economy



Repsol's hybrid solution supports a **cost-efficient transformation** based on competitive advantages.



Fit for 55 package relies both on electrification and low carbon products as levers to achieve the emissions reduction target.



Repsol is present in all decarbonization value chain as a **multi-energy provider**



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1. RFNBO: Renewable Fuels of Non-Biological Origin, SAF: Sustainable Aviation Fuels
2. LULUCF: "Land use, Land-use change and forestry"



02.

Low carbon strategy progress



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Net Zero Emissions
by 2050



02. Low carbon strategy progress

Building on our commitment since Net Zero announcement

Repsol today has a relevant low carbon portfolio, moving forward in 2021



+€300 M Capex in Low Carbon Businesses vs Previous 2021 guidance, accounting for >30% of 2021 Capex

1. Operating capacity of Delta I (335 MW), Cabo Leonés III phase I (78 MW – 50% WI) and hydro assets (699 MW)
 2. Spain Market share in volume; value for 2019
 3. Including customers from Gana Energía

02. Low carbon strategy progress

Low carbon business platforms:

Industrial Transformation: Low Carbon Products

1.9 GWeq

Increased renewable H₂ ambition by 2030

- +40% increased 2025 ambition to 0.55 GWeq
- +60% increased 2030 ambition to 1.9 GWeq
- Three-way route: electrolysis, biomethane and photo electrocatalysis (long-term)
- E-fuels demo plant underway
- 2.5 MW electrolyzer in Petronor by 2022

2 Mton

Low carbon fuels¹ by 2030

- 1.3 Mton of low carbon fuels to 2025
- **Advanced HVO, the best option to comply with the legislation and grow in biofuels generating value**
- First biofuels marketer in Spain
- Multi-technology and raw material approach

+20%

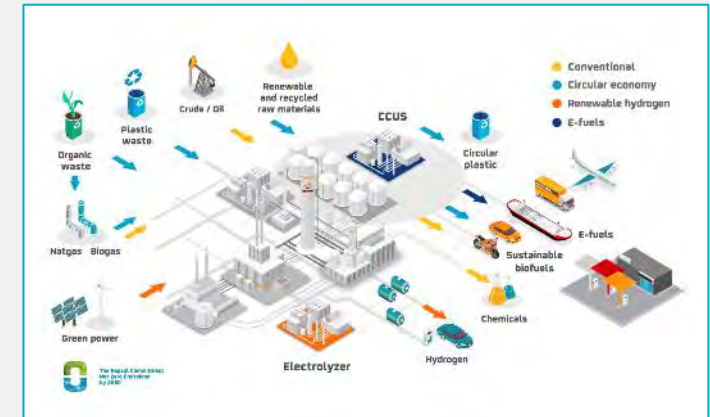
Recycled polyolefins by 2030

- 10% recycled polyolefins by 2025
- Chemical and mechanical recycling

Maximizing Value through partnerships

1. Considering gross capacity of projects developed by 2030

Energy parks that fit into a more sustainable future



0.8

Mtpa CO₂ reduction from efficiencies by 2025

3

Mtpa waste¹ avoided by 2030

>7

Mtpa CO₂ emissions mitigated¹ by 2030

02. Low carbon strategy progress

Low carbon business platforms:

Renewable Generation: increasing our ambitions

 **20 GW**

Increased Renewables capacity by 2030

- +15% RES ambition to 6 GW (2025)
- +60% RES ambition to 20 GW (2030)
- Hecate optionality: RoFos and takeover
- Balanced technology mix: solar, wind & hydro
- Hybrid projects and storage 4.3 GW pipeline
- Relevant presence in OECD markets

 **>10%**

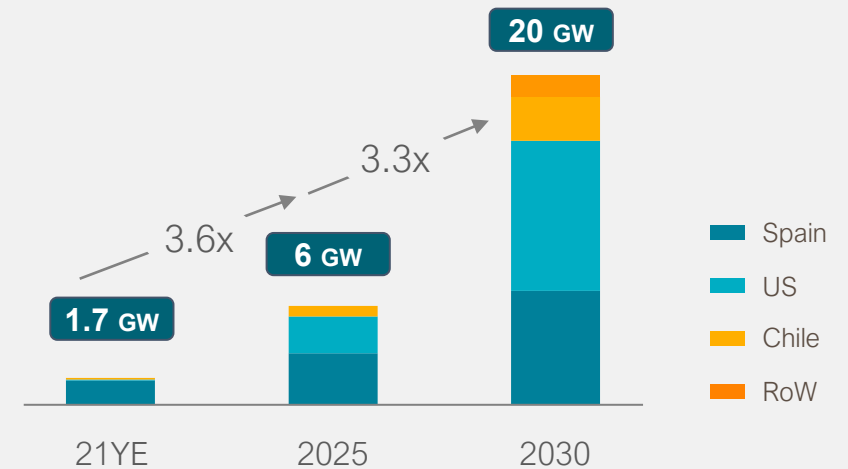
Best-in-class Equity IRR

- Capturing full yield of every project phase:
 - Top development and operational capabilities
 - Optimal Structuring and financing
 - Differentiated Energy & risk management
 - Asset rotation of operational assets

Selectively investing to create value

Notes: Assuming Hydro is entirely in Spain and considering 100% in Spain and International (excl. Chile) and 50% JV stake in Chile; US Solar includes Solar PV plus Battery Storage.

Accelerating our ambitions from a sizeable, tangible and technologically and geographically diversified pipeline of renewable projects



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Net Zero Emissions
by 2050


02. Low carbon strategy progress

Low carbon business platforms:

Customer Centric Business: building on our advantages

 **8 Million**
Digital clients by 2025

 **+1,000**
Public PoR by 2022
in Iberia

 **+180**
Solar communities
expected by 2021 YE

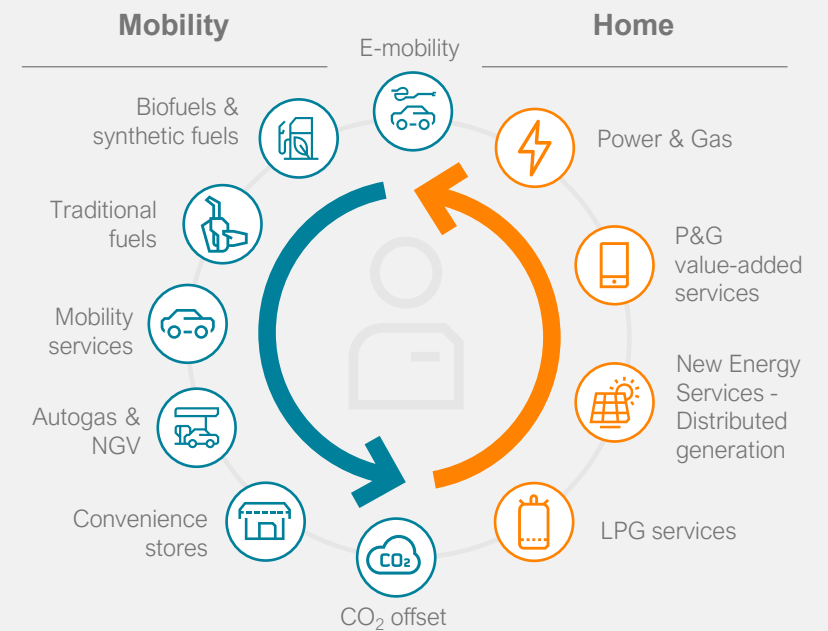
- Unique position to serve the multi-energy needs of our customers
- 3M Waylet by end 2021 (+50% vs 2020)
- Vivit and Energy Origin launched in 2021
- Launching transversal loyalty program

- Quick chargers every 50 km in Spain by 2022
- Capex €50 M in Spain
- Ultra / fast charging terminals in premium locations

- Innovative solutions for energy generation and optimization, reinforcing a multi-energy offer
- Solify: self-consumption
- Solmatch and Ekiluz: communities oriented

To drive 1.4x EBITDA by 2025 (vs. 2019)

A differentiated multi-energy customer centric view



Simplifying the net-zero journeys of our customers

02. Low carbon strategy progress

Low carbon business platforms:

Carbon Sinks: committed with climate neutrality

Carbon, capture, utilization & storage

CCUS projects

Sakakemang world-scale CCS project by 2027

- Sakakemang – storage capacity of 2 Mtpa of CO₂ and €247 M total investment
- Actively involved in OGCI's CCUS hubs initiative

Natural Climate Solutions

Green Engine

Forestry program through Repsol Foundation

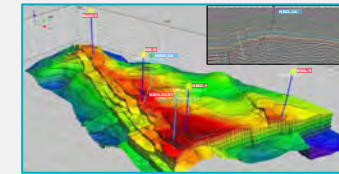


- 70,000 Ha of forests
- Voluntary Carbon Market advocacy
- A €100 M Carbon Fund

Supporting our pathway to Net Zero

Relying on our expertise to abate emissions competitively

Sakakemang CCS project



2 Mte CO₂/yr

2027-2040



30 Mte CO₂ Cum.

Reforestation areas to both capture carbon and protect biodiversity

Green Engine initiative



70,000 Ha

2021-2026



60 M. Trees planted



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Net Zero Emissions
by 2050



03.

Ambition and targets review



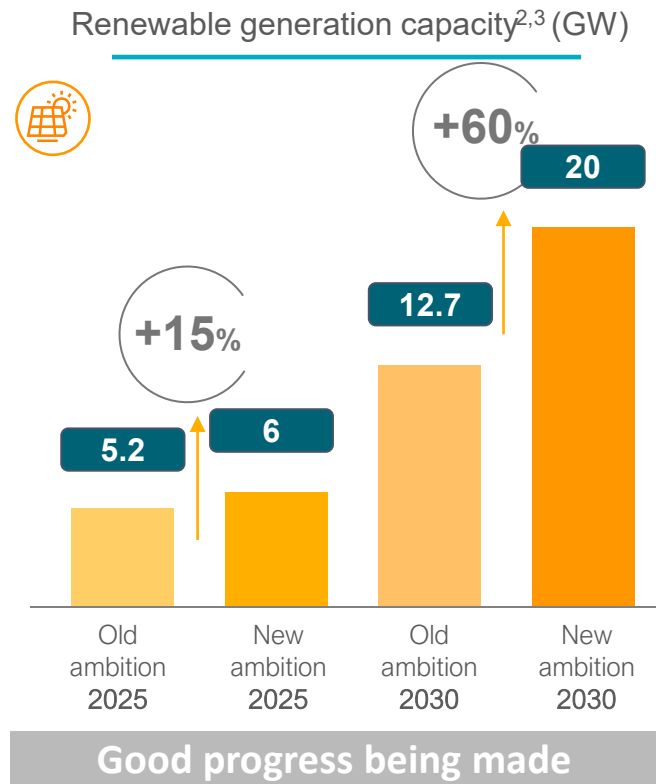
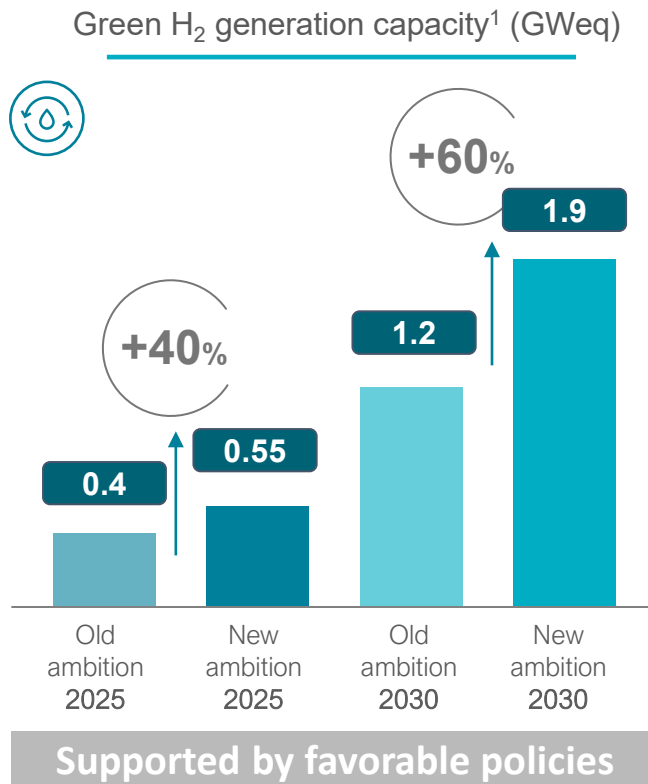
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Net Zero Emissions
by 2050



03. Ambitions and targets review

Increasing our ambition

Repsol increased its renewable and hydrogen ambition and sets new CCB targets, encouraged by new opportunities, technology and favorable climate policy momentum

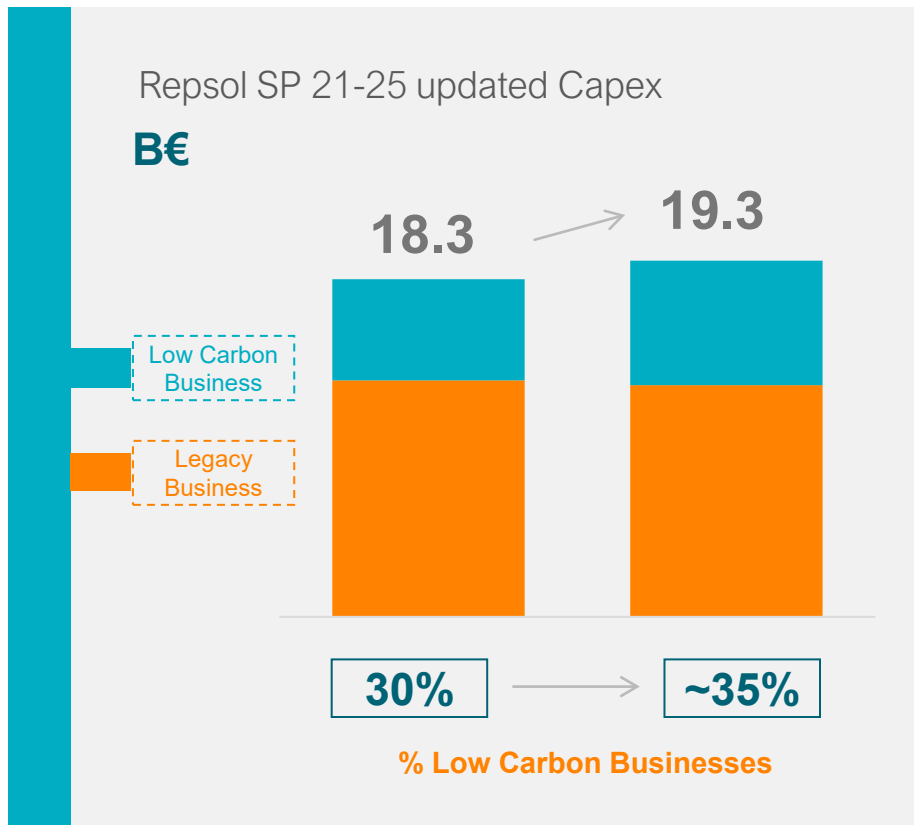


1. Net electrolyzer capacity (GW)
2. Gross renewable generation capacity
3. Original SP 7.5GW and 15GW Low Carbon Generation. (5.2GW and 12.7GW Renewable Generation)

03. Ambitions and targets review

Repsol 2030 targets

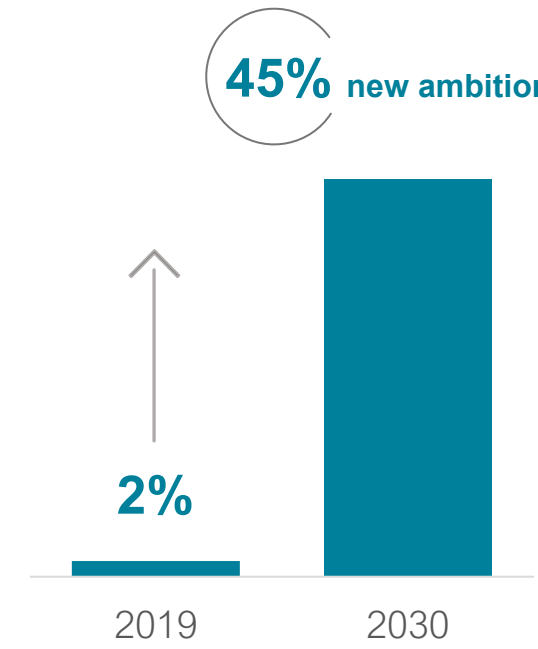
Repsol increases its Capex in low carbon 21-25, due to value accretive identified opportunities, accelerating our transformation to 2030



+1Bn€ in 21-25¹

- Hydrogen business build up
- Accelerated Renewables expansion
- Other low carbon initiatives

Repsol 2030 ambition is increased from 40% to 45% Capital Employed in LCB²



1. Includes new low carbon platforms, low carbon generation investments, decarbonization efficiency investments, e-mobility, and value-added services.
 2. Increase in low carbon CE through investments in low carbon generation, new industrial low carbon platforms (circularity, H2 & e-fuels, etc.), decarbonization through efficiency initiatives, e-mobility, and value-added services, among others
 Note: CE of RES considering consolidation by the proportional method. Capital employed figures not including Corporation (€2 B in 2019)

03. Ambitions and targets review

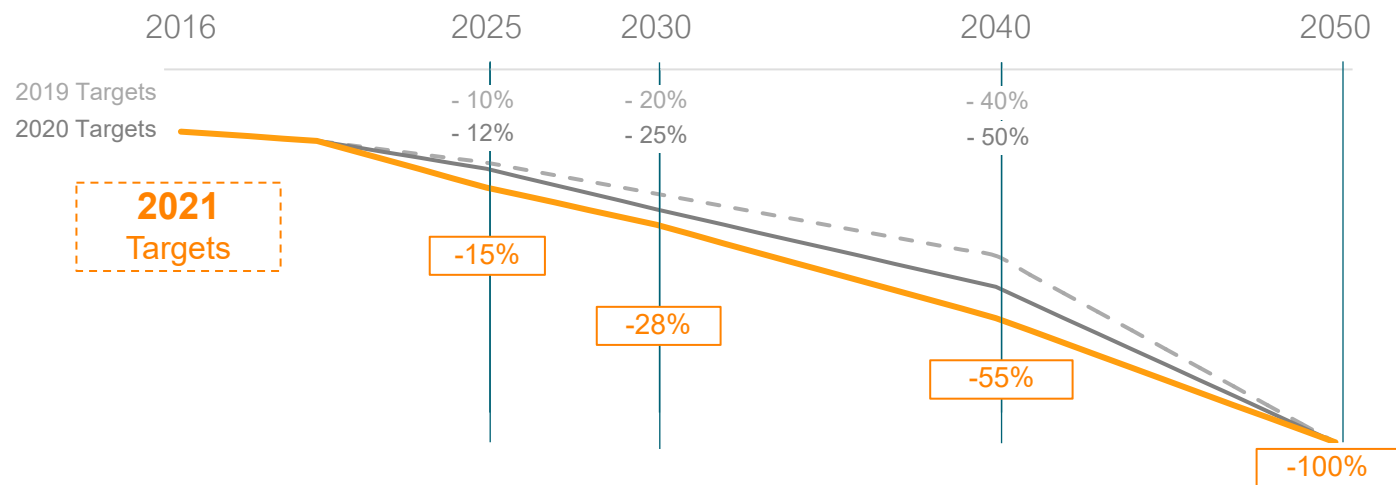
Repsol reviewed Net Zero pledge

A favorable regulatory environment and technological breakthrough encouraged Repsol to even further its CII intermediate targets

First O&G to claim Net Zero emissions

Committed in 2019, Increased in 2020, Reinforced in 2021

Carbon Intensity Indicator¹ reduction targets [gCO₂/MJ]



New Ambition to accelerate the path to Net zero emissions in scopes 1, 2 and 3²

Leading the energy transition in line with the objective of climate neutrality in 2050

1. 2016 baseline.
2. Emissions based on the use of the products from our upstream production



Low Carbon Day

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Net Zero Emissions
by 2050





Low Carbon Day

Driving the Refining transformation

Juan Carlos Ramírez

Dir. Planning, Logistics & Refining Sales

Berta Cabello

Head of Refining Transformation



The Repsol Commitment
Net Zero Emissions
by 2050



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Index



01.

Low Carbon Fuels Framework

02.

Providing Short Term Value with LCF

03.

What is next? Our Pathway to 2030



The Repsol Commitment
Net Zero Emissions
by 2050



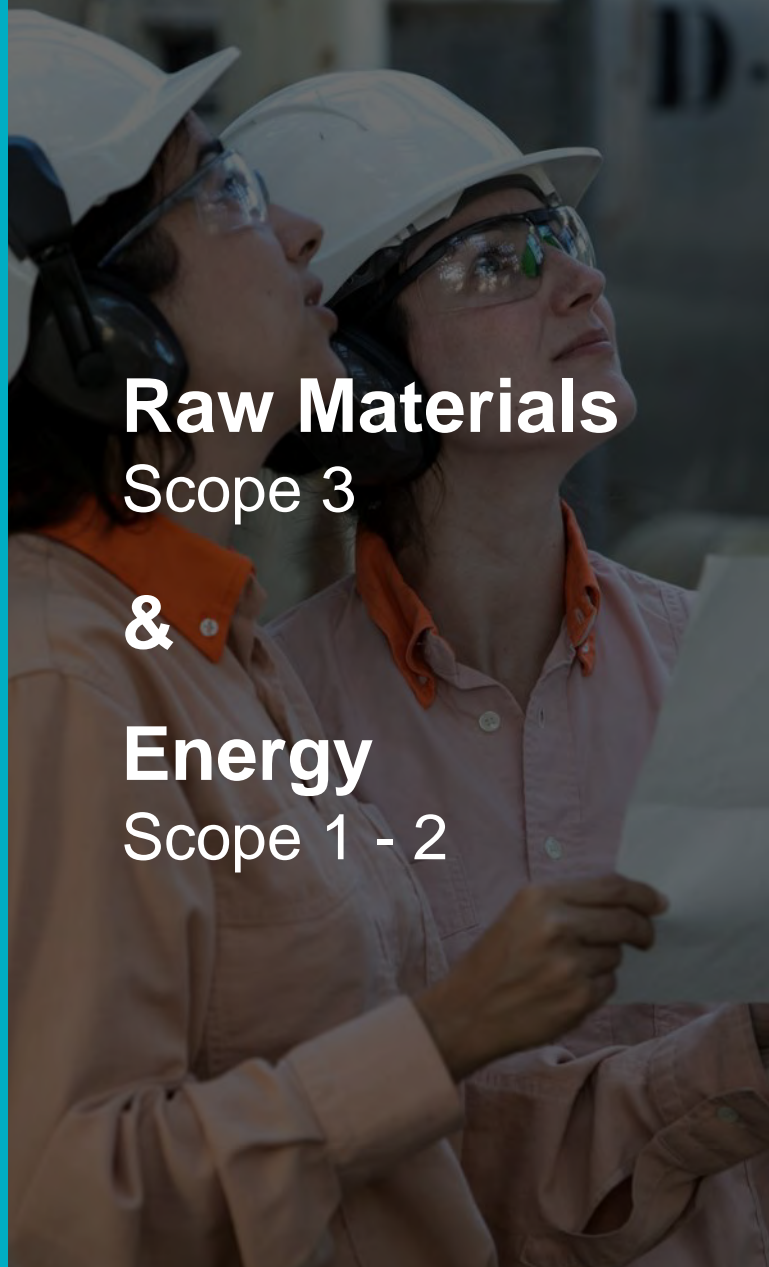
01.

Low Carbon Fuels Framework



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Net Zero Emissions
by 2050





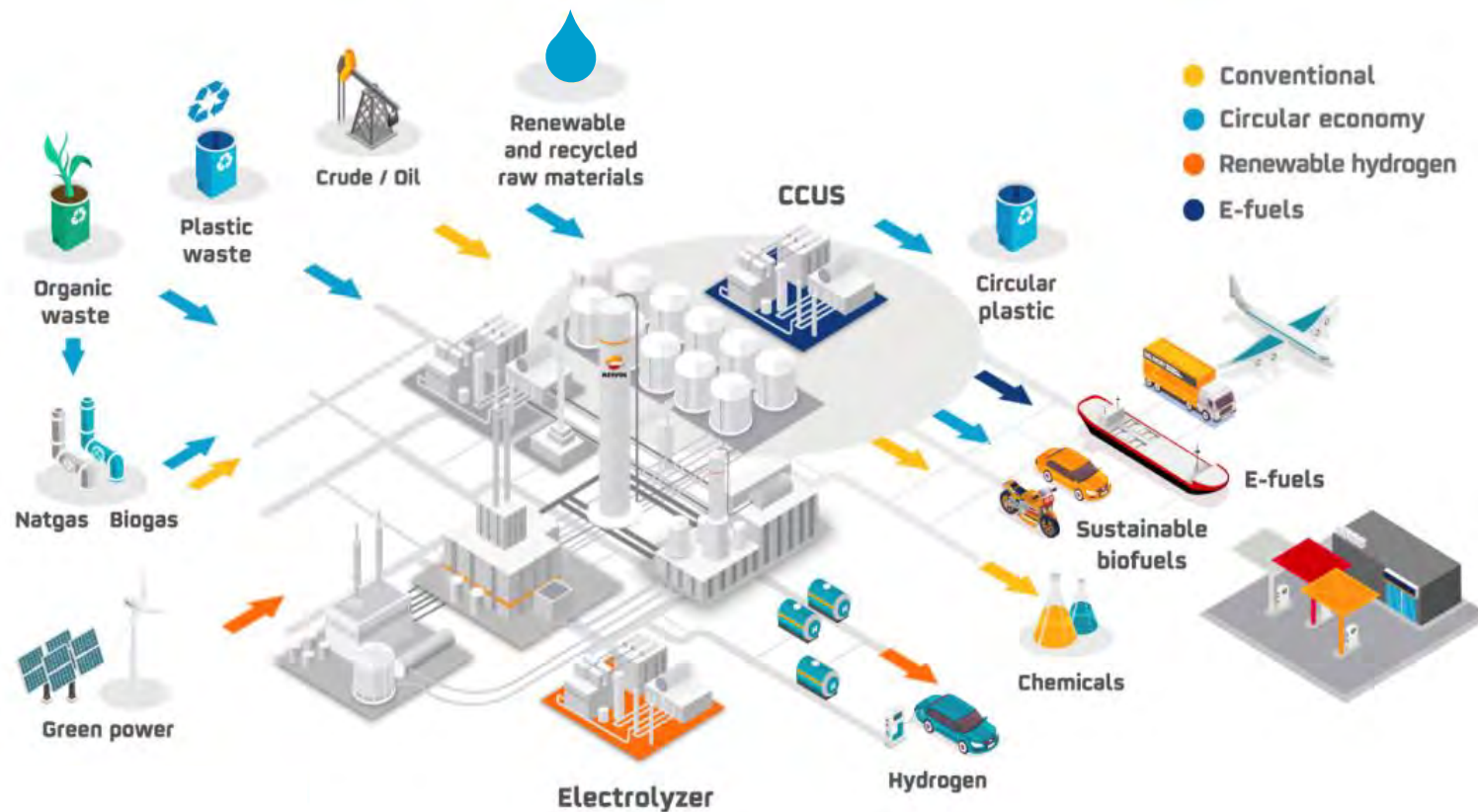
Raw Materials
Scope 3

&

Energy
Scope 1 - 2

01. Low Carbon Fuels Frameworkz

Transforming our business model



01. Low Carbon Fuels Framework

Transforming our business model

1 Regulation

Anticipation + advocacy + local dialogue

2 Technology Development and Integration in the Value Chain

Cost and CO₂ Competitive

Optimum location and integration

3 Products Portfolio

Low Carbon Liquid Fuels and renewable gases + other products

4 Supply management and ecosystem development

Agriculture and livestock + forestry + agri-food + municipal and industrial waste

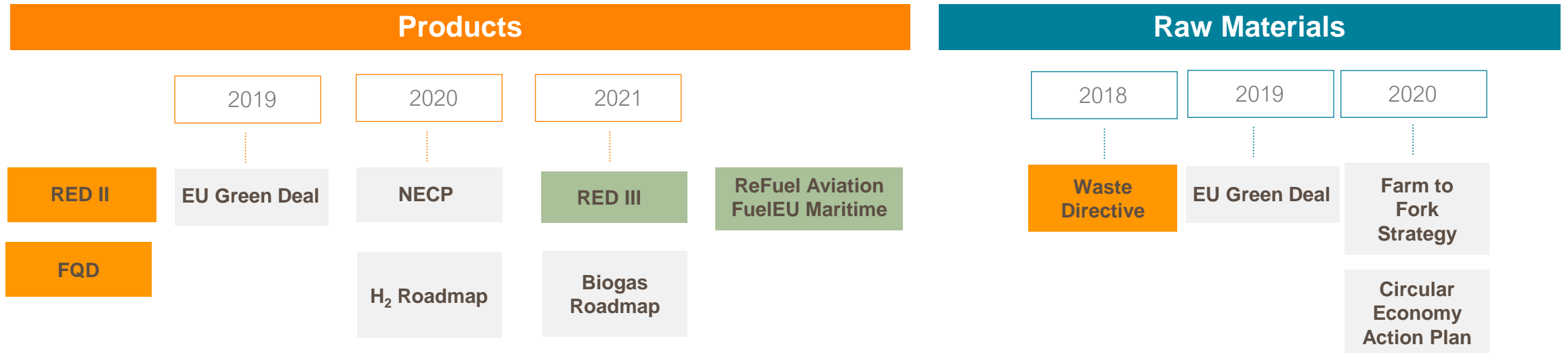
New Business Model

 Circular Economy

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Net Zero Emissions
by 2050

01. Low Carbon Fuels Framework

Regulation increases demand and promotes the development of raw materials



The regulatory framework in EU and Spain is promoting low carbon fuels and renewable gases as a decarbonization alternative for transport and other industries.

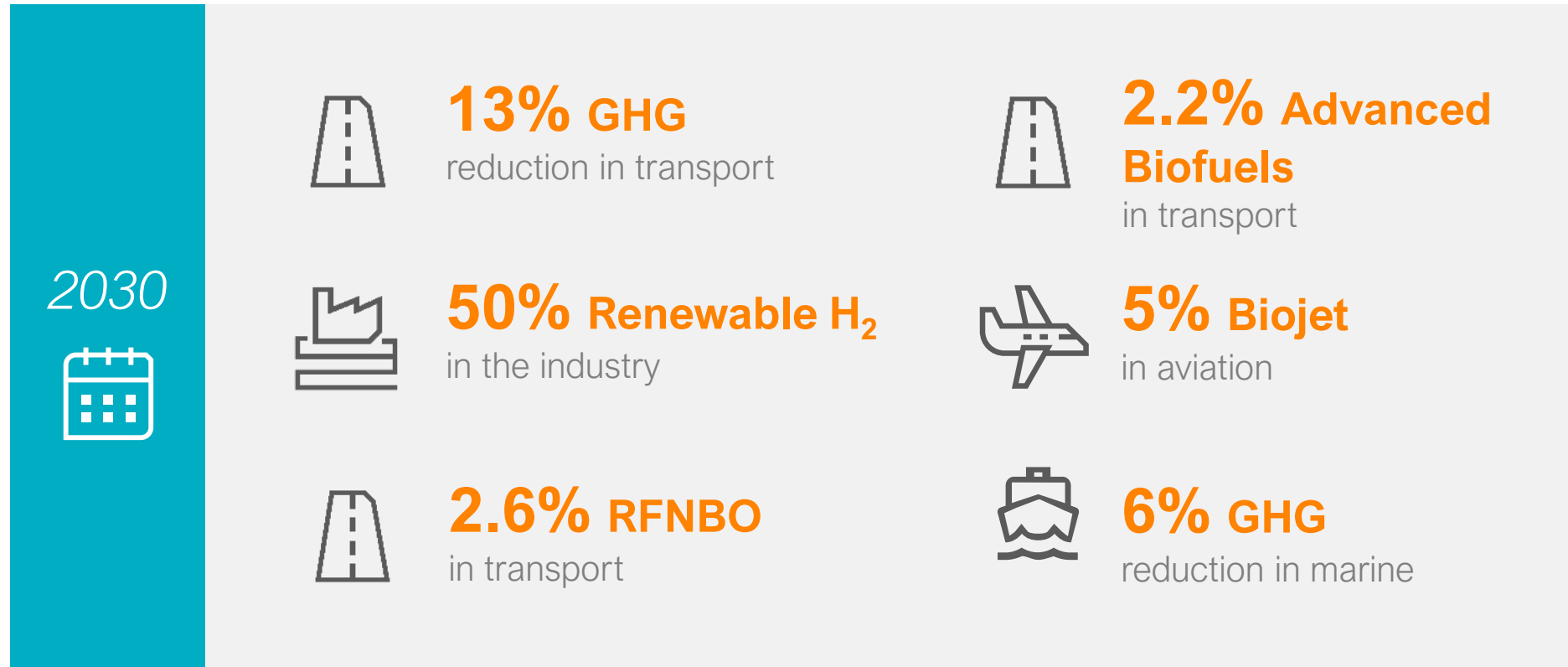
Regulation

Roadmap

Proposal to be discussed

01. Low Carbon Fuels Framework

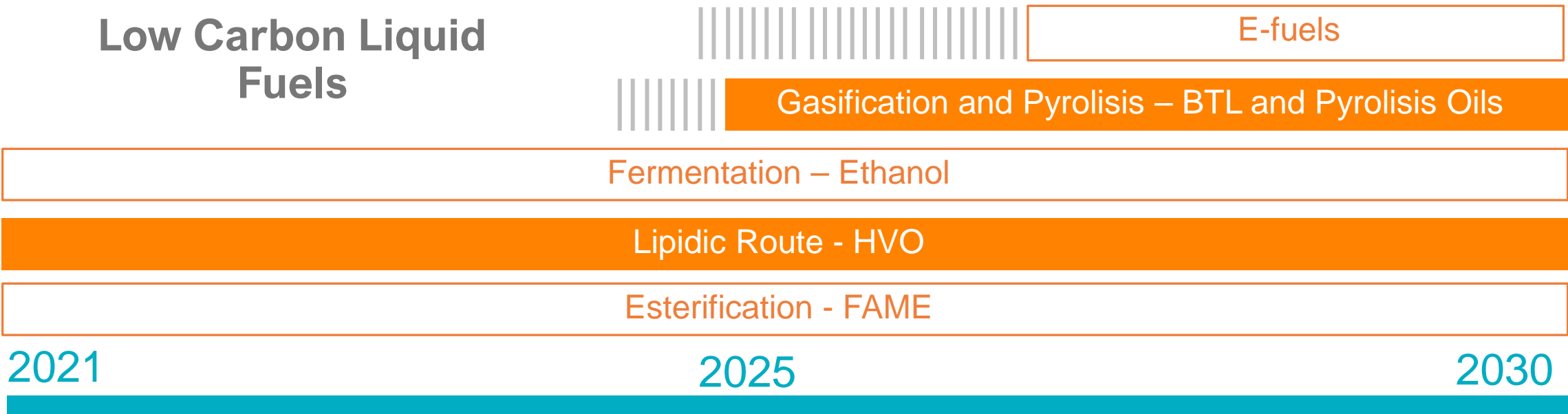
Regulation can significantly boost the development of low carbon products market



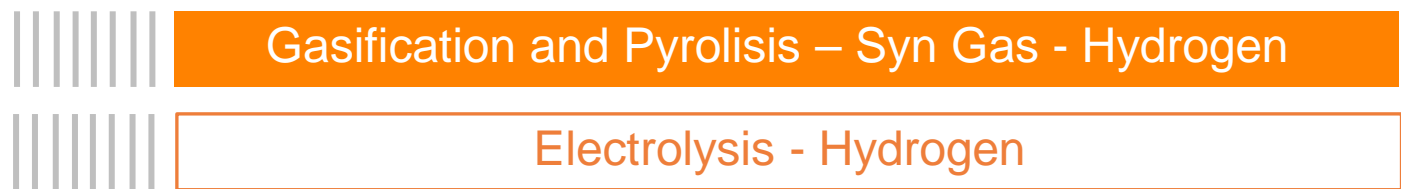
* Proposal for the revisions and initiatives linked to the European Green Deal climate actions and in particular the climate target plan's 55 % net reduction target presented under the Fit for 55 package published on 2021 July 14

Technology Routes

Low Carbon Liquid Fuels



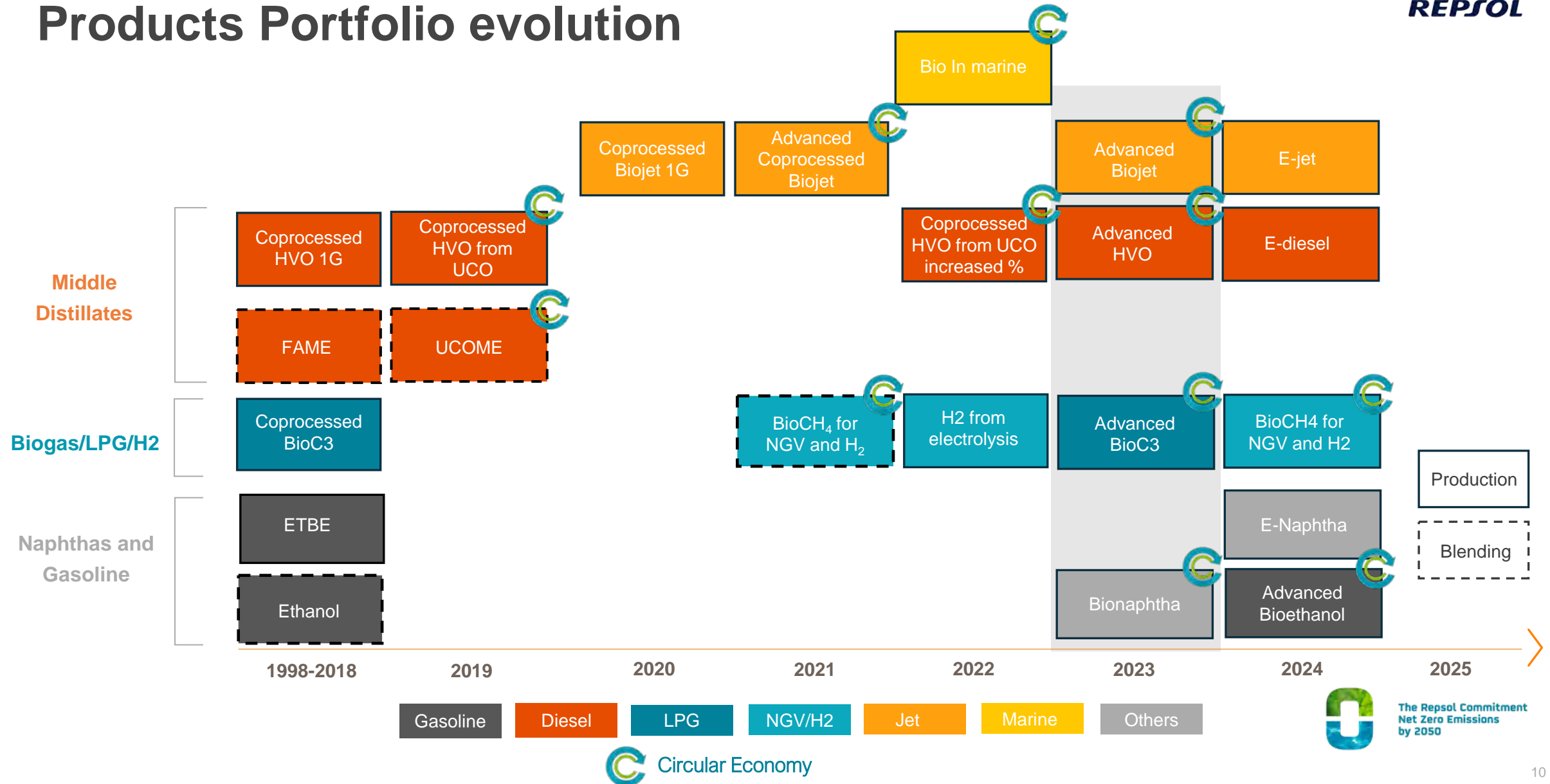
Renewable Gases



01. Low Carbon Fuels Framework



Products Portfolio evolution





02.

Providing Short Term Value



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Net Zero Emissions
by 2050



02. Providing Short-Term value

Low Carbon Fuels. A reality



Already a **leading HVO and bio-ETBE producer in Iberia**, and **first biofuels marketer in Spain**

Producing bio ETBE since 1998 and HVO since 2011



Boosting production of Bio Jet

- **Puertollano:** 1st co-processed biojet batch produced in Spain. 7,000 Tn in July 2020
- **Tarragona:** Co-processed biojet batch production. 10,000 Tn in January 2021
- **Petronor:** 1st advanced co-processed biojet batch produced in Spain. 5,300 Tn in July 2021



Testing more than 40 wastes and technologies for advanced biofuels and circular plastics

H₂

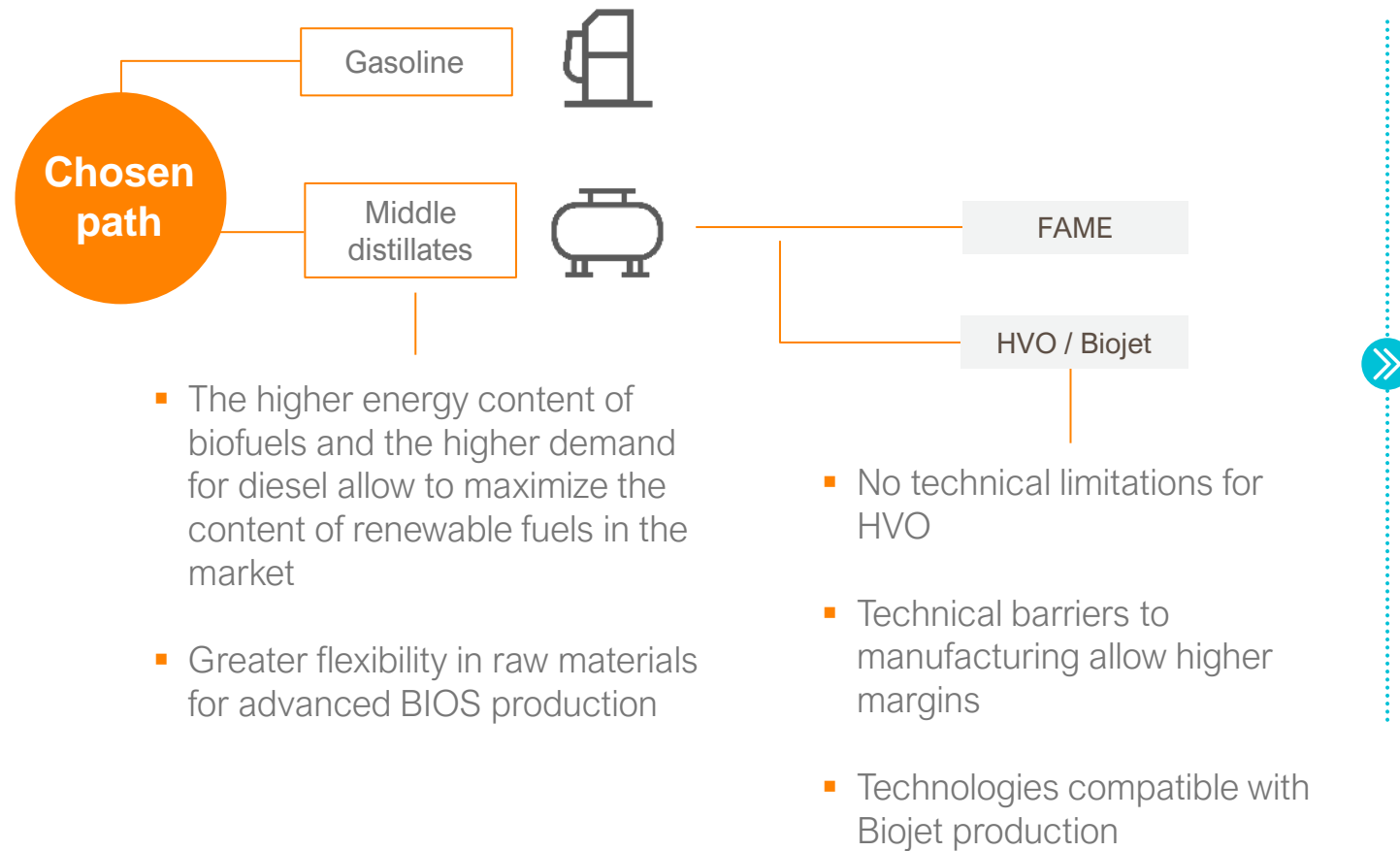
Leaders in renewable hydrogen: First production from biomethane in Cartagena steam reforming in October 2021



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Net Zero Emissions
by 2050

02. Providing Short-Term value

HVO, the best short-term route to grow in biofuels generating value



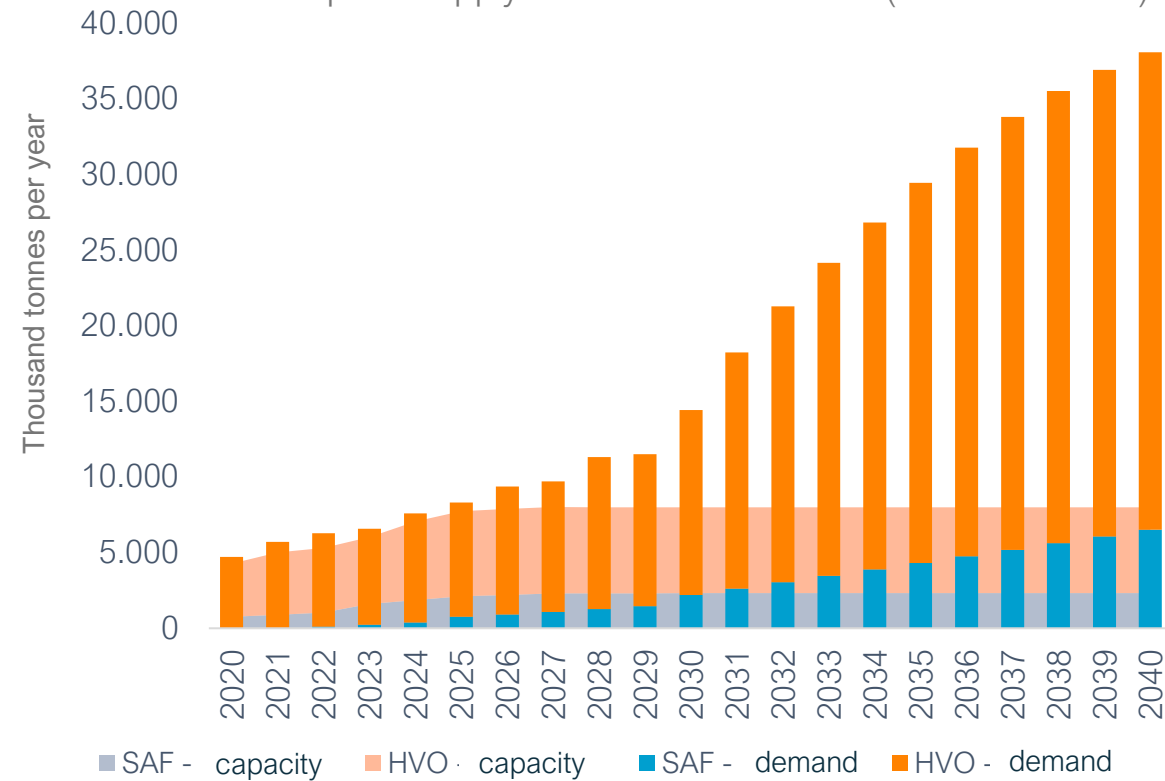
Production of advanced HVO is **the best option to comply with the legislation and grow in biofuels** generating value

02. Providing Short-Term value

HVO and SAF demand

From 2025 additional drop-in biodiesel and biojet production is needed to comply with biofuels mandates

European supply and Demand Balance (1G+ Advanced)



Source: Argus Consulting. REDII Based. June 2021

03. Our Pathway to 2030

HVO+SAF



Regulation

Renewable Energy Directive (RED)
ReFuel Aviation
FuelEU Maritime

Raw Material

Sustainable Vegetable Oils
UCO + animal fats
Other lipidic residues included in Annex IX Part A RED Directive

Technology

Hydrogenation - *Commercial*
New units or retrofiting

Final Uses

Transport (Road, Aviation and Marine)
By-Products for:
Renewable Hydrogen
Chemical Industry



Initiatives

21



Current Margin
250-750€/tep

Forecasted Margin
950-1,550€/tep

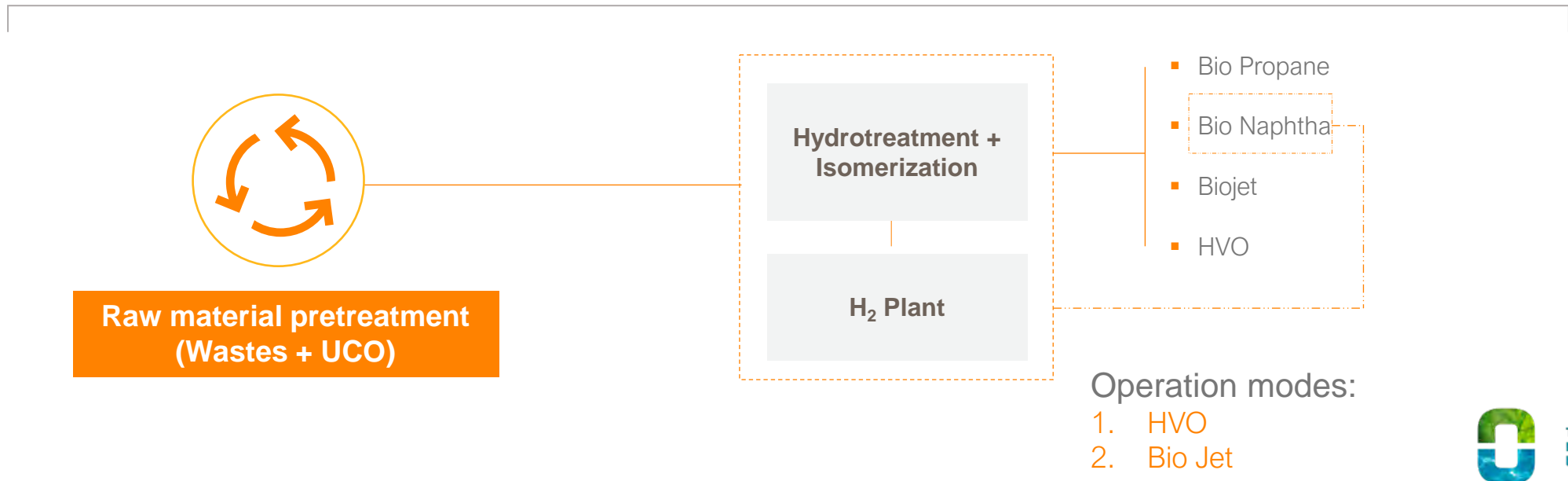


The Repsol Commitment
Net Zero Emissions
by 2050

02. Providing Short-Term value

New Advanced Biofuels Plant in Cartagena

Investment	Capacity	Start - Up	Emissions Reduction
€188 M	250 kty Low Carbon Fuels	1Q 2023	- 900 kt/y CO ₂ Emissions
	300 kty Waste and Residues Input		

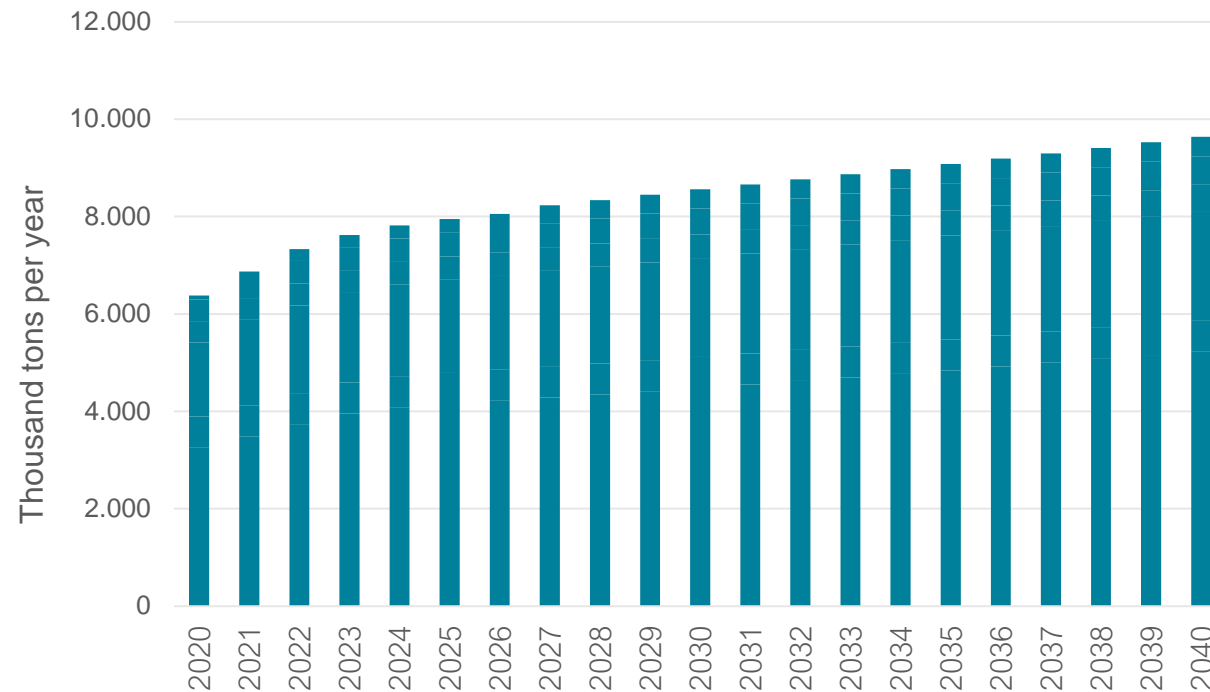


02. Providing Short-Term value

Wastes availability. Lipidic Route



Advanced lipids and greases European Availability



Source: Argus Consulting. June 2021

To go further in this route, raw material availability is key.

Already closing raw material agreements locally and internationally

The demand for these raw materials will stimulate its availability.

Before exhausting this route we are exploring others.



The Repsol Commitment
Net Zero Emissions
by 2050



03.

Our Pathway to 2030



The Repsol Commitment
Net Zero Emissions
by 2050



03. Our Pathway to 2030

Additional potential from solid wastes and CO₂

There is enough sustainable biomass (organic waste from any kind) in Europe for obtaining the expected advanced biofuel demand in 2050*.

To realise this potential, additional R&D would be required as well as the implementation of improvement management strategies. The supply chain would need to be developed to mobilise all these resources.

* Fuels Europe Clean Fuels for All Scenarios.

Source: Sustainable biomass availability in the EU to 2050. Imperial Collage 2021

Waste availability for energy uses (Mty)		
Type of Waste	2030	2050
Municipal & Industrial Bio-waste	44 – 80	33 – 61
Forestry Waste	204 – 370	215 – 408
Agriculture Waste	272 – 410	291 – 447

+ CO₂

03. Our Pathway to 2030

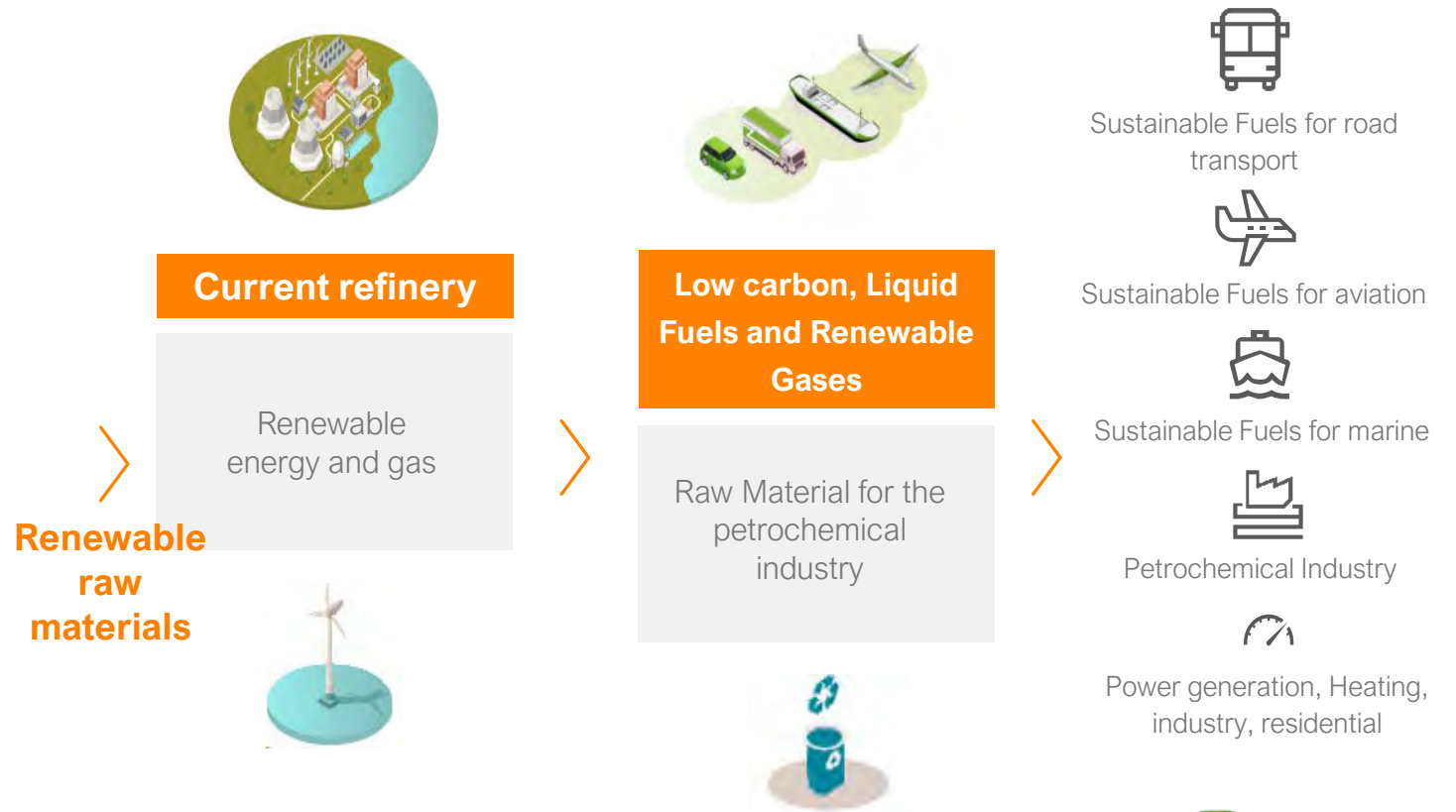
Integration with the refineries



Secondary Conversion >

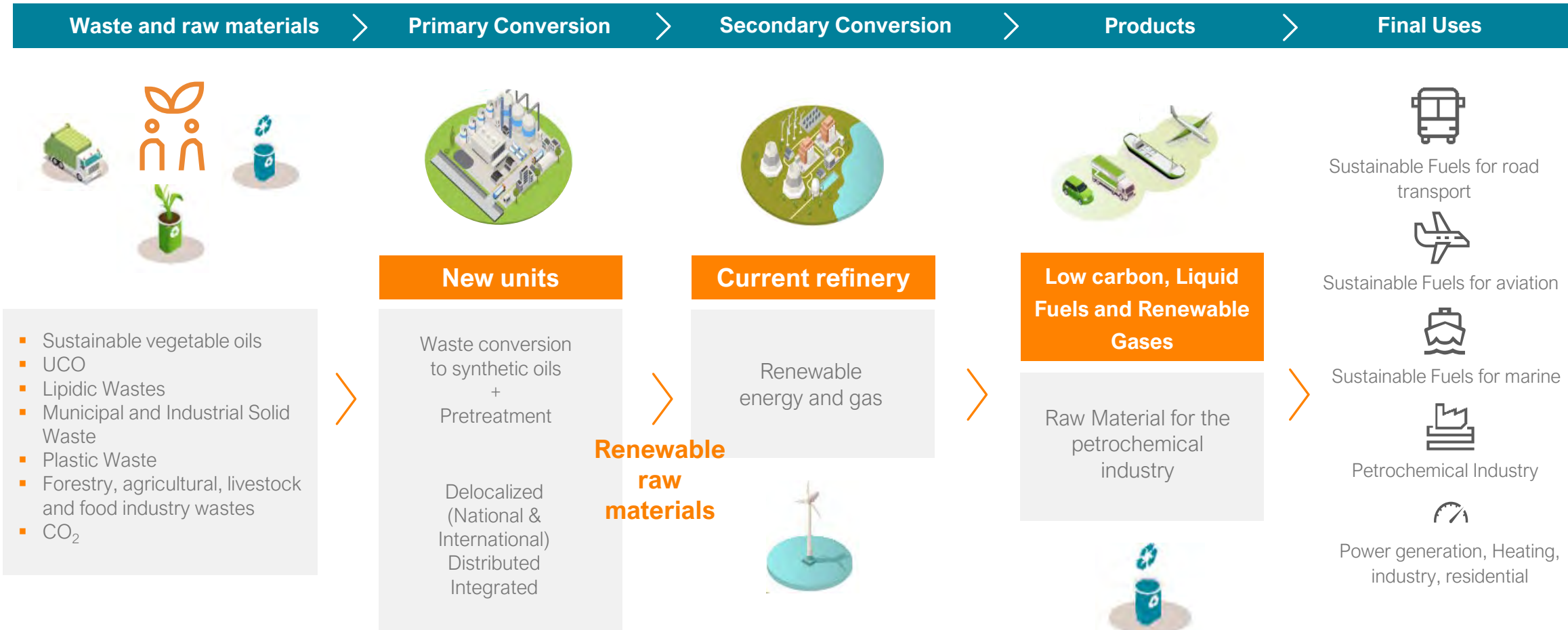
Products >

Final Uses



03. Our Pathway to 2030

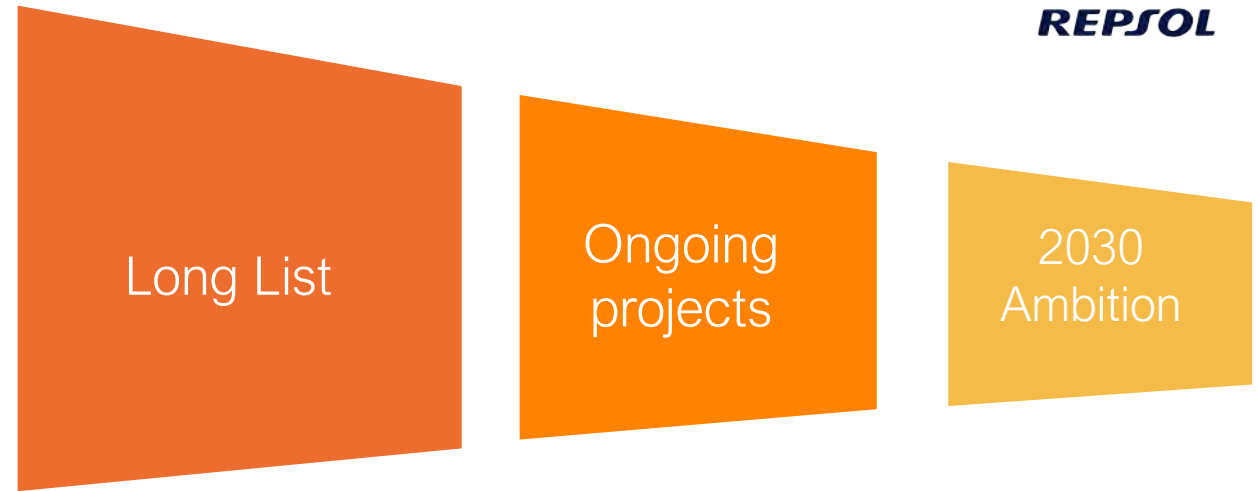
Integration with the refineries



03. Our Pathway to 2030

We are ready

The development of a wide pipeline of projects allows us to be ready to achieve our ambition adapting in the way to regulation, raw materials and technology.



Low Carbon
Fuels
Production
Capacity

3.5+ Mty



2 Mty

60+ Initiatives

Multitechnology. Raw materials flexibility. Competitive

Making use of the organization know-how and capabilities



The Repsol Commitment
Net Zero Emissions
by 2050

03. Our Pathway to 2030

BTL and Pyrolysis Oils

2025

2030

Demo

Scale-up

+130 kta

Regulation

Renewable Energy Directive (RED)
ReFuel Aviation
FuelEU Maritime
Waste Directive
Farm to Fork Strategy

Raw Material

Municipal Solid Waste (MSW)
Agriculture and forestry residues

Technology

Gasification + Chemical
synthesis/FT + Upgrading
Pyrolysis + Upgrading

Final Uses

Transport (Road, Aviation,
Marine)
Feedstock for chemical industry



Initiatives

4



Est. Gross Margin
200 – 2,000 €/tep



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Net Zero Emissions
by 2050

03. Our Pathway to 2030

E-Fuels



Regulation	Raw Material
Renewable Energy Directive (RED) ReFuel Aviation FuelEU Maritime	CO ₂ Renewable Hydrogen
Technology	Final Uses
Reverse Water Gas Shift – Under dev + FT + Upgrading - Commercial	Transport (Road, Aviation, Marine) Feedstock for chemical industry



Initiatives



Est. Gross Margin
0 – 4,000 €/tep



The Repsol Commitment
Net Zero Emissions
by 2050

03. Our Pathway to 2030

Advanced Ethanol



Regulation

Renewable energy Directive (RED)
Waste Directive
Farm to Fork Strategy

Technology

Fermentation –
Scaling up

Raw Material

Organic MSW
Agriculture residues

Final Uses

Transport (Road)
Intermediate Product for:
Renewable Hydrogen
Jet production



Initiatives



Est. Gross Margin
1,100 – 1,800 €/tep



The Repsol Commitment
Net Zero Emissions
by 2050

03. Our Pathway to 2030

Biomethane

2030

Commercial

400+ GWh/a

Regulation	Raw Material
Renewable Energy Directive (RED) FuelEU Maritime Guarantees of Origin Waste Directive Farm to Fork Strategy ETS	Organic MSW Agriculture + Livestock residues
Technology	Final Uses
Anaerobic Digestion + Upgrading – Commercial	Transport (Road and Marine) Hydrogen production Industry – Heat, Power Residential



Initiatives



Est. Gross Margin
450 – 750 €/tep



The Repsol Commitment
Net Zero Emissions
by 2050

03. Our Pathway to 2030

Renewable Hydrogen

Regulation

Renewable Hydrogen EU Strategy
Renewable Energy Directive (RED)
ETS

Raw Material

Renewable power and water
Biomethane
Biogas
Bionaphtha

Technology

Electrolysis - Scaling - up
Steam Reforming - Commercial

Final Uses

Intermediate for fuels production
Transport
Industry
Residential



Initiatives



The Repsol Commitment
Net Zero Emissions
by 2050

03. Our Pathway to 2030

Maximizing Value through partnerships

We have over 45 partnerships in the whole value chain to develop decarbonization projects.

The partnership model is flexible including co-investing, long term contracts, etc.



Raw material sourcing and pretreatment

Technology & Operation

Final Use

Waste management and pretreatment
Biomass sourcing
Agriculture and livestock producers

Technologist and licensors
Technology Centers
Biomass plants operators

Airlines
Shippers
Fleet Operators
OEMs

Demo plants

Public Funding



The Repsol Commitment
Net Zero Emissions
by 2050

03. Our Pathway to 2030

Summary

Repsol is the **leading HVO and bio-ETBE producer in Iberia**, and **first biofuels marketer in Spain**.

We incorporate biofuels in our products since 1998.

Clear pipeline to 2025 with **Cartagena advanced biofuels plant** as main project ready in 1Q23.

Wide pipeline of initiatives to achieve our 2030 goals:

- Application of different technologies
- Flexibility in raw materials
- Strategic partnerships

Applying **strengths** and **know how** of the traditional business to new developments: Competitiveness, integration and flexibility.





Low Carbon Day

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REPSOL

Low Carbon Day

Chemicals - Circularity

Rafael Jiménez

Director of Polyolefins



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Index

01.

Repsol Chemical Business Overview

02.

Repsol Chemical Business Strategy

03.

Chemicals Transformation - Circularity

- Targets
- Roadmap
- Projects and value chain

04.

Executive summary



The Repsol Commitment
Net Zero Emissions
by 2050



01.

Repsol Chemical Business Overview



The Repsol Commitment
Net Zero Emissions
by 2050



01. Repsol Chemical Business Overview

Repsol Chemical Business Key figures



3

Main highly integrated & flexible petrochemical sites in Iberia

~550 M€y

Average EBITDA 2015-2020

~900 M€y

Projected EBITDA 2021

2,800 kt/y

Sales

~20%

Average ROACE 2015-2020

~35 %

Projected ROACE 2021

>1,000

Relevant customers

~2,000

Staff

~1,700 M€

Capital employed

High complexity production & logistics

~350 different grades / lean production / multi-modal delivery

>85 countries

Sales

~15th

World producer high value products (PO/ Polyols, EVA)

 **JV Dynasol**

50/50 strategic Alliance between Repsol and KUO (Mexico) in synthetic rubber business plants in Europe, LATAM and China

~100 M\$/y

Average EBITDA 2016-2020

310 kt/y

Sales 2020



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01. Repsol Chemical Business Overview

Diversified Portfolio committed with improving Life Standards and with Energy Transition



Many low-carbon technologies rely on innovations in chemistry to become more efficient, affordable and scalable



Ethylene	Propylene	Butadiene	Benzene
<p>Polyethylene</p> <p>High Density Polyethylene (HDPE), Metallocene PE</p> <p>Blow moulding, fiber, pipe, cable, layers, film</p> <p>Low Density Polyethylene (LDPE)</p> <p>Film, agriculture, coating, pipe, cable</p>	<p>Polypropylene</p> <p>Polypropylene (PP)</p> <p>Injection, fiber, film, pipe, compounds, auto, pharma</p> <p>Polyols / Glycols</p> <p>Polyols Applications, POLYURETHANES</p> <p>Flexible foam, rigid foam, non-cellular Polyurethanes</p> <p>MPG USP/ EP applications</p> <p>Pharmaceutical applications, food, feed, cosmetics</p>	<p>Styrene</p> <p>DERIVATIVES: Polystyrene, Rubber, UPR Resins and Copolymers</p> <p>Cover of electrical appliances, packaging, construction, toys and household, automotive</p> <p>Rubber</p> <p>Rubber</p> <p>Asphalt modifiers, waterproofing, adhesives and sealants, plastics modification, technical compounds, footwear...</p>	<p>Benzene</p>

Chemicals are key

- Efficient building envelopers 11%
- Lightweight material 4%
- Fuel efficient tires 2%

Chemicals relevant

- Wind & Solar Power 50%
- Electric cars 21%

Little influence

- Efficient lighting 12%

CO₂ emissions reduction in each area due to the use of chemicals; weight on total Study "The essential role of chemicals", ICCA



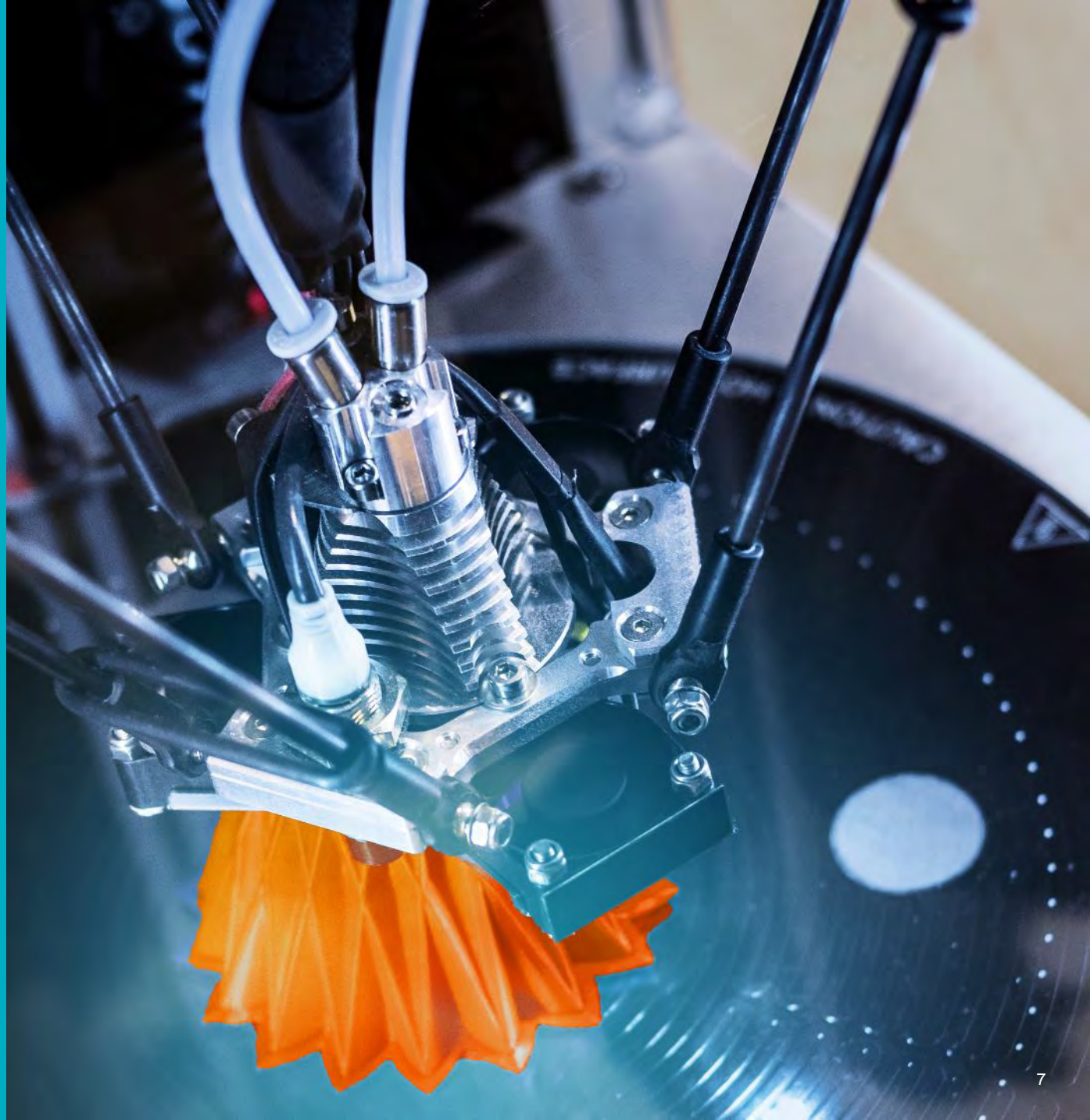


02.

Repsol Chemical Business Strategy



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02. Repsol Chemical Business Strategy

Repsol Chemicals Strategy: Opportunity for profitable growth through 3 levers



Integrate (Should do)

Reinforce our position, with Higher Integration



Expand (Could do)

International growth with added value



Transform (Must do)

Transform Chemicals through De-carbonization, Differentiation, Digitalization and Circularity



OPPORTUNITY to evolve to a more resilient and profitable business through horizontal and vertical integration



OPTIONALITY for additional growth in high attractive market, aligned with energy transition, where Repsol could accelerate decarbonization



NEED to transform Repsol Chemical business, adapting it to Industry Trends: Digitalization, Circularity, Differentiation, Flexibility... transforming it to a more profitable business with higher competitive advantages and entry barriers.

De-carbonization & Efficiency & Flexibility

Differentiation

Digitalization

Circularity

Reliability

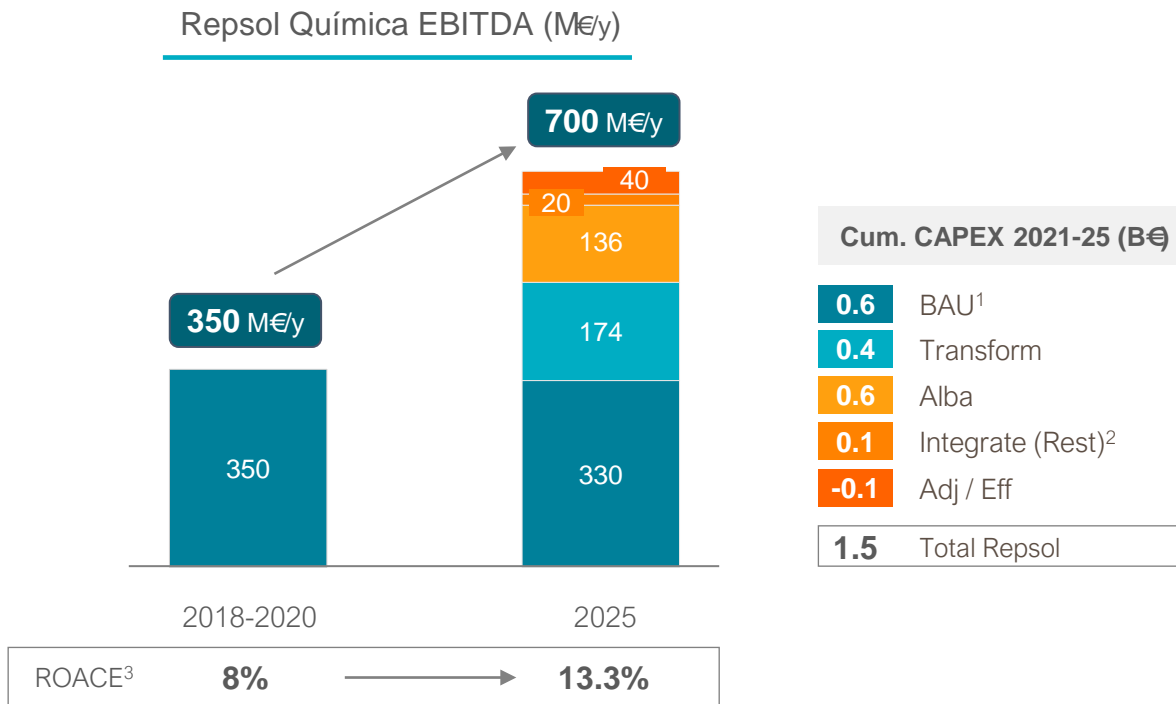
Safety & Environment



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02. Repsol Chemical Business Strategy

Repsol Chemicals Strategic Plan targets growth in EBITDA by 2025 in a stable medium-low margin scenario



1. Business as usual; 2. Including Dynasol and Repsol Química initiatives; 3. ROACE is calculated after taxes



Transform and integrate the current business to increase **Repsol Química EBITDA by ~2x in 2025** in a stable medium-low margin scenario



Optional Opportunities to invest with high return and **double capital employed**, improving ROACE from 8% to more than 13%



Boost Business Value due to a more solid business

- Integration and flexibility building resilience
- Robustness and efficiency of the operation
- Diversified footprint with differentiated products and geographies





03.

Chemicals Transformation Circularity



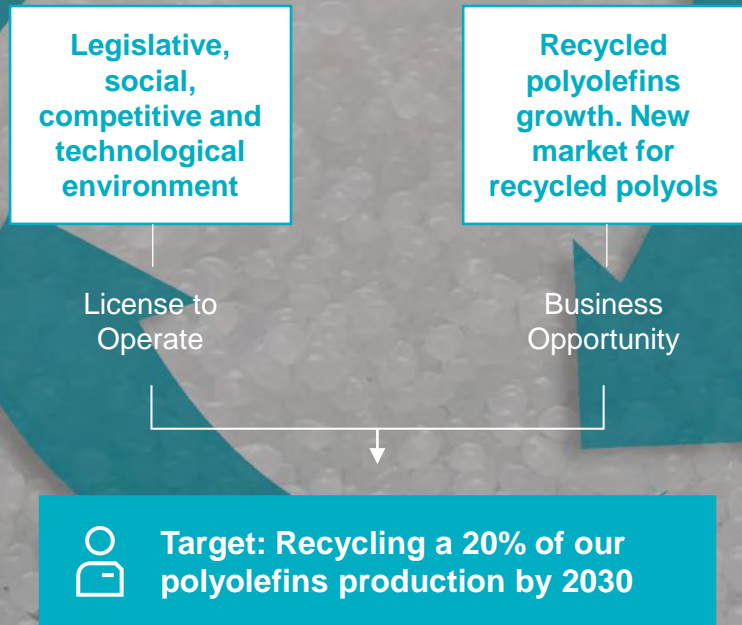
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by 2050



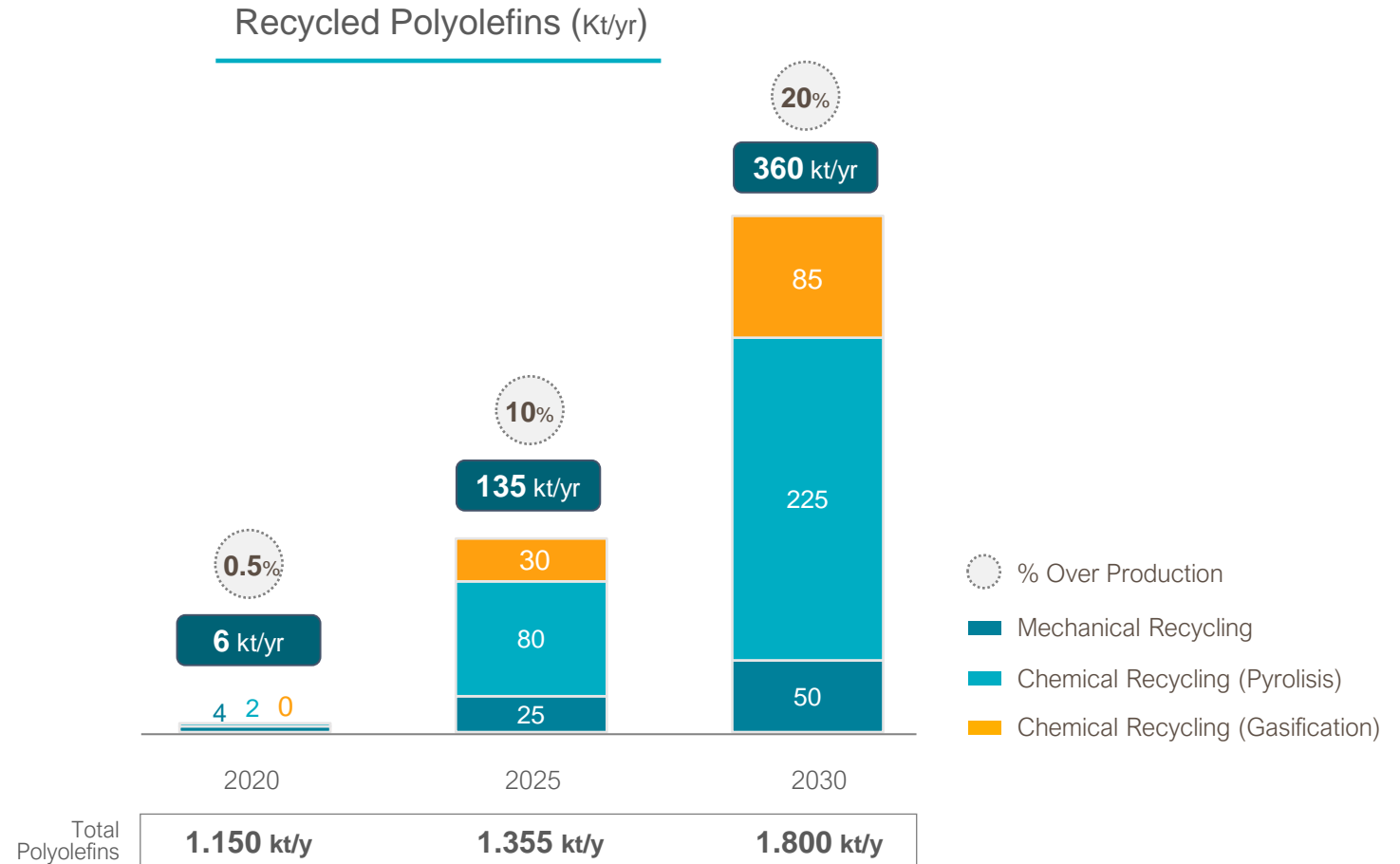
03. Chemicals Transformation - Circularity

Targets

License to Operate and Business Opportunity



Target: Recycling equivalent to 20% of our polyolefins production by 2030

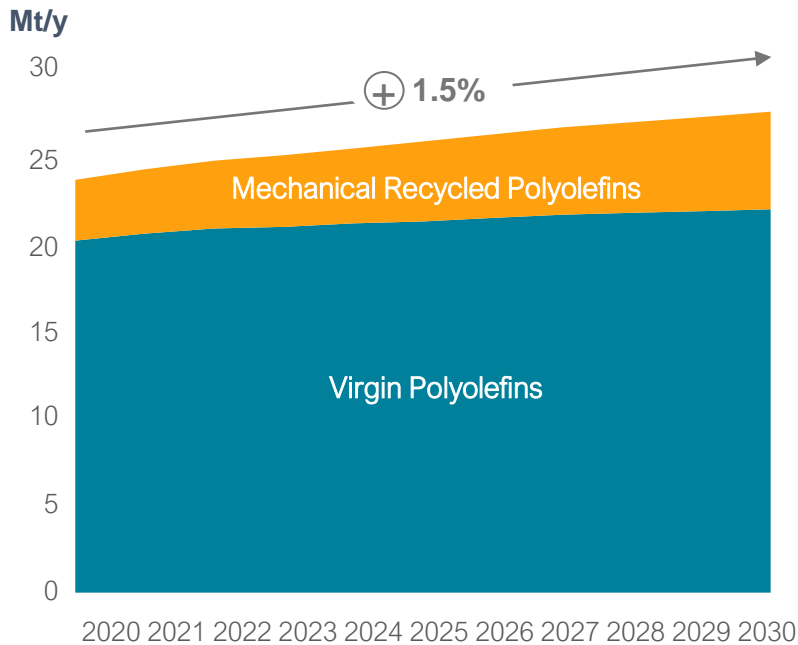


03. Chemicals Transformation - Circularity



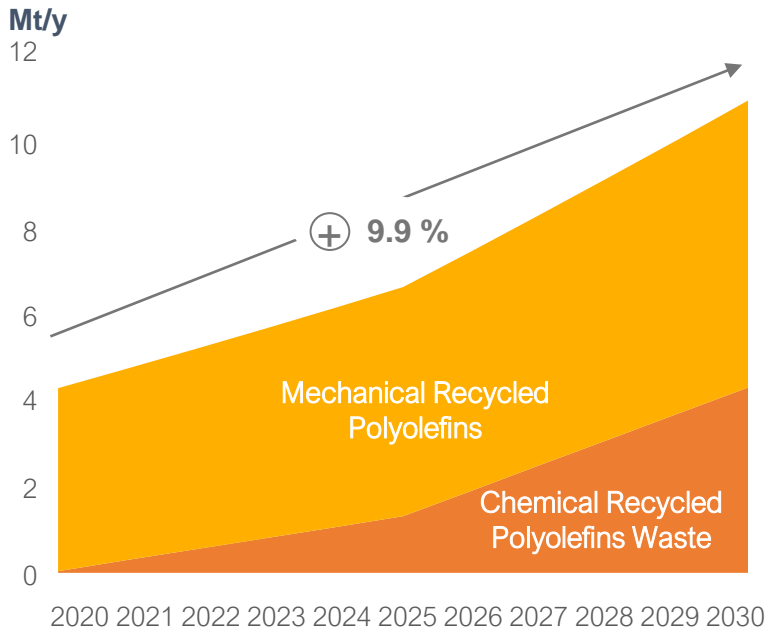
Polyolefin Market in Europe will be growing at healthy rates (both Virgin and Recycled) over next decade

Polyolefins Demand in Europe (2020-2030)



2020-2030	
CAGR (%)	Total Growth (Mt/y)
1.5%	3.7
4.6%	2.0
0.8%	1.7

Recycled Polyolefins Demand in Europe (2020-2030)



2020-2030	
CAGR (%)	Total Growth (Mt/y)
9.9%	5.5
4.6%	2.0
58.5%	3.5

Sources: Analyst's average: IHS, Nexant, WoodMckenzie; Recycled data from Conversio, IHS and Repsol; Europe = EU 27+UK+Switzerland+Norway



Roadmap to reach our targets

Processing pyrolysis oil in our refineries

Start-ups: 2015, 2020

ISCC PLUS certification in Tarragona, Puertollano and Sines

Start-up: 2020

Mechanical Recycling

Recycled volume: 52 kt/y
Start-ups: 2018, 2021

Polyurethane Recycling

Recycled volume: 6 kt/y
Start-ups: 2022, 2026, 2027

Pyrolysis

Recycled volume: 230 kt/y
Start-ups: 2024, 2026, 2027

Gasification

Recycled volume: 240 kt/y
(Repsol share: 85kt)
Start-ups: 2025, 2028, 2030





TOTAL CAPEX:
≈€1,400 M
(Repsol Equity €665 M - unlevered)

03. Chemicals Transformation - Circularity



Projects and value chain

Polyolefins & Polystyrene
Polyols

	WASTE	TECHNOLOGY	PRODUCTION	MARKET
RECICLEX® Mechanical	High quality post-consumer waste 	Mechanical Recycling	<ul style="list-style-type: none"> Repsol Compounds Plants: Monzón PP & Puertollano PE Reciclex compounds production in ACTECO 	<ul style="list-style-type: none"> Polyolefins that incorporates recycled material Usual polyolefin market (packaging, auto, etc.). Currently sales to 20 customers
RECICLEX® Circular	Plastic mix High quality CSR 	Chemical Recycling PYROLYSIS	<ul style="list-style-type: none"> Crude processing in Puertollano and free allocation to products by mass balance. In project: Pyroplast; FCC Puertollano; Tarragona's crude; Direct Styrene. 	<ul style="list-style-type: none"> Circular polyolefins with ISCC PLUS certification (3 certified complexes) Currently sales to 10 customers
ECOPLANTA® ecoplanta <small>MOLECULAR RECYCLING SOLUTIONS</small>	Urban solid waste 	Chemical Recycling GASIFICATION	<ul style="list-style-type: none"> Ecoplanta integrated in Tarragona site The extension of the model to other sites is in the conceptualization phase 	<ul style="list-style-type: none"> Methanol: RED II fuels; Chemical Industry, Marine fuels Methanol-to-Olefins under evaluation
RECPUR	Industrial/ Clients residues Mattress foam waste 	Chemical Recycling ACIDOLYSIS	<ul style="list-style-type: none"> New plant at Puertollano for production of polyols 	<ul style="list-style-type: none"> Polyols incorporating recycled material for the foam market in the comfort sector in Europe. Agreement with 6 key customers for product homologation and formulation adjustment.

03. Chemicals Transformation - Circularity

Repsol RECICLEX® Mechanical Recycling

Description

Develop a new range of polyolefin-based products that incorporate a variable percentage of recycled plastics in their formulation, without losing the properties of the virgin material in the application.



TARGET

Achieve sales of **100 kt/year** (50% average recycled content) of Reciclex Compounds by 2030



New product properties



Up to 70% recycled content
More than 20 grades



Many applications (non food contact):
film, packaging, injection, blow, moulding, and others.



Constant quality and homogeneity,
similar properties to virgin grades



Traceability Certificate UNE-15343



100% recyclable



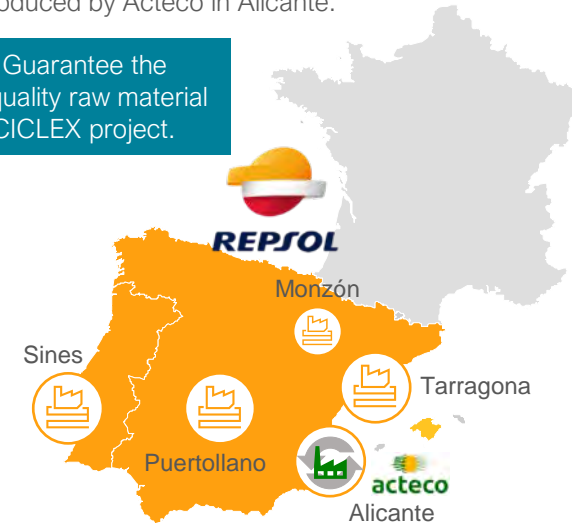
Up to -40%
Carbon footprint reduction

Partnerships



Project to increase the capacity of the recycled materials produced by Acteco in Alicante.

TARGET: Guarantee the supply of quality raw material for the RECICLEX project.

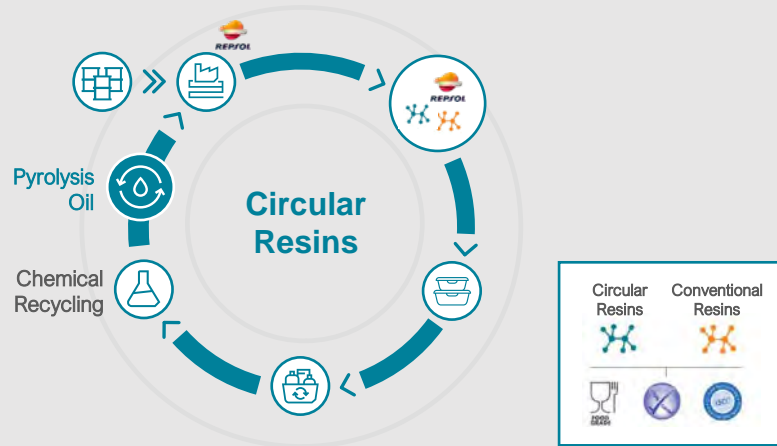


03. Chemicals Transformation - Circularity

Repsol RECICLEX® Circular: Chemical Recycling - Pyrolysis

Description

To develop a new range of circular plastics from plastic waste, not mechanically recyclable, with the same properties as products made from fossil raw materials.



TARGET
Recycle **225 kta of plastic waste** into pyrolysis oil for the development of circular polyolefin by 2030.



New product properties

- Raw material 100% recycled plastic
- Complete Repsol range in all applications, with same properties
- Suitable for food, hygiene and medical use
- 3 sites ISCC Plus certified with mass balance
- 100% recyclable
- Low carbon footprint

Chemical recycling facilities



Pyrolysis oil approach & partnerships

1. Production

Since 2015 supplying pyrolysis oil into Puertollano site. Now we are in the process of developing pyrolysis oil suppliers.

2. Purification | Pyroplast Project

Repsol, Axens and IFP developed and patented process to enhance the chemical recycling of plastic waste - **Rewind™ Mix**



3. Marketing

Repsol signs agreements to supply main European food packaging producers with **ISCC Plus Certified Circular Polyolefins**. We are able to supply premium Polyethylene or Polypropylene grade as well as styrene to our customers



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by 2050

03. Chemicals Transformation - Circularity

Polyurethane Recycling RECPUR

Description

Developing a new range of **RECYCLED POLYOLS**.

RECPUR closes the cycle of the Circular Economy of Polyurethane:



Processing the waste



Our customers can incorporate recycled product in their process



"Plastic-to-plastic" process



Polyol with lower CII (Carbon Intensity Indicator)



TARGET

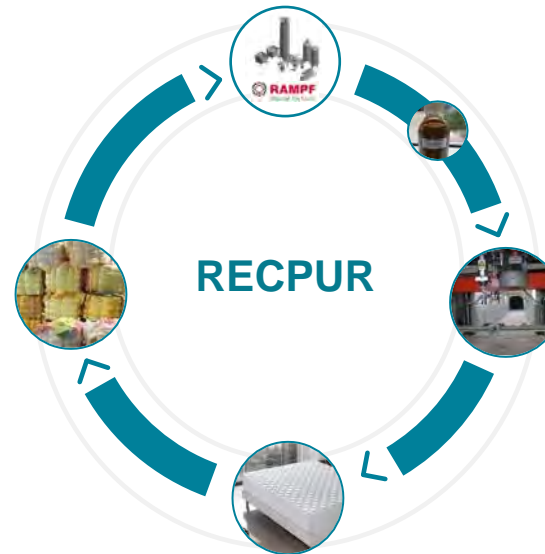
Achieve 15% of polyols for the Comfort Market with recycled origin by 2028.

Being a "First Mover"



Concept

The foam residue (2 kt/y) is fed to a chemical recycling plant to produce "polyol of recycled origin" (5 kt/y) which is then incorporated into the customer's formulation to produce foam again to manufacture new mattresses or furniture.

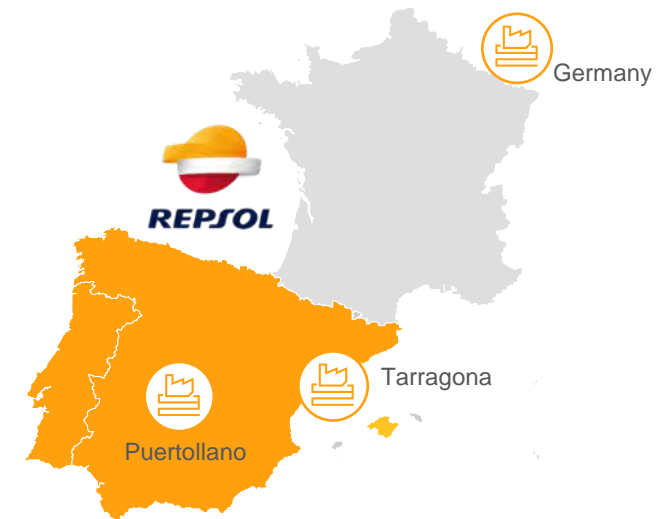


Partnerships



RAMPF Eco Solutions based in Pirmasens, Germany, is an expert in chemical solutions for the manufacture of high-quality recycled polyols

RECPUR locations



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Net Zero Emissions
by 2050

03. Chemicals Transformation - Circularity

Waste-to-Chemicals ECOPLANTA®

Description

Repsol will join the Ecoplanta® project, together with the technology leader Montreal-based firm Enerkem and Agbar, a global expert in water and waste management, to build a waste to chemicals plant in Tarragona.

The plant will process municipal solid waste to produce methanol, that will be used as raw material to produce circular materials or advanced biofuels, contributing to avoid 200 kty of CO₂ and reducing the waste that ends up in the landfill.

ECOPLANTA® locations



The proposed location is **Tarragona** where various synergies will leverage the proposal



Circularity– waste to chemicals

- Reduction of landfill of 390kt of MMW (Mixed Municipal Waste)
- No competition with food supply
- No land use impact

Strengthen Tarragona Complex

- Tarragona has a high rate of landfill
- Synergies with Repsol Quimica
- Potential valorisation of Repsol's land

Suitable for EU funding

- The project can ask for funding in the European Union subsidy package
 - Innovation Fund (up to €90 M)
 - Recovery Fund

TIER 1 Partners

- **Enerkem** Technology leader
- **Agbar** Waste management leader

Innovative and proven technology

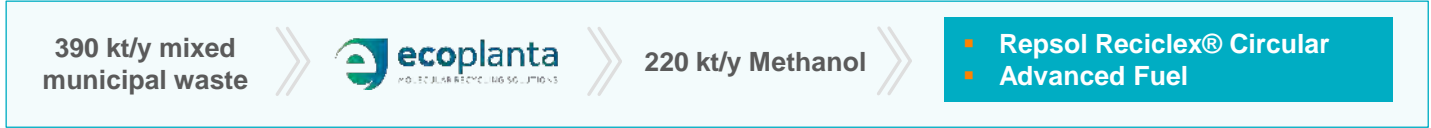
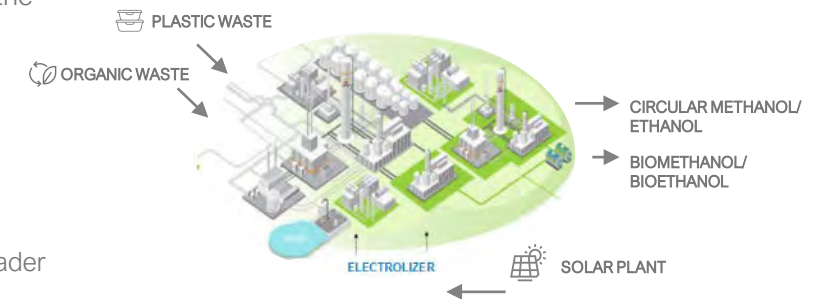
- Gasification technology
- Most developed technology in waste to chemicals

Circular and Bio products

- Interesting premium for Biomethanol
- Possible chemicals route via ethanol production

Option of Green H₂

- Requirement of 2.7 t/h H₂
- Opportunity for green H₂ project
- Low carbon footprint



Repsol Roadmap includes the extension of the project, with feasibility studies for Sines and Puertollano



Executive summary

Circularity is going to be a must for the chemical industry:

- Chemical products contribute to **reduce GHG emissions**
- The European **virgin polyolefins market grows at 0.8% and the recycled at 9.9% CAGR**
- There will be **new business opportunities** in circularity
- Repsol is well positioned for recycling as our petrochemical sites are **well integrated**
- We have been one of the **first European chemical producers** feeding pyrolysis oil into our system and marketing circular polyolefins
- Repsol has the **target of recycling 20% of our polyolefins production** by 2030
- To do that, we have a clear roadmap with **four main projects to invest €1,400 M** (Repsol Equity €665 M - unlevered) with different technologies and partners, and we continue developing new projects to reach our recycling goals in 2030



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Hydrogen business strategy

Tomás Malango

Director of Hydrogen



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Index

01.
Hydrogen market vision

02.
Repsol position

03.
Ambition

04.
Business roadmap



The Repsol Commitment
Net Zero Emissions
by 2050



01.

Hydrogen market vision



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Net Zero Emissions
by 2050

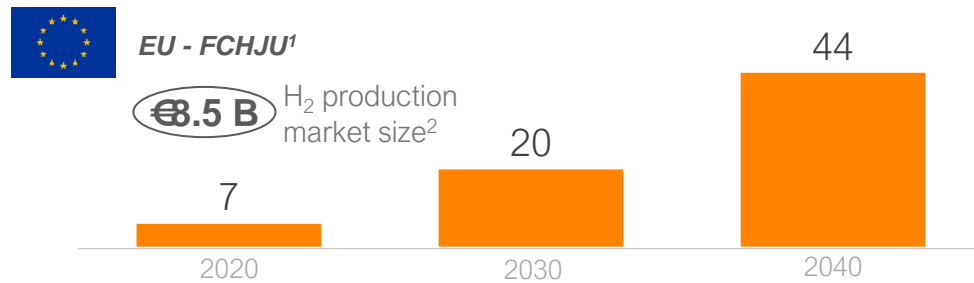


01. Market Vision

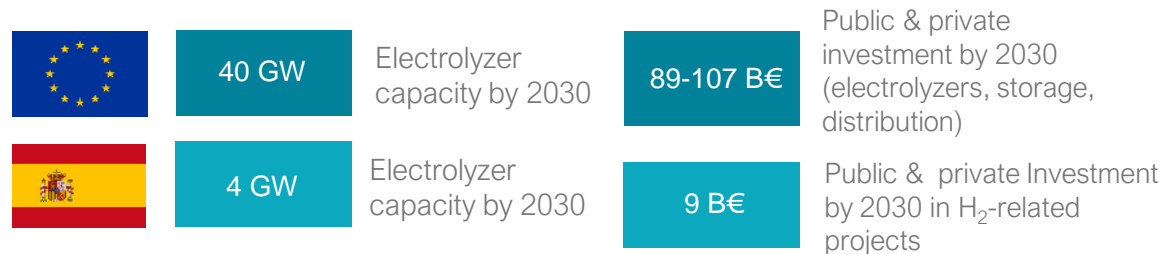
Strong hydrogen market growth

1 Demand growth driven by low carbon H₂

- EU hydrogen demand – Market forecasts (M tons/yr)



2 Ambitious H₂ development targets in the EU and Spain, supported by public and private funding



Spanish government supports deployment of low carbon H₂ under EU funds, with **€1.55 B before 2024**

3 Recently launched "Fit for 55" regulatory package with ambitious targets supporting H₂ development

- Strong 2030 penetration targets
 - Min. 50% share of renewable H₂ consumption in industry
 - 2.6% minimum quota of RFNBO³ in transport
 - 0.7% e-fuels share in the aviation fuel mix (5% in 2035)
- Discount tax rates for the use of renewable and low-carbon hydrogen for end-consumers (based on energy content)

4 Further regulatory support still in progress

- Economic incentives to ensure low carbon H₂ competitiveness
- Secondary regulation for H₂ and the 3rd Gas Package review including the contribution of H₂ to decarbonization of gas markets to be launched in December.
- Technical requirements for production of H₂ and derivatives (e.g. renewable energy feed criteria, requirements on CO₂ for e-fuel production, etc.)

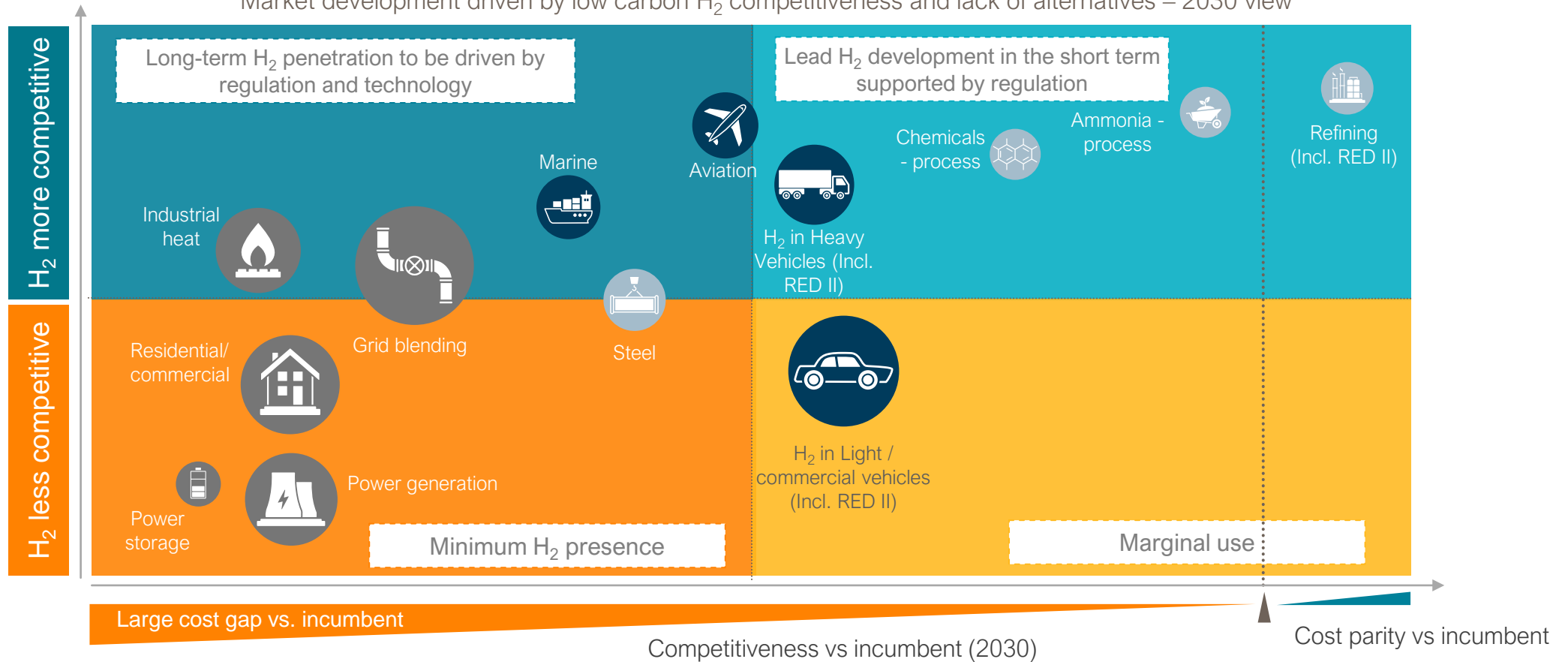
1. EU-FCHJU forecast (Fuel Cell and Hydrogen Joint Undertaking)
 2. Market size estimated with 1.3 €/kg full grey (incl. capex) H₂ production cost (assuming natural gas cost of 20 €/MWh and excluding CO₂ price)
 3. Renewable Fuel of Non Biological Origin – H₂ and H₂ derivatives (e.g. e-fuels)

01. Market Vision

Industry & transport lead market for renewable H₂

Industrial processes and heavy vehicles are the most promising short-term applications

Market development driven by low carbon H₂ competitiveness and lack of alternatives – 2030 view



Legend

- Industry
- Transport
- Power & Heat

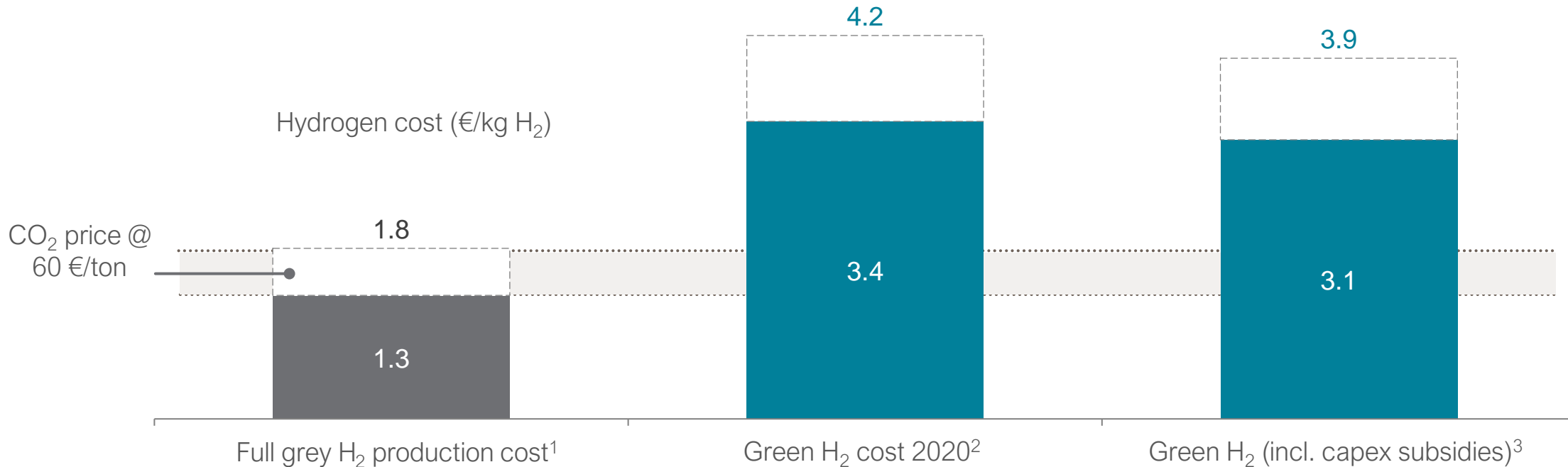
Bubble size is proportional to application's CO₂ emissions

01. Market Vision

Regulatory support & Refining competitiveness

EU regulation (RED II&III) can bring competitiveness to renewable H₂ produced for refineries

Industrial processes: competitiveness achieved in refining due to H₂ for fuel production being included as part of renewable targets in transport



1. Natural gas price 20 €/MWh; range corresponds to CO₂ price (from 0 to 60€/ton)

2. 100 MW electrolyser, 1200€/kW of CapEx (full project costs incl. electrical connection, civil, intermediate storage, project costs), 65% electrolyser efficiency, ~70% load factor, range corresponds to power price between 32 and 50€/MWh; additionally considers 6.4€/MWh grid toll.

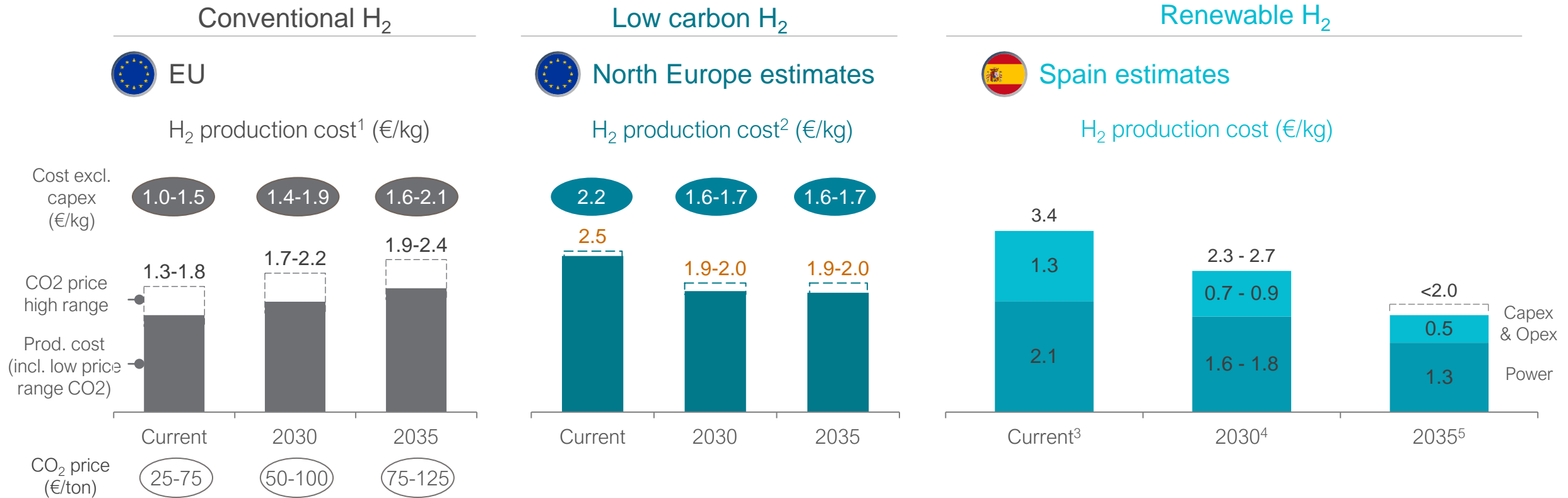
3. H₂ capex subsidies 25% : effective capex 900 €/kw (Total capex 1200 €/kw)



01. Market Vision

Hydrogen competitiveness

Low-carbon H₂ expected to become competitive vs incumbent by 2030-35



1. 20 €/MWh natural gas price
 2. Considers carbon capture of 90% of total CO₂ produced
 3. 100 MW electrolyser, 1200€/kW of CapEx (full project costs incl. electrical connection, civil, H₂ intermediate storage, project costs), 65% electrolyser efficiency, ~70% load factor, electricity price 32€/MWh, 6.4€/MWh grid toll.
 4. Low range: 100 MW electrolyser, 579€/kW CapEx, 68% efficiency, ~70% LF, electricity price 25 €/MWh, 6.4€/MWh toll; high range: 100 MW electrolyser, 760€/kW CapEx, 68% efficiency, 70% LF, electricity price 30€/MWh, 6.4€/MWh toll.
 5. CapEx 400 €/kw, 68% efficiency, LF ~70%; electricity price 20 €/MWh, 6.4€/MWh toll, OpEx 24 €/kW



02.

Repsol position



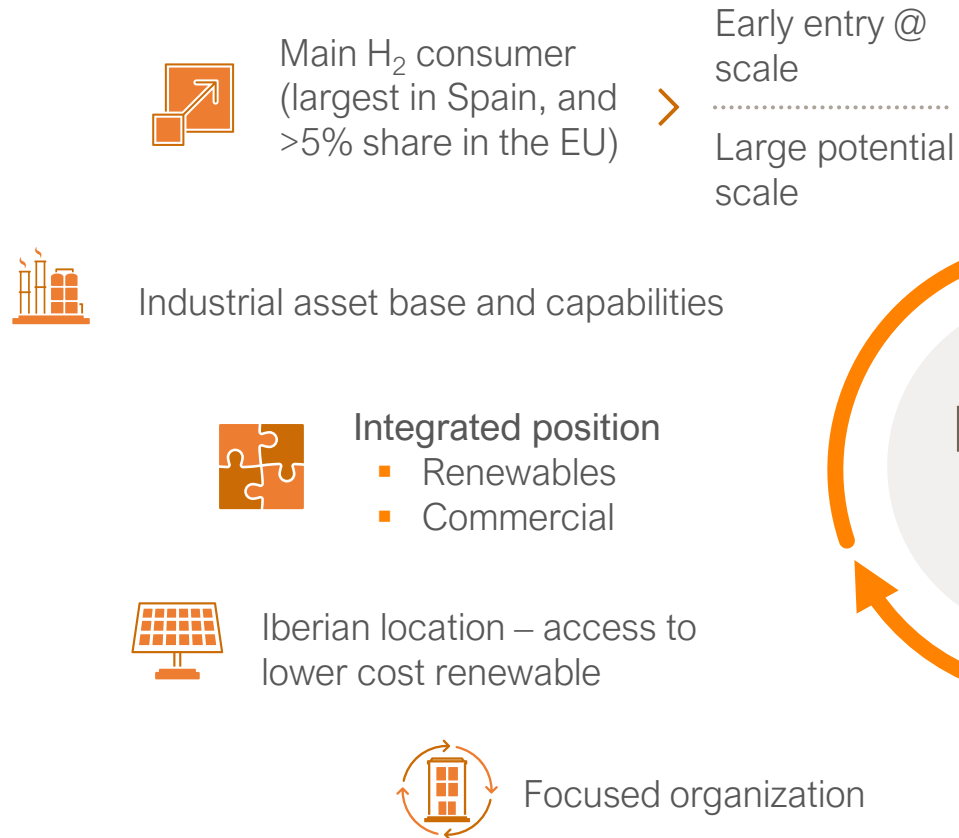
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by 2050



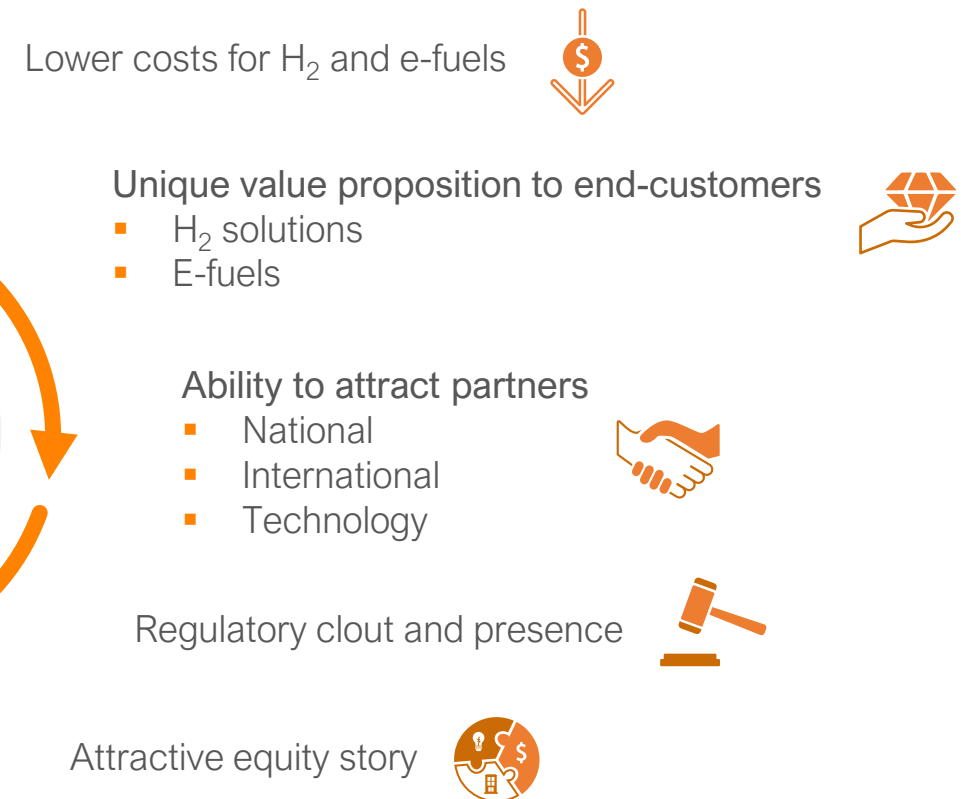
02. Repsol Position

Repsol competitive advantages

Leveraging sources of competitive advantage...



... driving a differentiated market position



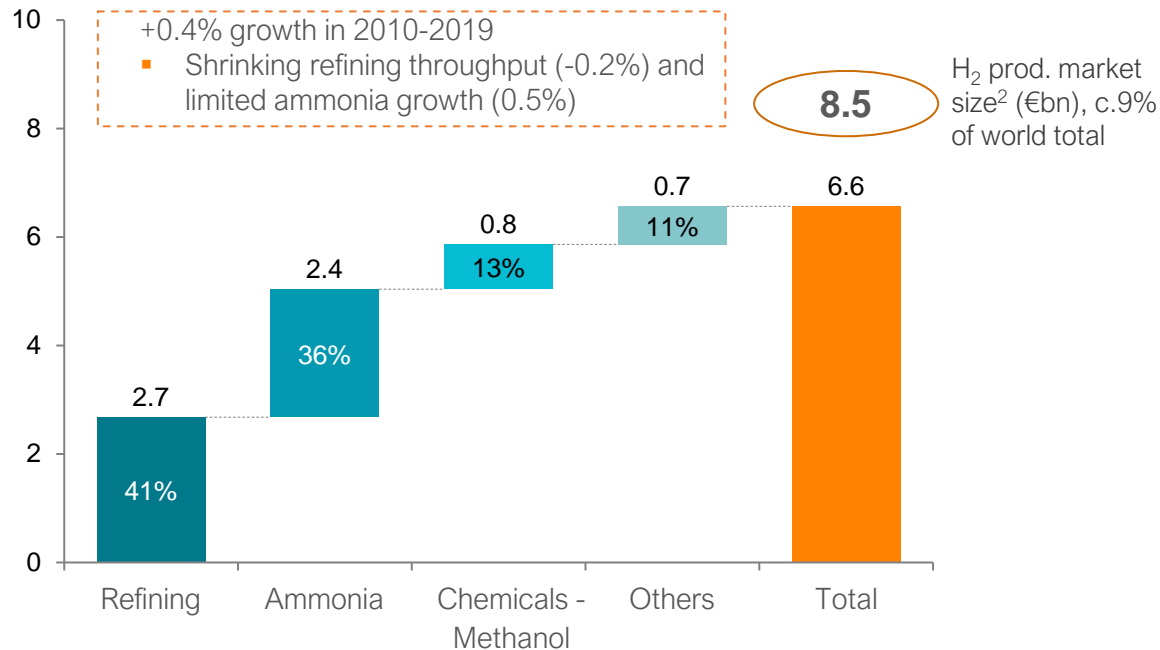
02. Repsol Position

Hydrogen consumption in Europe & Spain



Europe's H₂ market (~6.6 M tons/yr, €8.5 B) represents c.9% of world market and is concentrated on ammonia and refinery uses

Hydrogen demand in Europe, 2020 (M tons/yr)

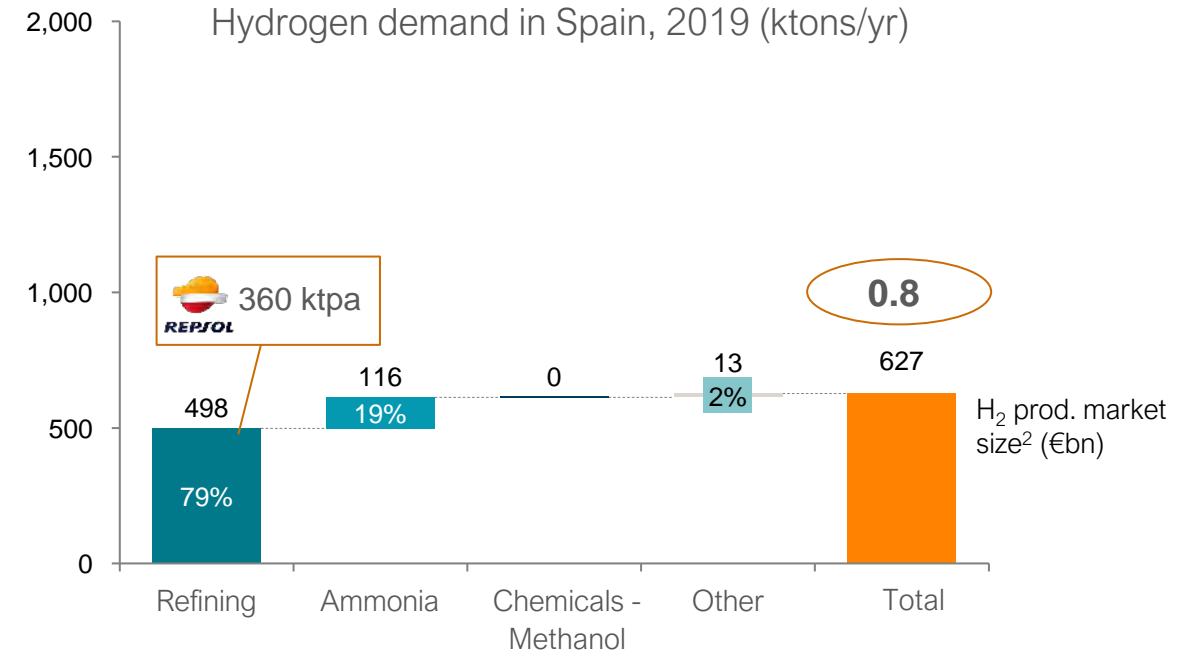


Equivalent electrolyzer capacity (GW): **41** CF¹ 95%, **56** CF 70%, **79** CF 50%



Spain's H₂ market driven by refinery end-use, which accounts for 79% of total demand; market size ~ €0.8 B

Hydrogen demand in Spain, 2019 (ktons/yr)



Equivalent electrolyzer capacity (GW): **3.9** CF 95%, **5.2** CF 70%, **7.3** CF 50%

1. Capacity factor; Electrolyzer efficiency ~65%
 2. Market size estimated with 1.3 €/kg full grey (incl. capex) H₂ production cost (assuming natural gas cost of 20 €/MWh and excluding CO₂ price)
 Source: IEA; Nexant

02. Repsol Position

Present throughout the value chain

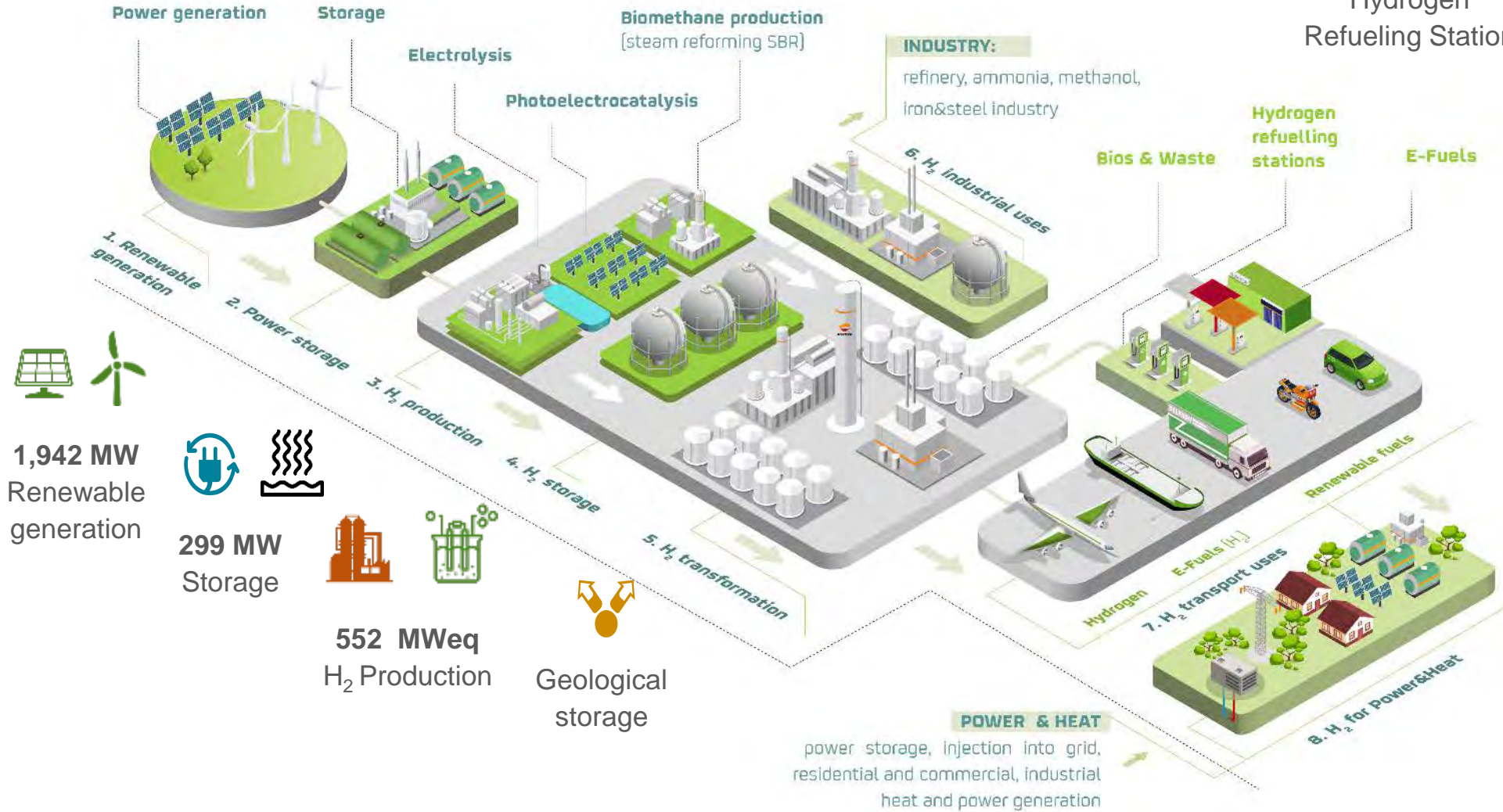


12

Hydrogen Refueling Station



2,7 MM l/year of e-fuels



1. Note: figures as of 2025



The Repsol Commitment
Net Zero Emissions
by 2050



03.

Ambition



The Repsol Commitment
Net Zero Emissions
by 2050

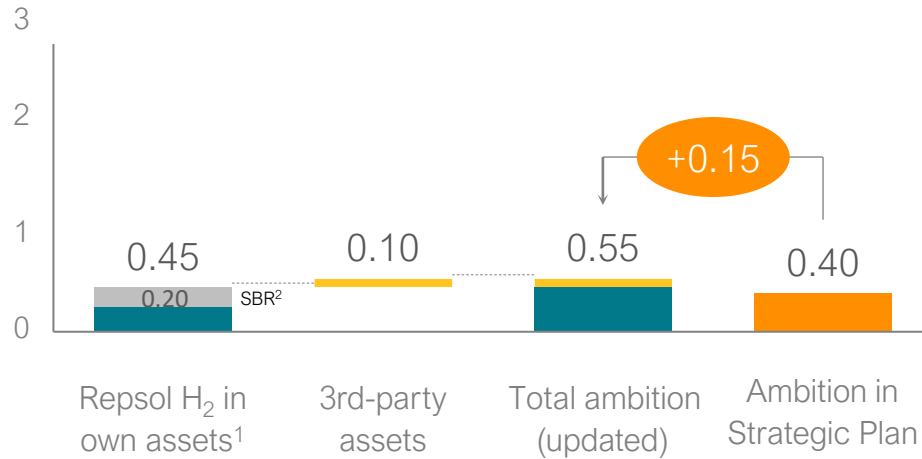


03. Ambition

Current ambition aligned with “Fit for 55” targets

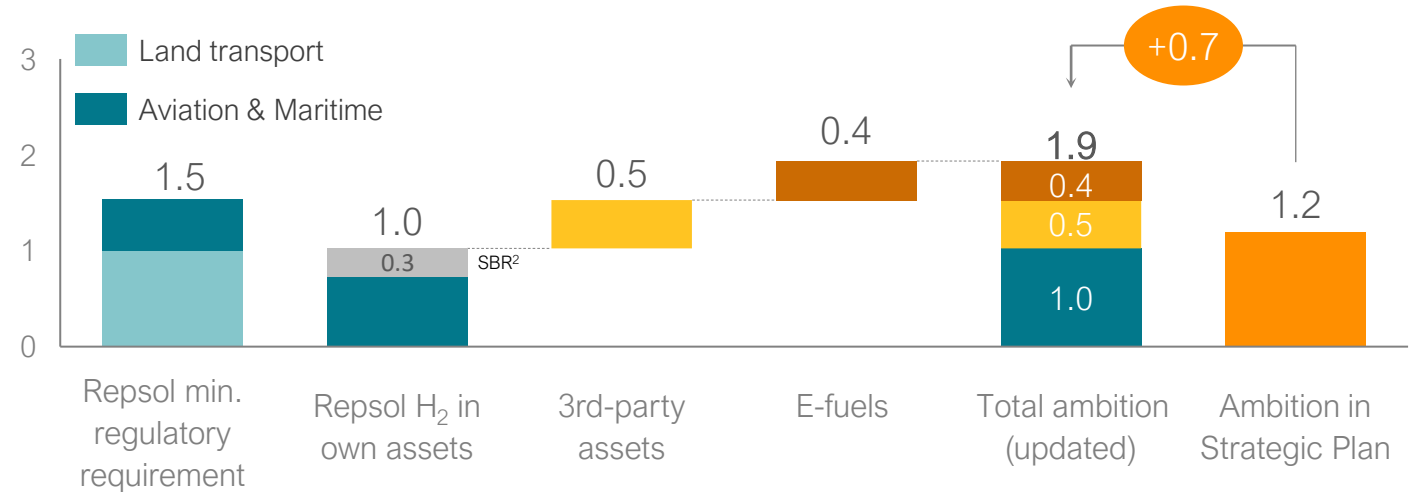
2025 objective

H₂ capacity objective, 2025 (GW)



2030 ambition

Required H₂ capacity vs. ambition, 2030 (GW)



- Deployment of **electrolyzer capacity in own refineries to develop experience and scale**
 - Developing H₂ hubs around own sites
- Participation in **pilots** with 3rd-parties to develop positioning and know-how in new applications

- Fit for 55 proposal strongly support renewable H₂ development in Europe:**
 - Transport:** 2.6% minimum quota of RFNBO³ for all transport modes and minimum quota of 0.7% of e-fuels used in aviation by 2030 (5% by 2035)
 - Industry:** 50% minimum share of renewable H₂ used for final energy and non-energy purposes in industry
- Current **H₂ ambition in own-assets achieves minimum regulatory targets**
- E-fuels plant to strengthen Repsol H₂ position** and increase market share in a highly synergetic long-term business line
- Third party volumes to cover additional industrial needs**

1. Including the e-fuel pilot plant in Petronor
 2. SBR: Steam biomethane Reforming, renewable hydrogen production from biomethane
 3. Renewable Fuel of Non Biological Origin – H₂ and H₂ derivatives (e.g. e-fuels)

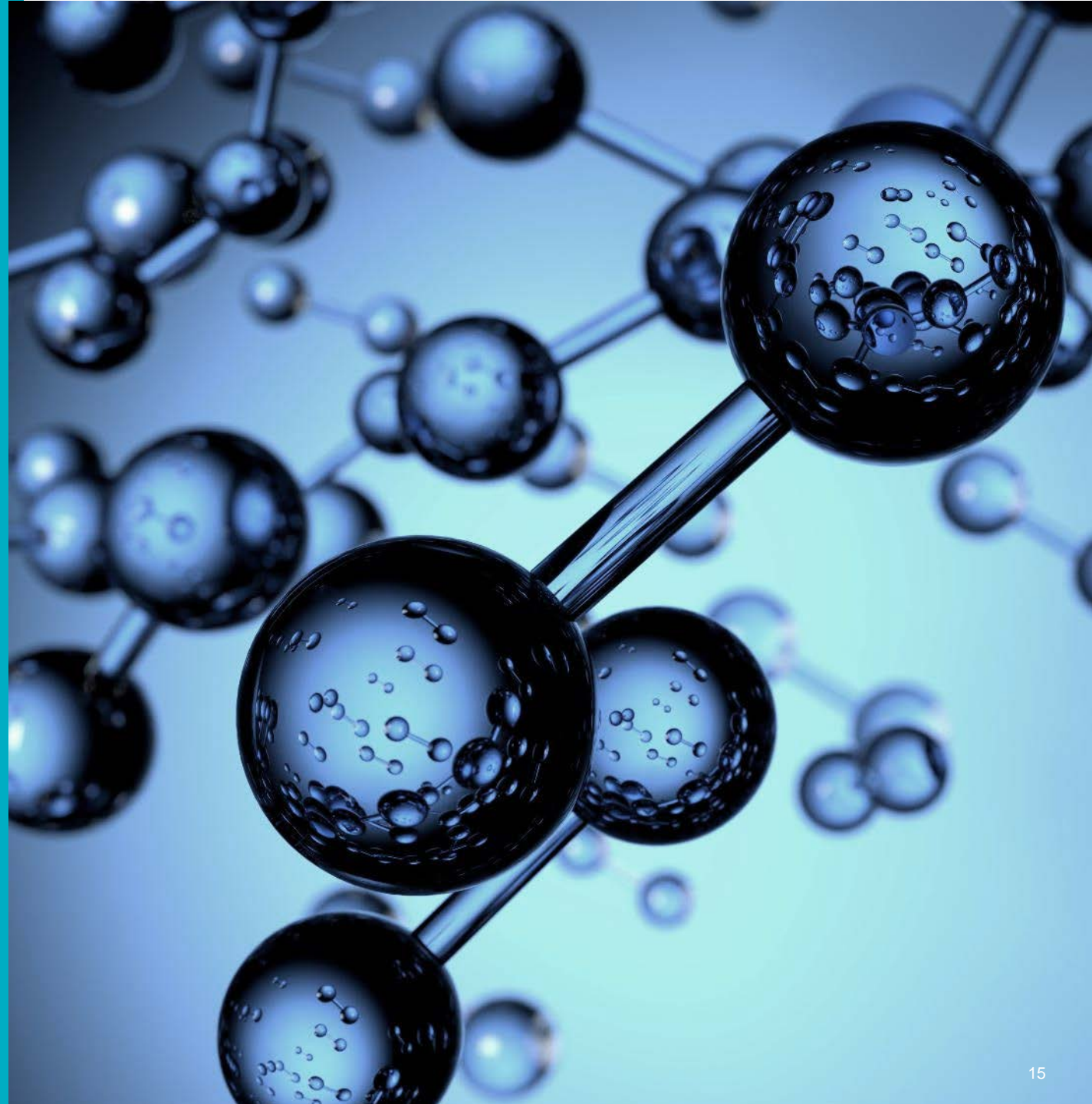


04.

Business roadmap

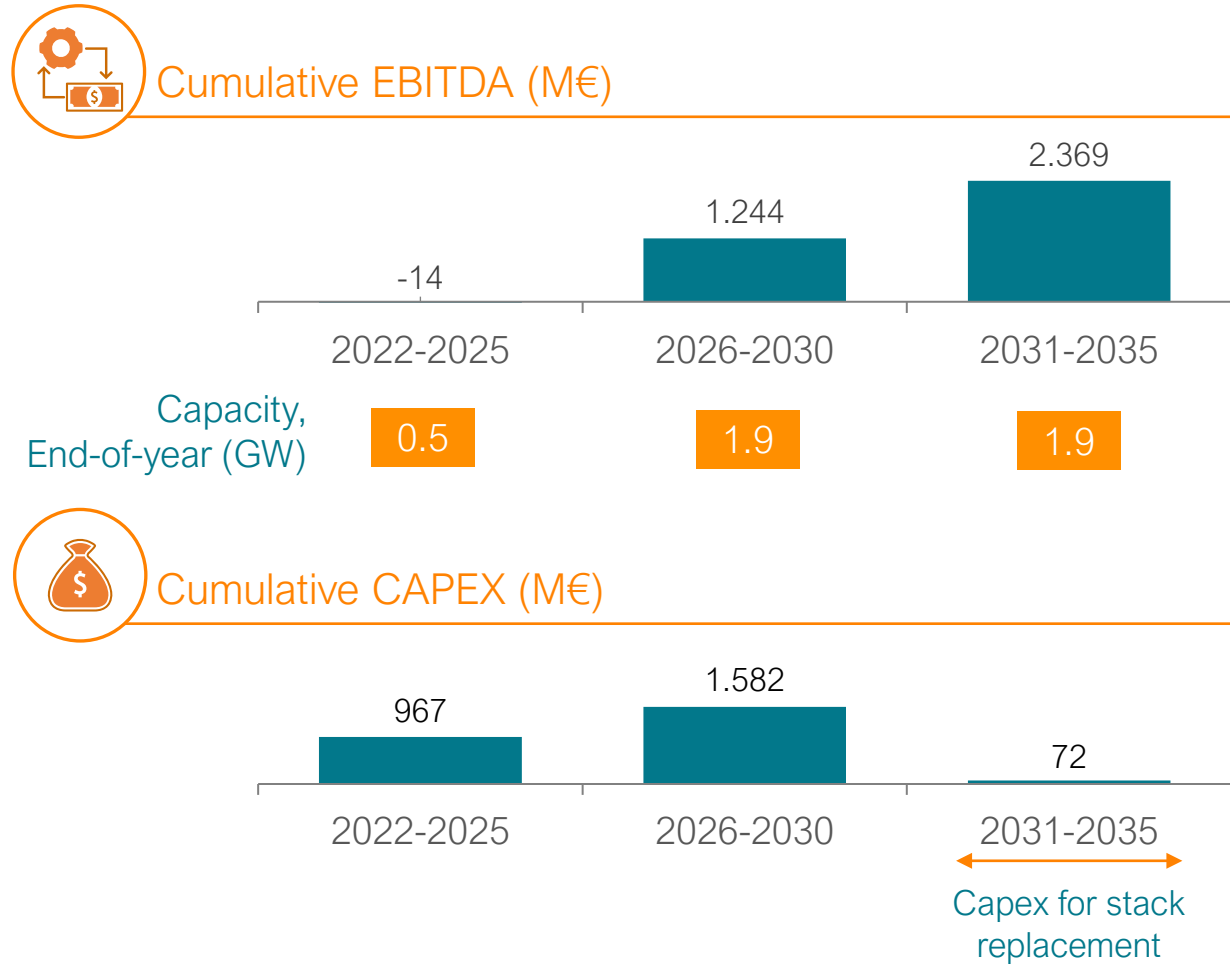


The Repsol Commitment
Net Zero Emissions
by 2050



04. Business roadmap

Key financial metrics



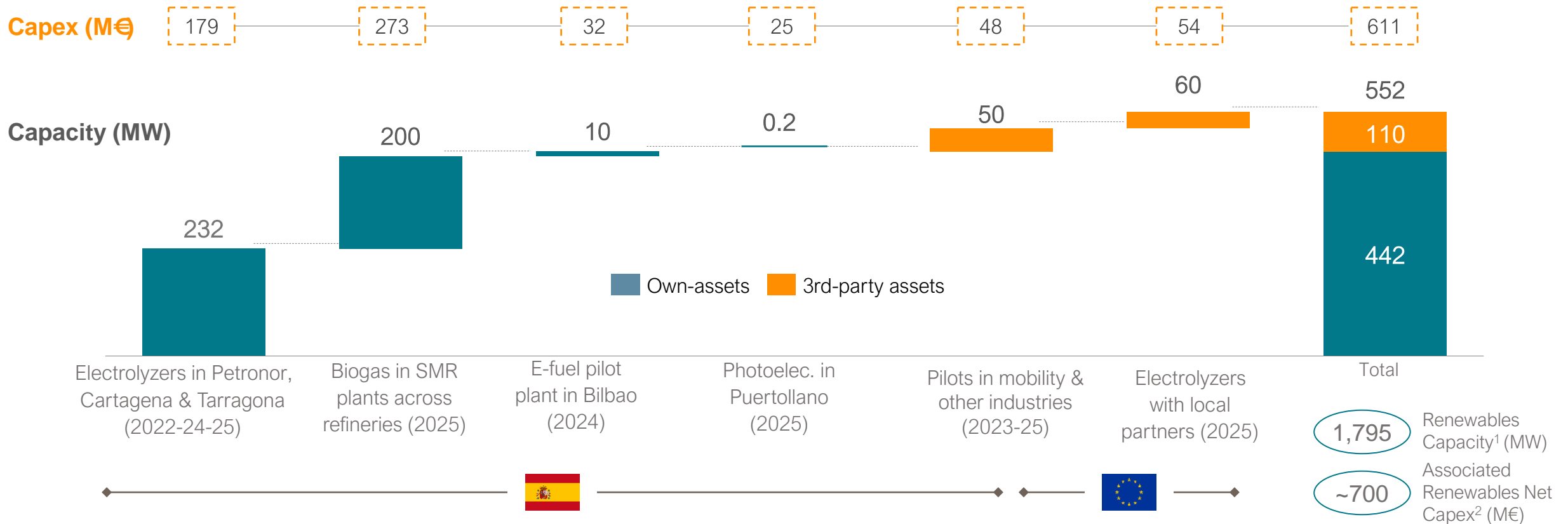
Note: Considers 20 years lifetime for each project since commissioning, and no terminal value; does not include overhead costs; H₂ price estimated as cost of grey H₂ production alternative (steam reforming) + CO₂ cost + RED II green premium; e-fuel price estimated as diesel price alternative (including hydrocarbon taxes) + RED II green premium; amortization for projects with commissioning date before 2027 of 5 years, for other projects of 20 years; PPAs established before 2027 with high cost (+22€/MWh compared to the base cost of the PPAs signed afterwards)



The Repsol Commitment
Net Zero Emissions
by 2050

04. Business roadmap

Pipeline of projects up to 2025



1. Assumes sizing of 3.25 MW renewable generation capacity per MW of electrolyzer (70% of Renewables power generation is dedicated H2 production, with the rest fed to the grid); Gross capacity assumes 100% of renewables development in projects in which Repsol's stake is >=50%.

2. Renewables Capex assumptions: 2022-2025-> Solar: 595 €/kW Wind: 920€/kw.

Note 1: Capacities assume a 95% capacity factor;

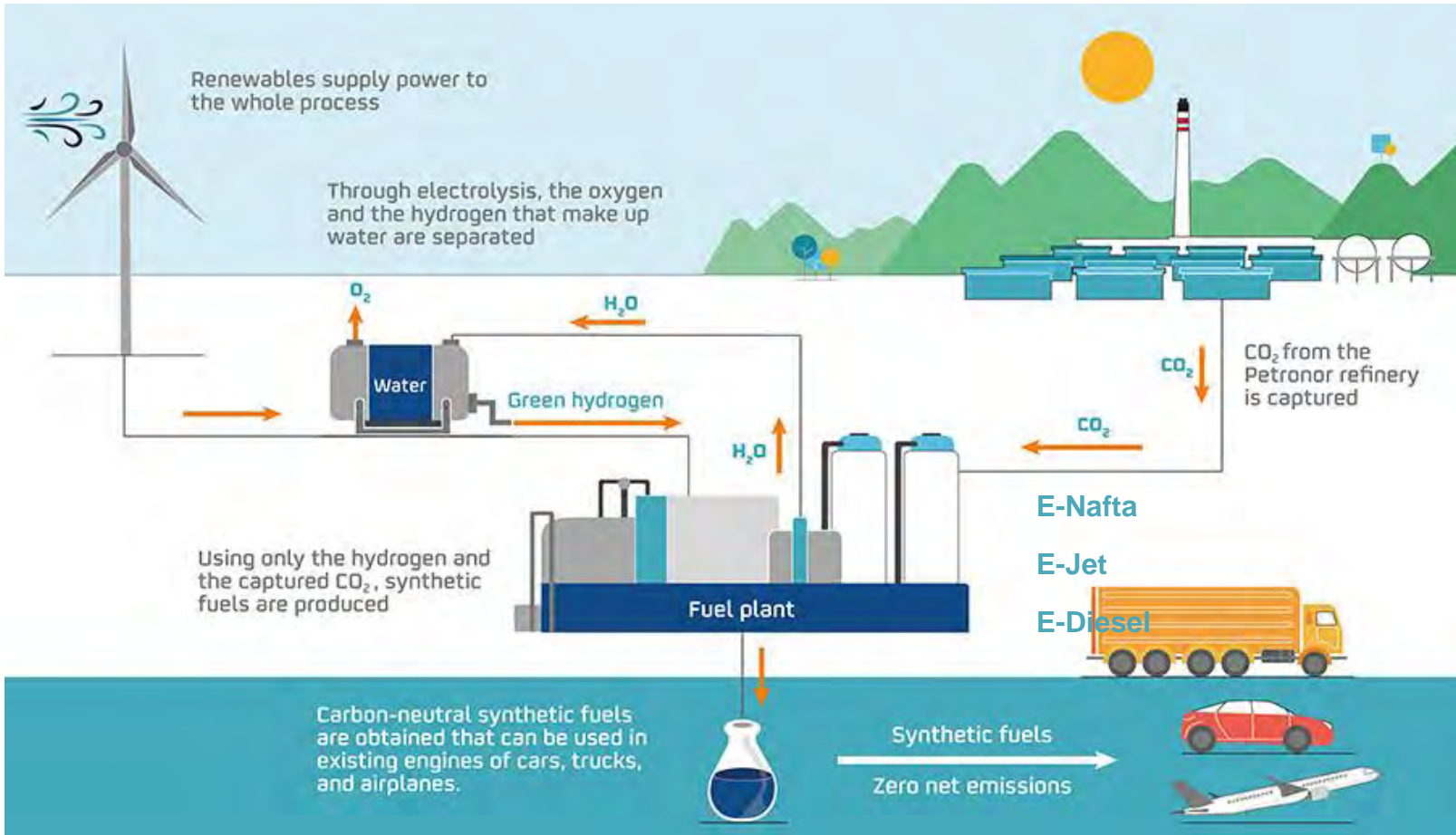
Note 2: Equity share between 50% and 100% in projects deployed in Repsol refineries before 2025. Equity share for projects deployed in third-party assets in Spain of 50%. Equity share for international projects of 30%;



04. Business roadmap

Production of e-fuels in Petronor

Development of worldwide reference plant to achieve commercial level and leading position in production of synthetic fuels



Investments:

Wind generation,
electrolysis, e-fuels plant:
€74 M

Production: 50 bbl/d

Partners



ENERGIAREN
EUSKAL
ERAKUNDEA



ENTE VASCO
DE LA
ENERGÍA

أرامكو السعودية
saudi aramco

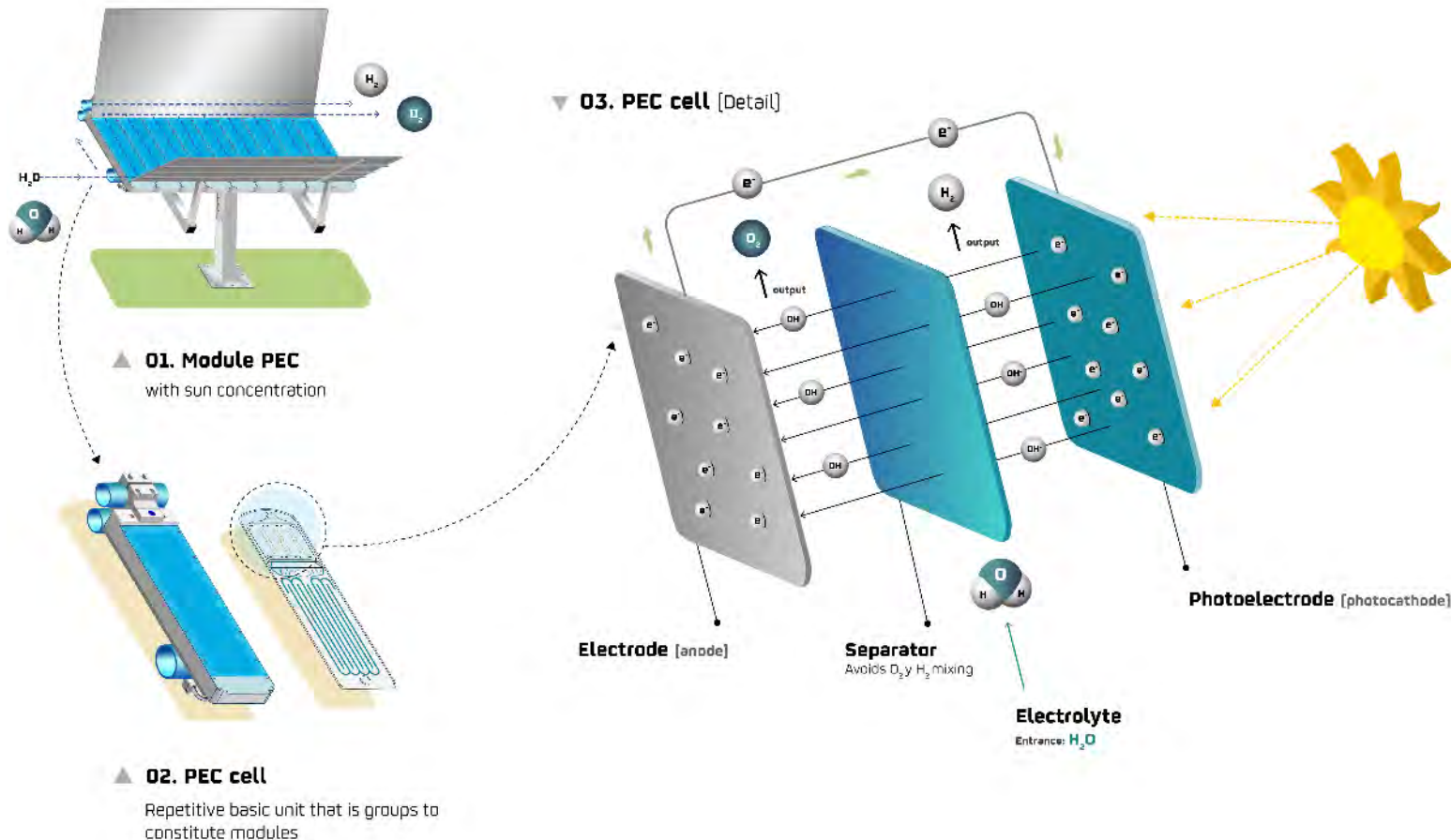


The Repsol Commitment
Net Zero Emissions
by 2050

04. Business roadmap

SUNRGYZE – Renewable H₂ production technology

Repsol - Enagas partnership: technological development of disruptive and photo-electrocatalytic process for production of cost-competitive renewable hydrogen



- 100% renewable
- 100% CO₂ reduction vs conventional hydrogen.
- Based on the **direct conversion of solar energy** into chemical energy
- Collaboration with different public and private entities



- Co-funded by European Regional Development Funds (**FEDER**) and EU Innovation Fund



The Repsol Commitment
Net Zero Emissions
by 2050

04. Business roadmap

Spanish Hydrogen Network (SHYNE) Project

Repsol with great strengths to be the backbone of the Renewable Hydrogen roadmap and its sectoral integration, together with growing demand for H₂ in the coming years, and the role played by the European Funds, will lead Spanish national project.

1

Repsol's objective is to **develop a national project** for the deployment of the renewable hydrogen vector, supported by public-private collaboration, which will take the form of the creation/boosting of:

- **3 hydrogen valleys** where they will develop specific renewable H₂ production projects and end uses in industry and transport, in addition to renewable Electricity Generation and Storage Projects.
- **2 Transversal Innovation Hubs and 1 Digitalisation and Knowledge Management Hub** with R&D&I and technological development, Knowledge Management and Digitalisation projects that guarantee a sustainable economy based on this energy vector.

Multi-sectoral vision

- Impacts in terms of ecology, job creation, knowledge and technological sovereignty
- Presence in 10 **Autonomous Regions**
- Investment of €3,230 M*

2

Project **aligned with both the EEFF and the Spain Can Plan**, especially with component 9, based on **technological and sectoral diversification and a coherent systemic approach**

3

Tractor effect of SMEs, with **40 partners** involved in the project and will be conveyed through **two relationship models**, strategic agreements and declarations of interest, to **facilitate the governance** of the project and **unify interests** of entities from different sectors and along the value chain.

* Total CAPEX. Repsol's CAPEX is approximately 2,250 M€



Low Carbon Day

Investor Relations
investor.relations@repsol.com

#RepsolLowCarbonDay
www.repsol.com



The Repsol Commitment
Net Zero Emissions
by 2050





Low Carbon Day

Customer Centric

José Barreiro

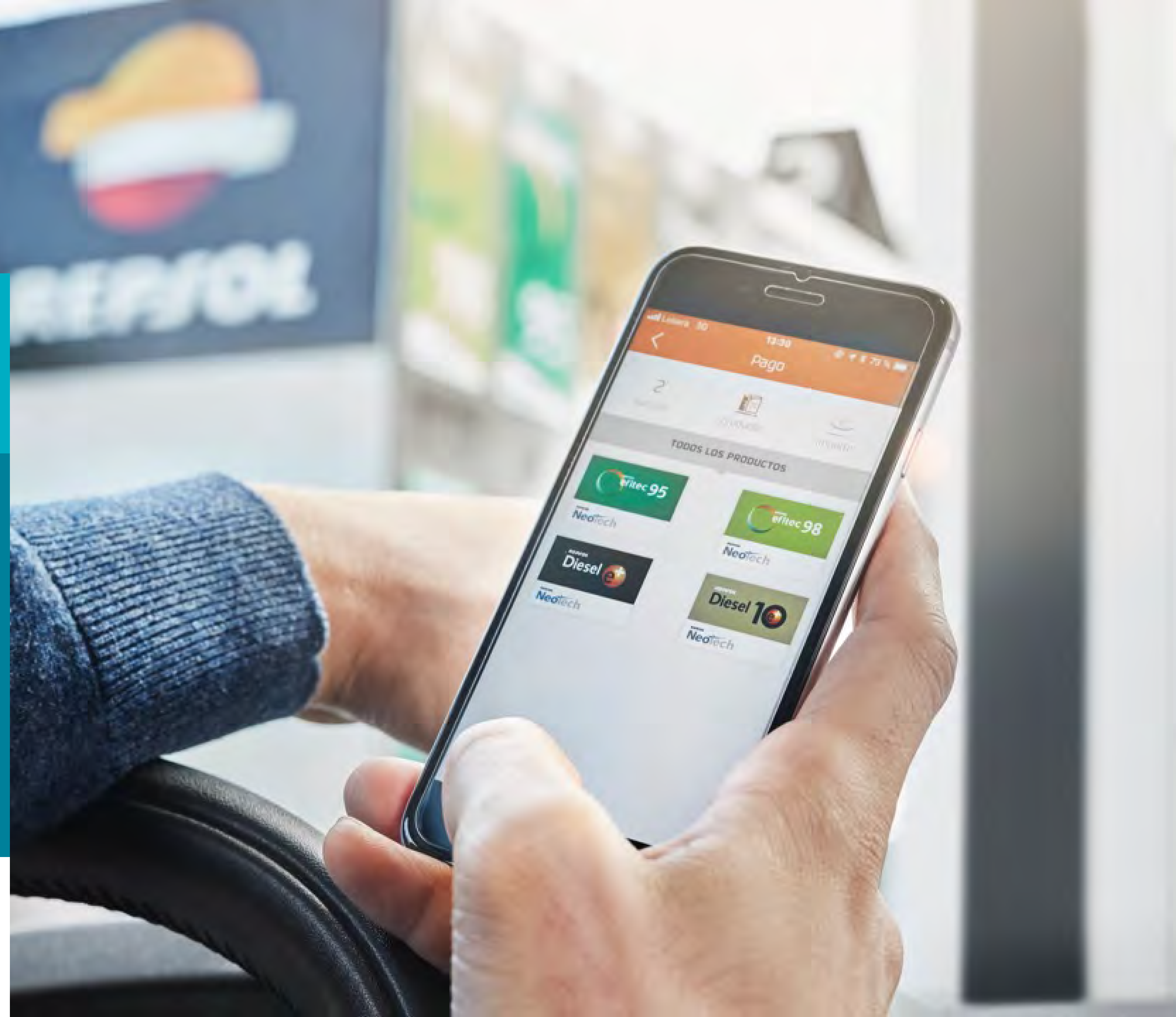
Executive Director of Mobility Iberia

Siridia Berenguer

Director of New Businesses BD



The Repsol Commitment
Net Zero Emissions
by 2050



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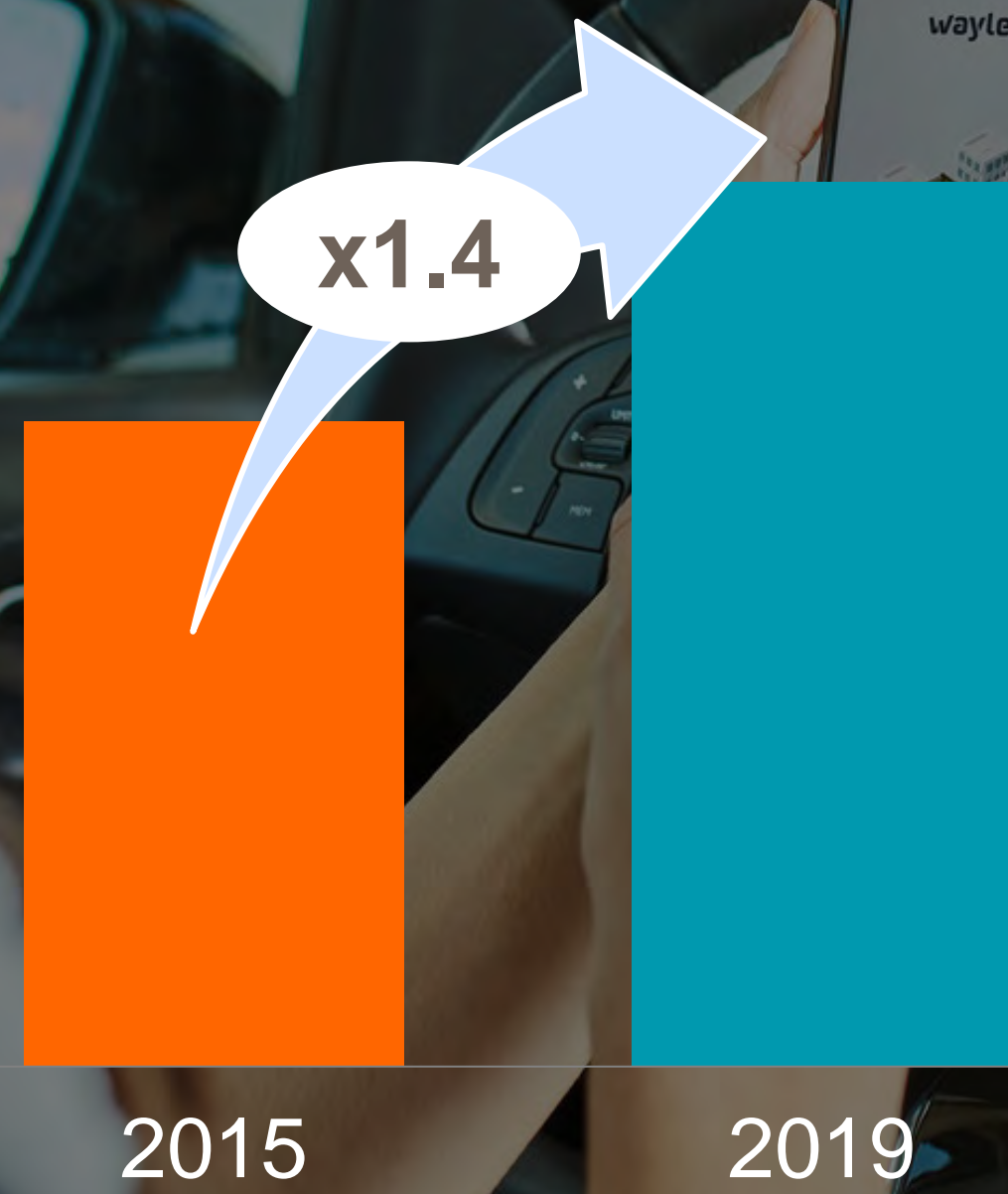
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#RepsolLowCarbonDay

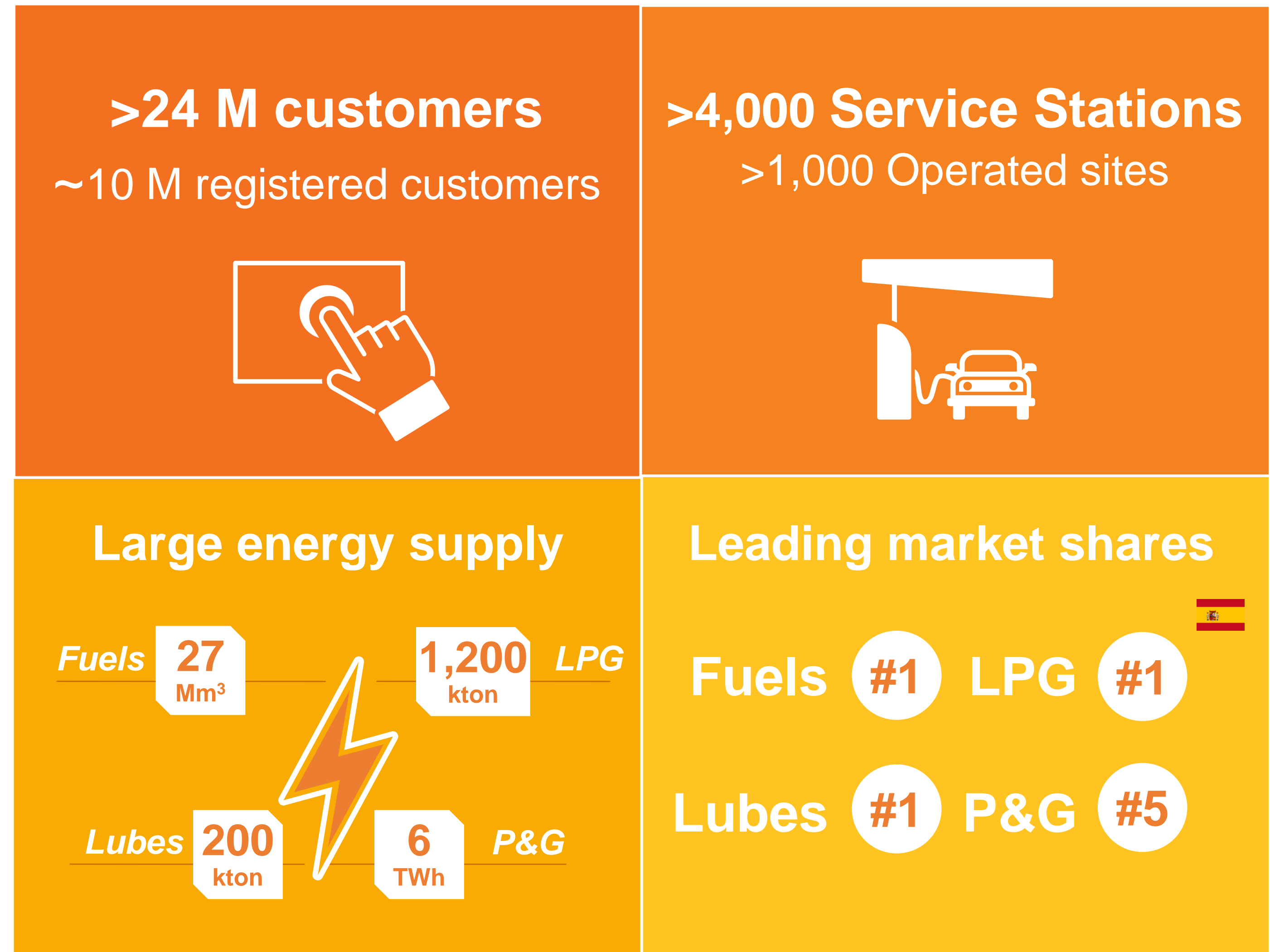


Building on a leadership position with a successful transformation track-record



CCB EBITDA evolution (M€)

01. Customer-centric: Introduction and Business overview



Note: Market shares in volume except for P&G Spain, in customers. Values provided correspond to 2019 (Italy excluded). Operating and financial leases are included as expenses within Financials. (Graph) Growth presented as net growth from 2015 to 2019. Overhead costs not included

01. Customer-centric: Introduction and Business overview

Energy commercial business environment rapidly evolving underpinned by secular trends

Global Trends

Regulatory changes

Decarbonization

Increasing renewables sources & electrification

Fast technology evolution

Alternative (non-exclusive) mobility technologies

Energy is in Transition



Consumption Trends

More environmental & safety concern

Digitalization

Demanding more personalized treatment

Requiring a global vision of their needs

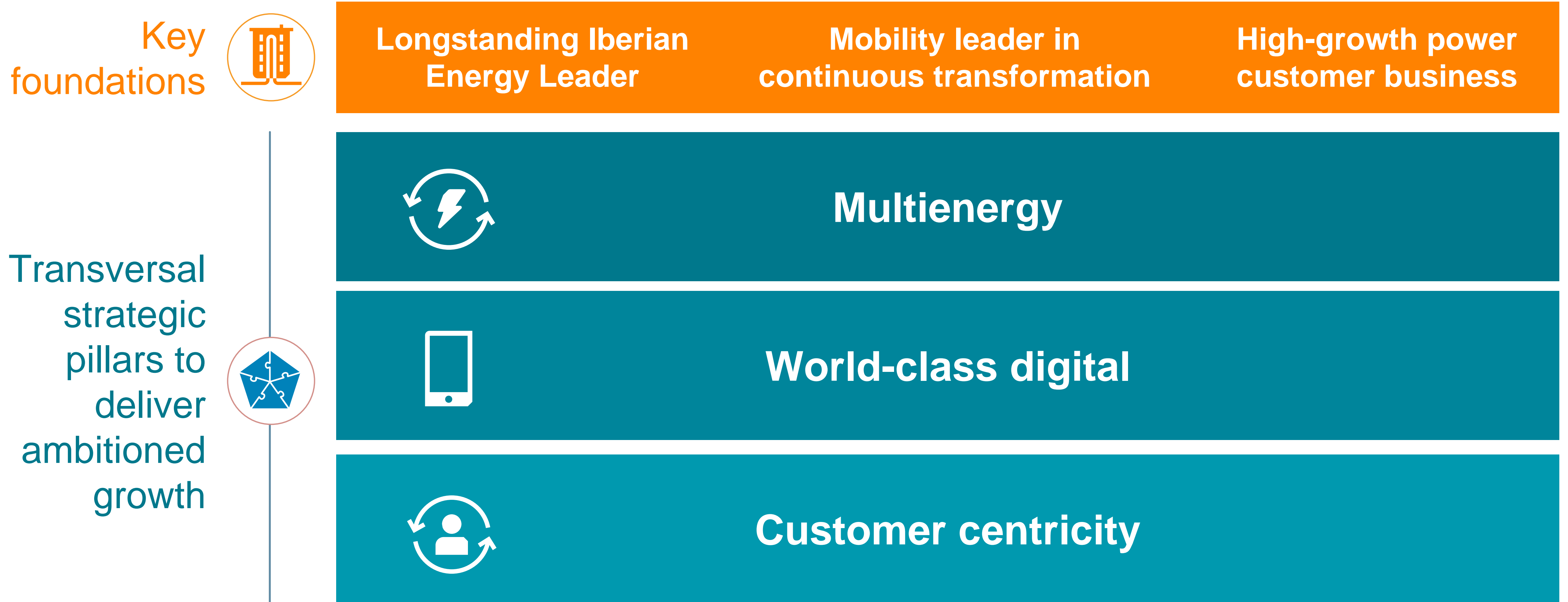
New services and business models

Changes in consumer patterns post COVID

The future is multi-energy, low carbon and customer oriented

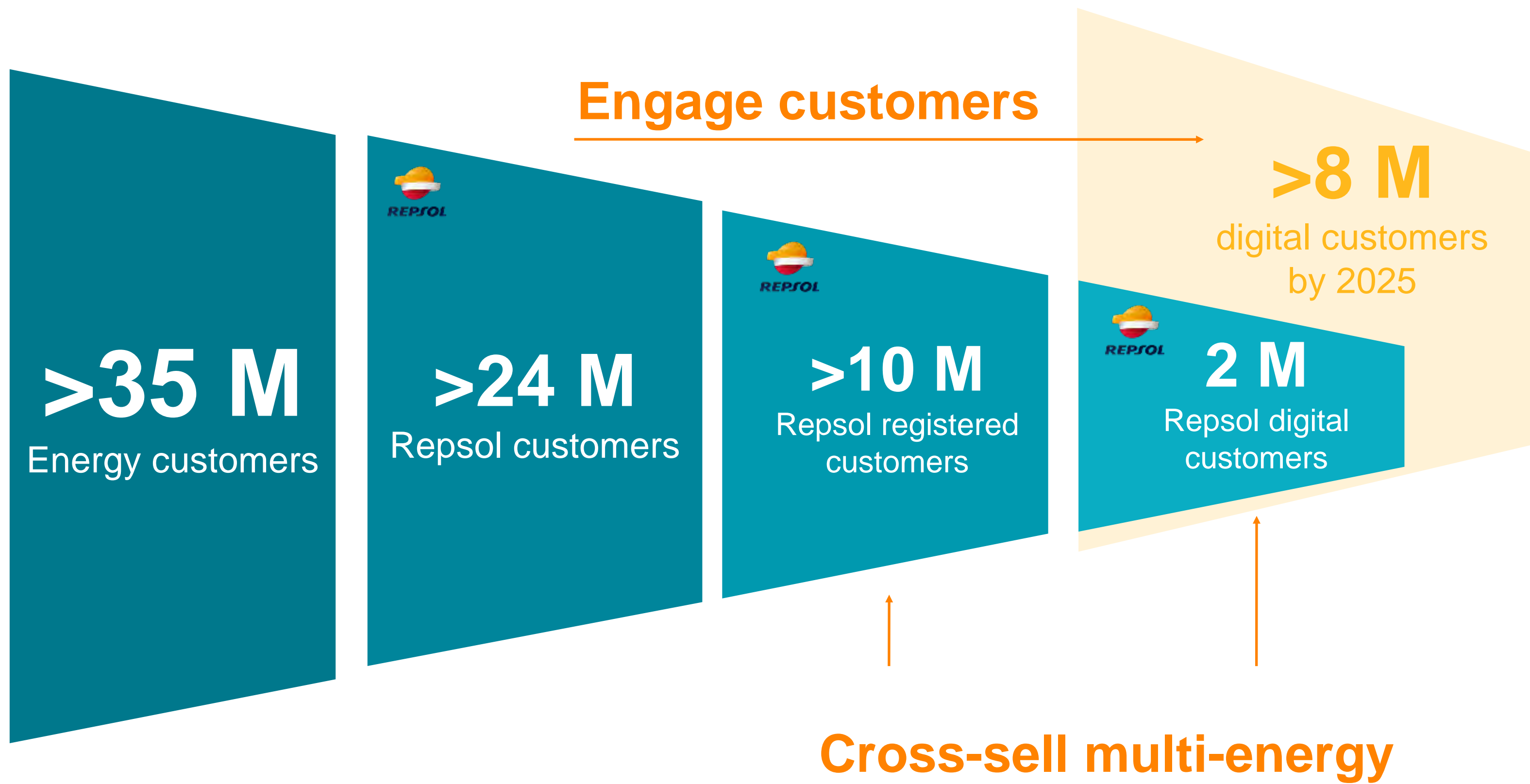
02. Customer-centric: Strategy and pillars

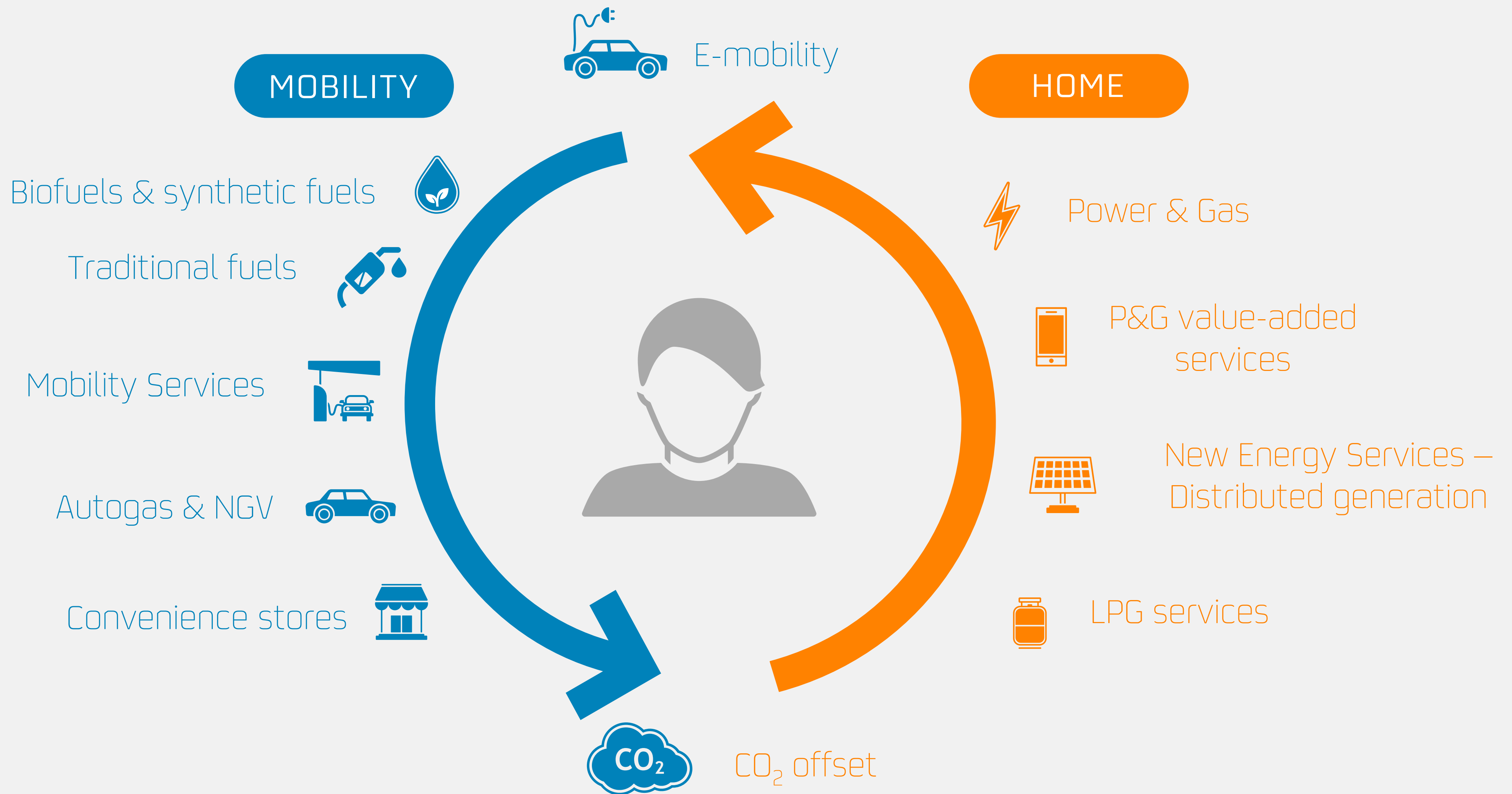
Customer-Centric Business Strategy 2021-25



02. Customer-centric: Strategy and pillars

Digital solutions to orchestrate customer-centric multi-energy approach across customer base





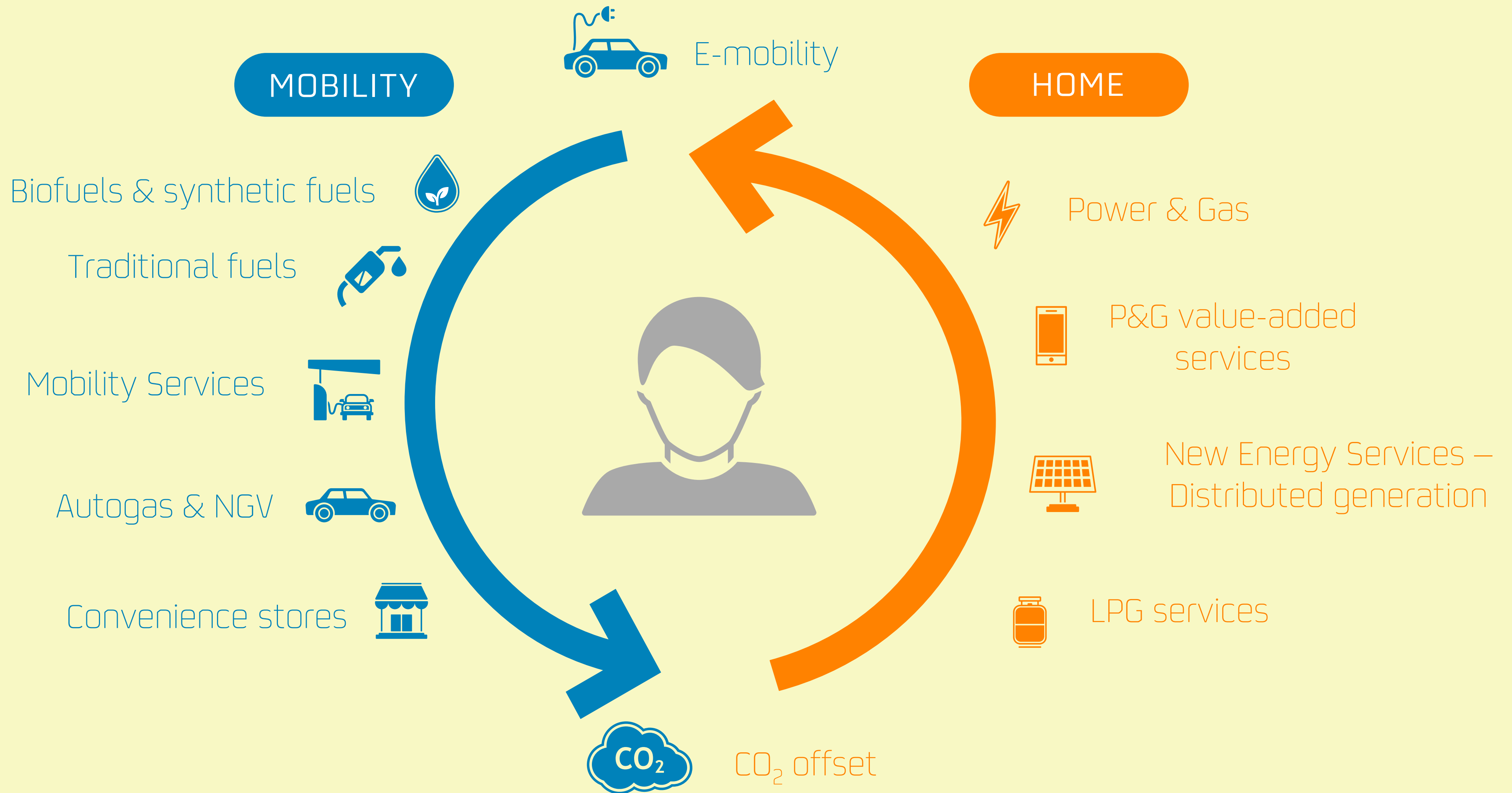
waylet

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Repsol is prepared to
deliver differentiation
and a more holistic
offering





e-Mobility

Repsol e-Mobility **holistic offering** as a key competitive advantage vs competitors

Keeping our current status as the mobility **service provider of choice**



e-Mob
@public
areas



e-Mob
@home



electricity
@home

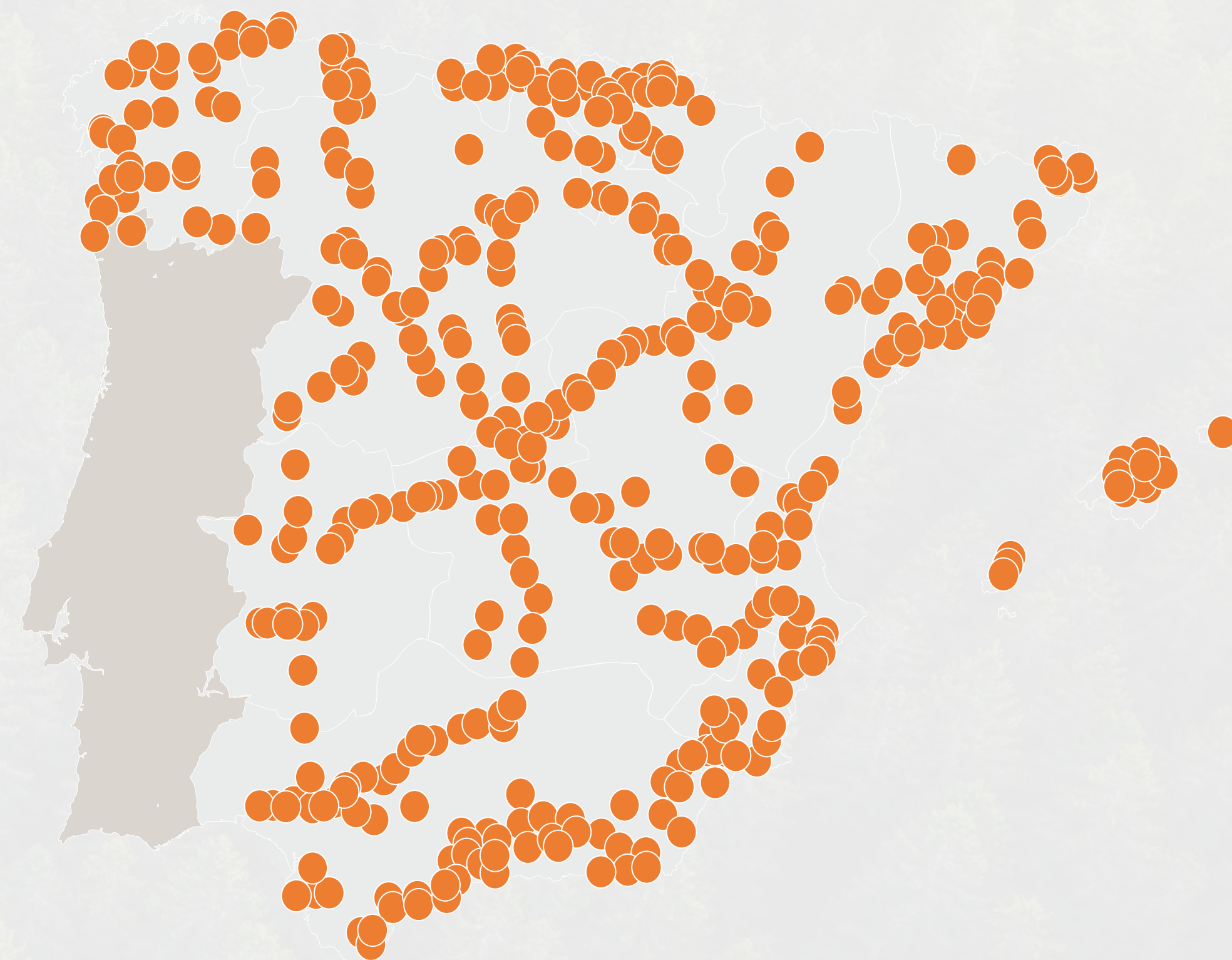
e-Mobility

Repsol is committed to develop a **widespread, smart, conveniently-located** charging network in Iberia focused in **fast and ultrafast** chargers in main transport corridors

2022

Ultra / Fast
chargers every
50km

+1,000
public
chargers

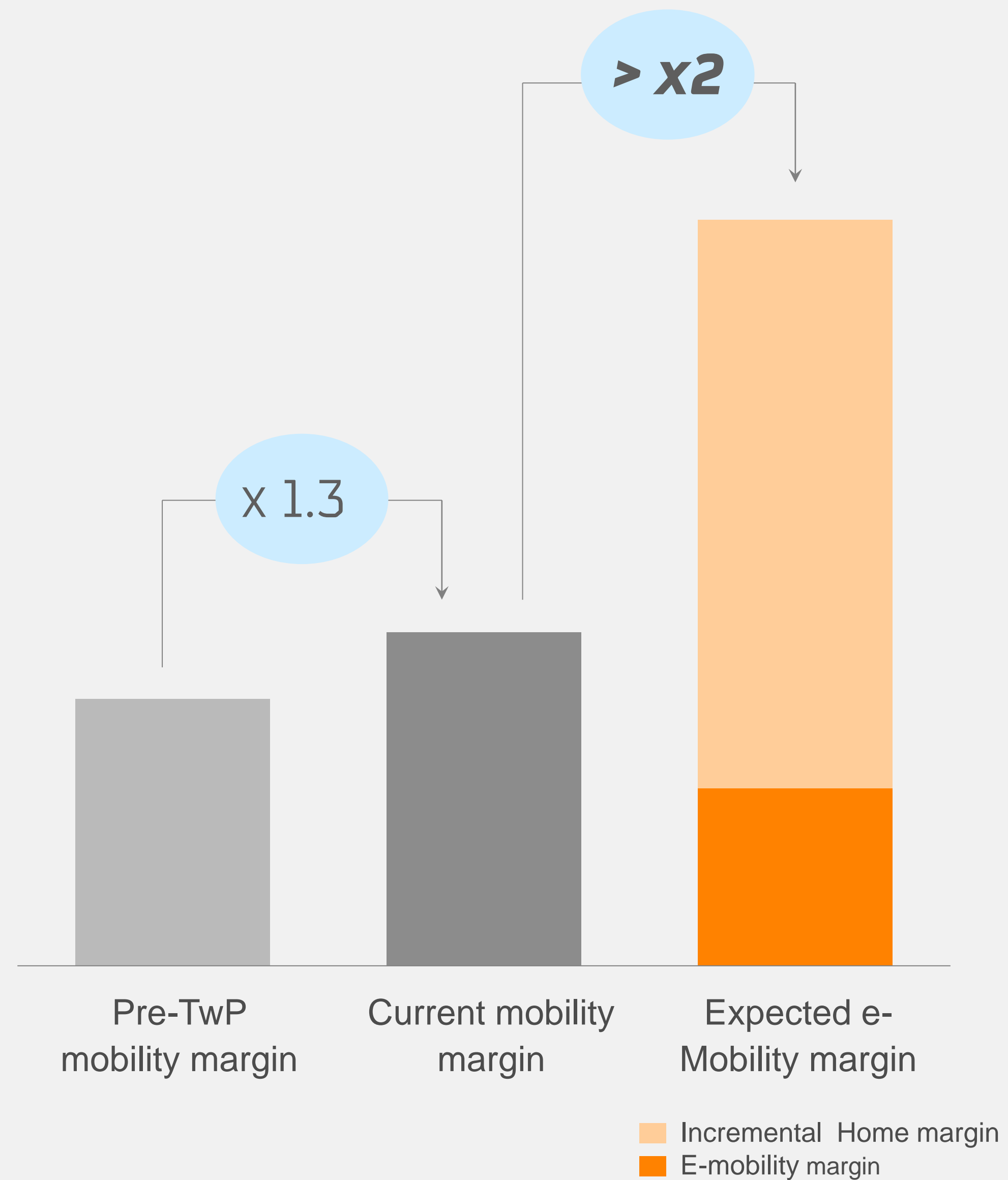


e-Mobility

A **very synergistic** business with attractive economics for Repsol

The economics of E-Mobility & home power consumption are **even more attractive for Repsol** than those of traditional mobility

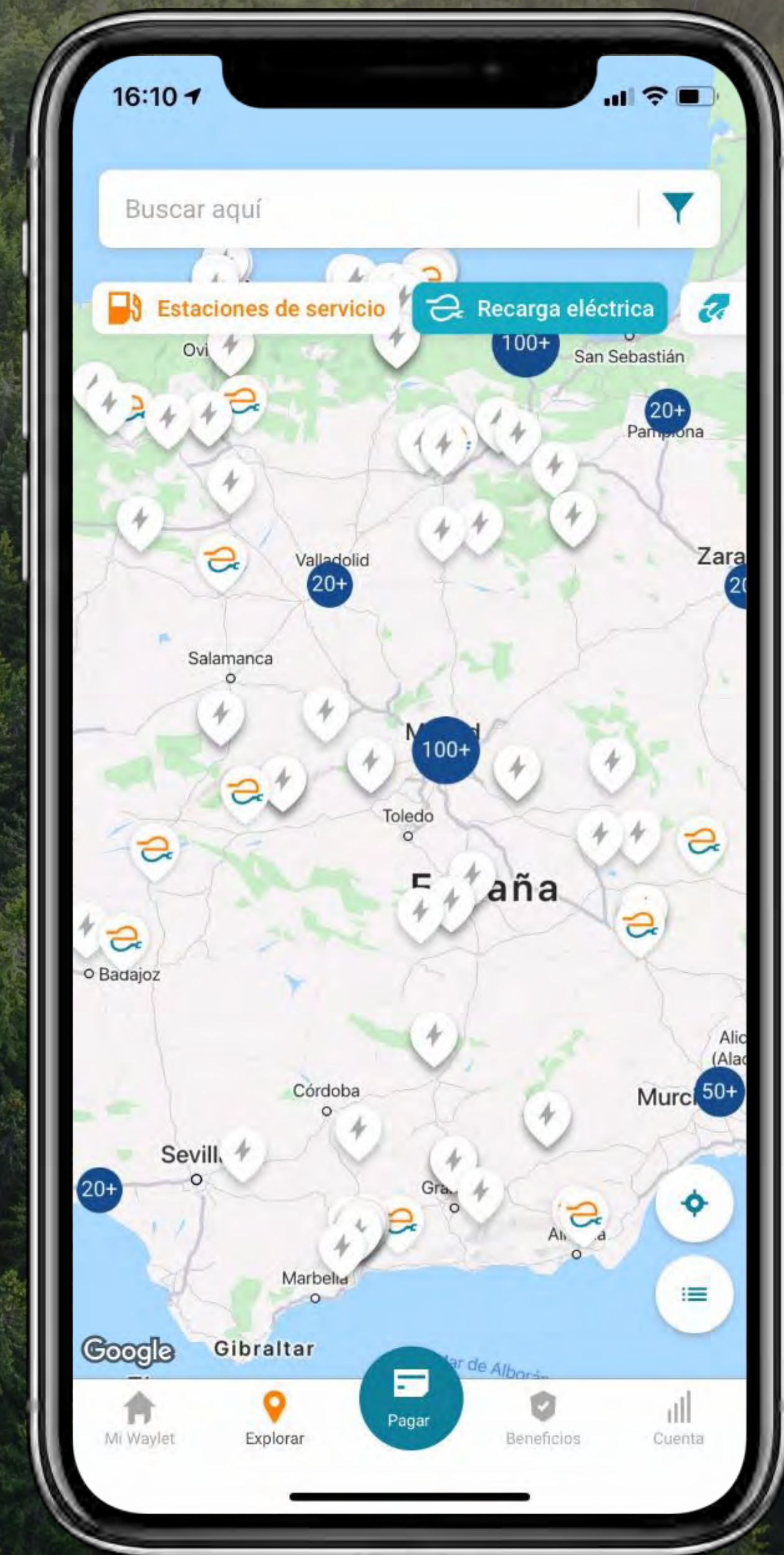
More than double growth in enhancing contribution margin per customer



Contribution margin per customer (€/customer) –
Traditional mobility customers vs. E-mobility customers

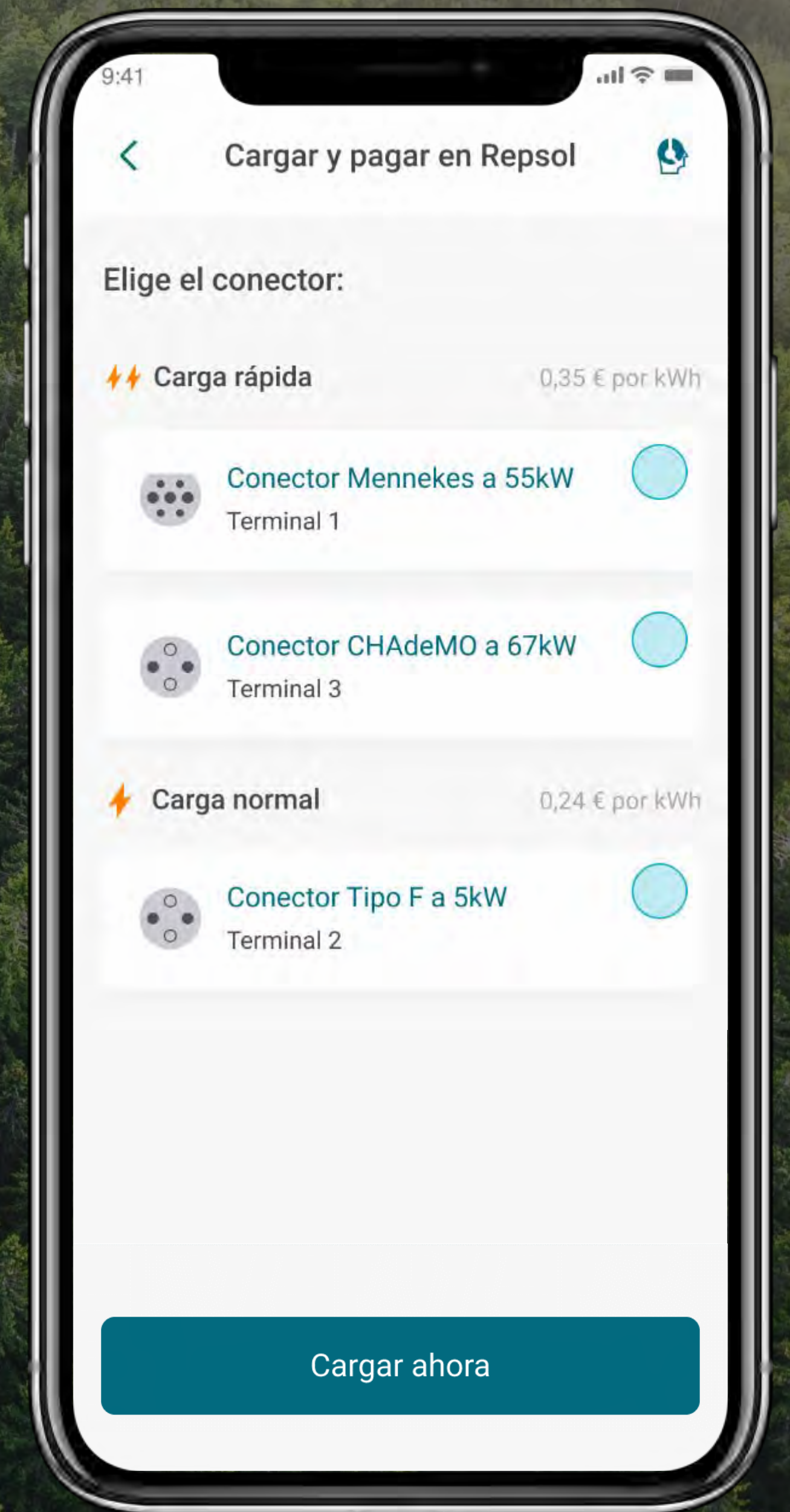
e-Mobility

Integral service at home and on the go with a single digital tool



e-Mobility

Integral service at home and on the go with a single digital tool



e-Mobility

Integral service at home and on the go with a single digital tool



e-Mobility

Integral service at home and on the go with a single digital tool



e-Mobility

Integral service at home and on the go with a single digital tool



Distributed Energy

Developing New Energy Services that allow to deliver customer's changing needs regarding **distributed energy and energy management.**

Distributed Energy

REPSOL
Solify 

Solar **self-consumption**
solution

REPSOL
Solmatch 

Solar **communities**
product

ekiluz

Citizens' solar
cooperatives

REPSOL

Solmatch 

Bringing local and renewable energy producers and consumers together

+2,100 CO2 tons/year avoided by Solmatch's 2021 solar communities



RECENT AWARDS:

Retina
ECO Capgemini 

Green Generation category

DEC

Innovation & Customer Experience category

 enerTIC Awards

Renewable Energy Category

Distributed Energy

2024

+300

Solar installations
in Repsol Service
Stations

+180

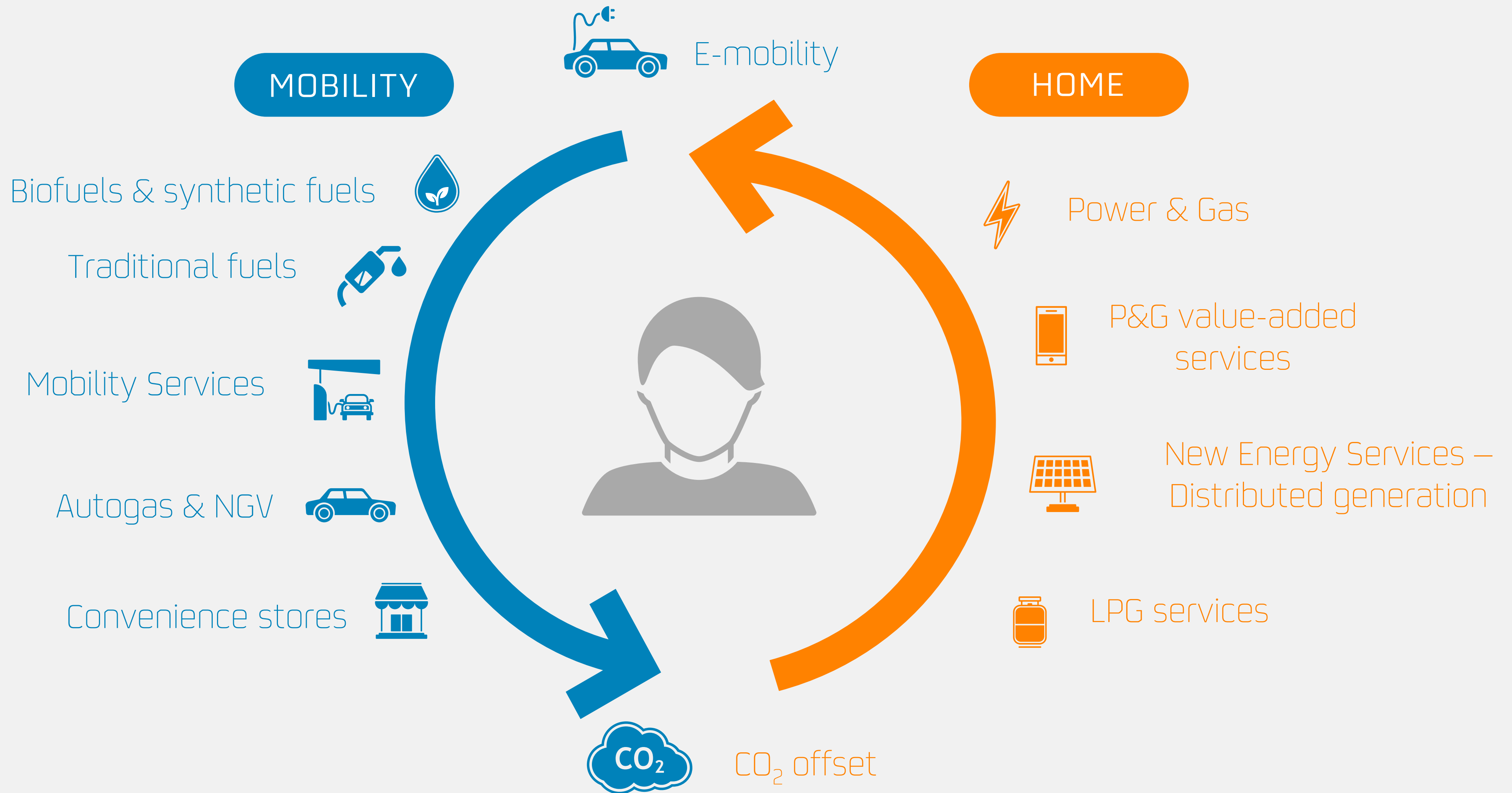
Solmatch
active solar
communities

50

Solar
cooperatives
under negotiation

Unique and integrated
digital experience to
facilitate the
customer's relationship
with energy









Waylet

Payment and loyalty app for mobility management

#1

Leading market share transport service Apps

3 M

Users in December 2021

+1.6 M

Transactions per month

+7 p.p.

Additional sales uplift in campaigns

2.1x

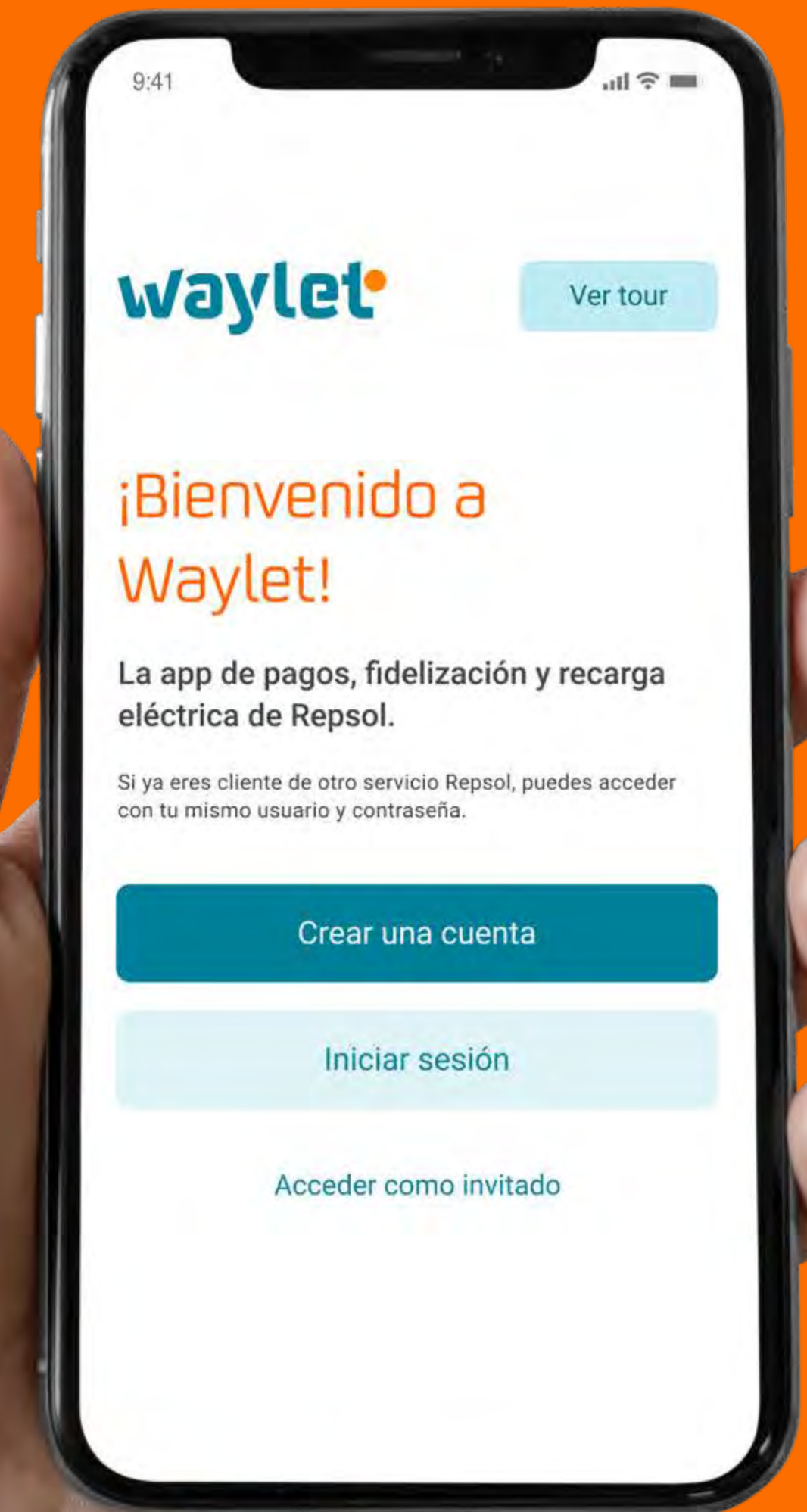
Volume sales per customer



HIT RATE



CHURN





Pay at the pump



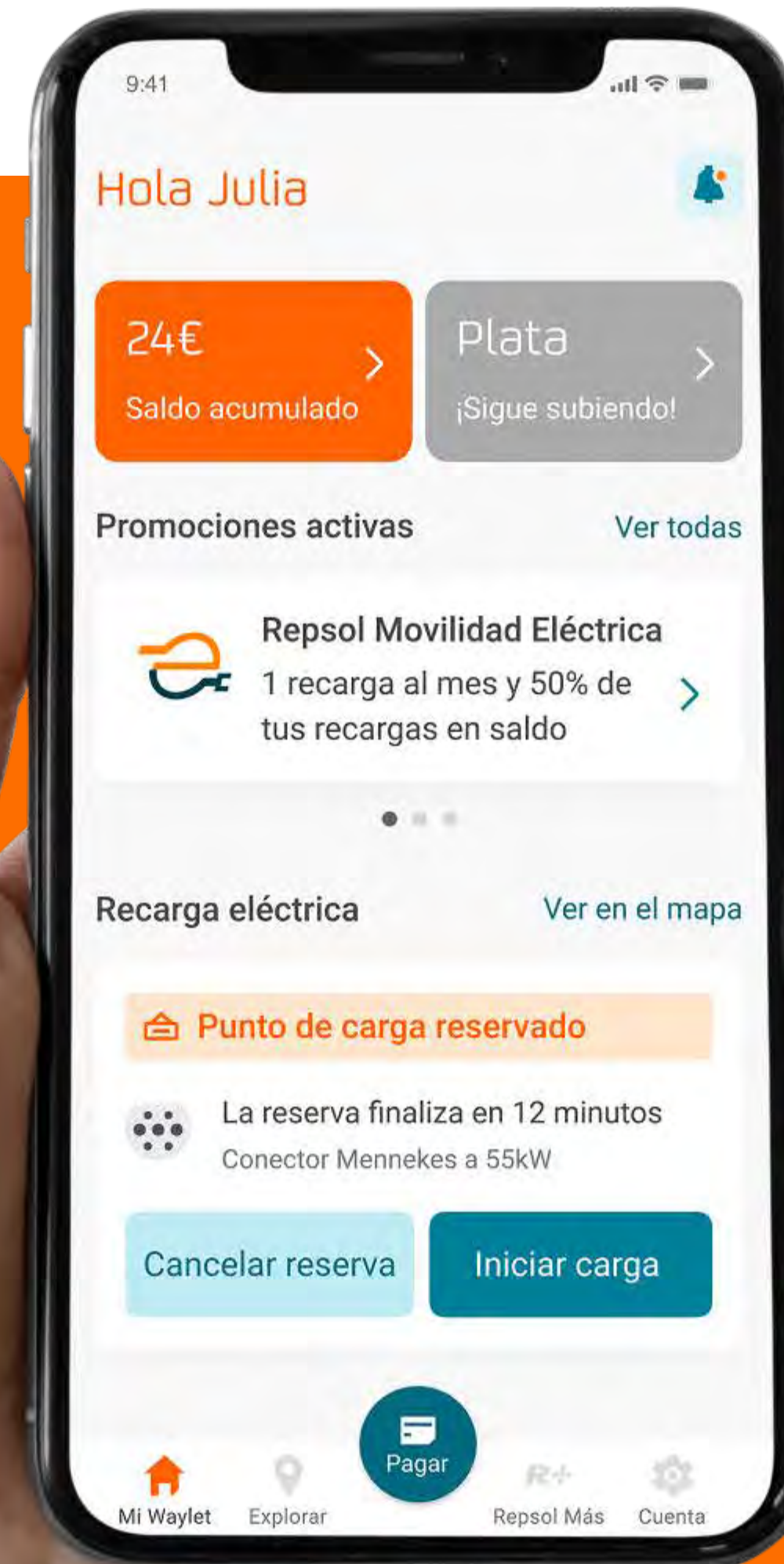
CO₂ Offset



Pre-order Convenience stores
Pick up - Delivery



Way&Go
buy in-store without cash



E-Mobility charging management



Parkings



Loyalty program



Payment and discounts in strategic partners

Pay at the pump



CO₂ Offset



Pre-order Convenience stores
Pick up - Delivery



Way&Go
buy in-store without cash



E-Mobility charging management



Parkings



Loyalty program



Payment and discounts in strategic partners

Pay at the pump



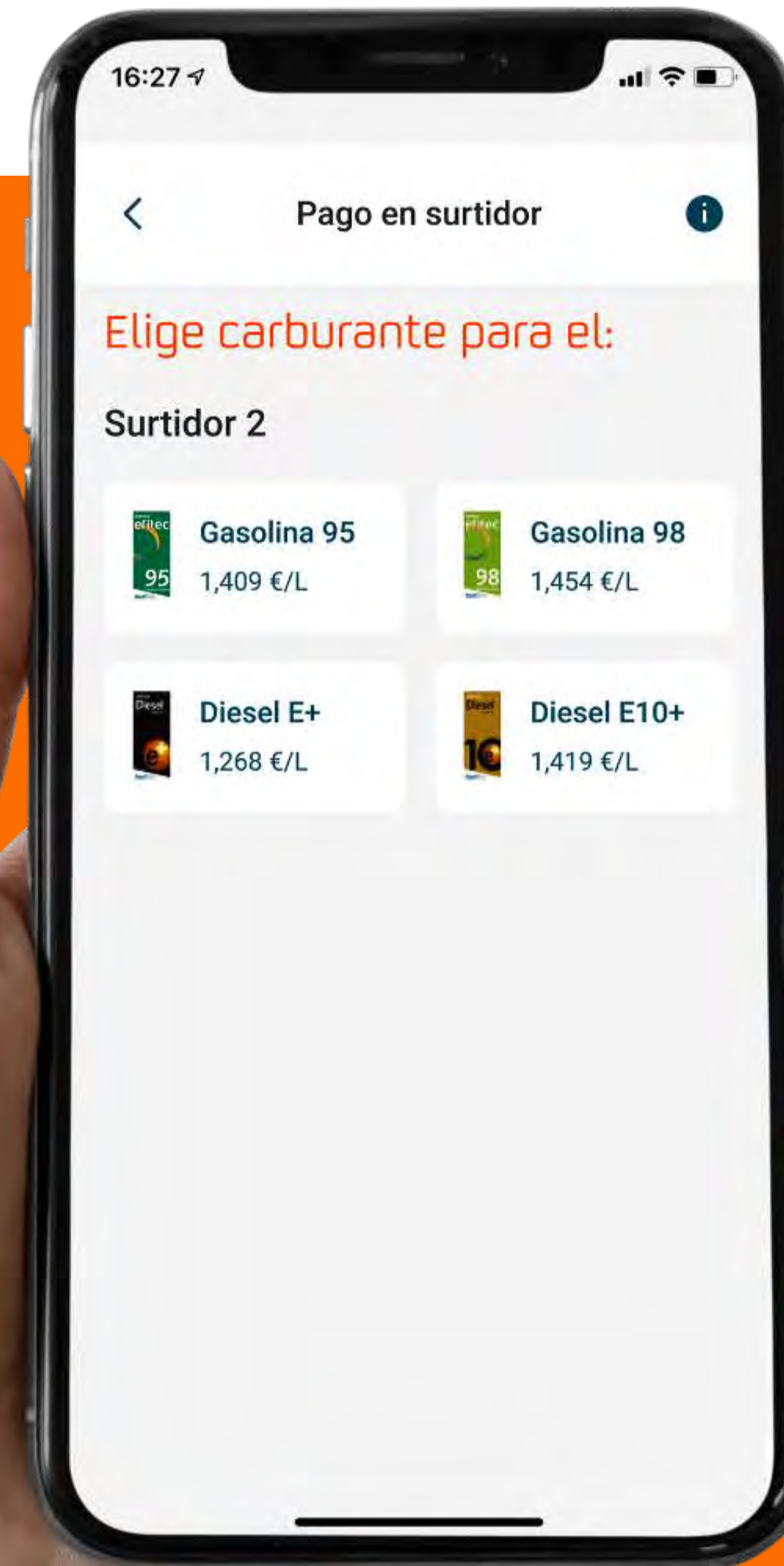
CO₂ Offset



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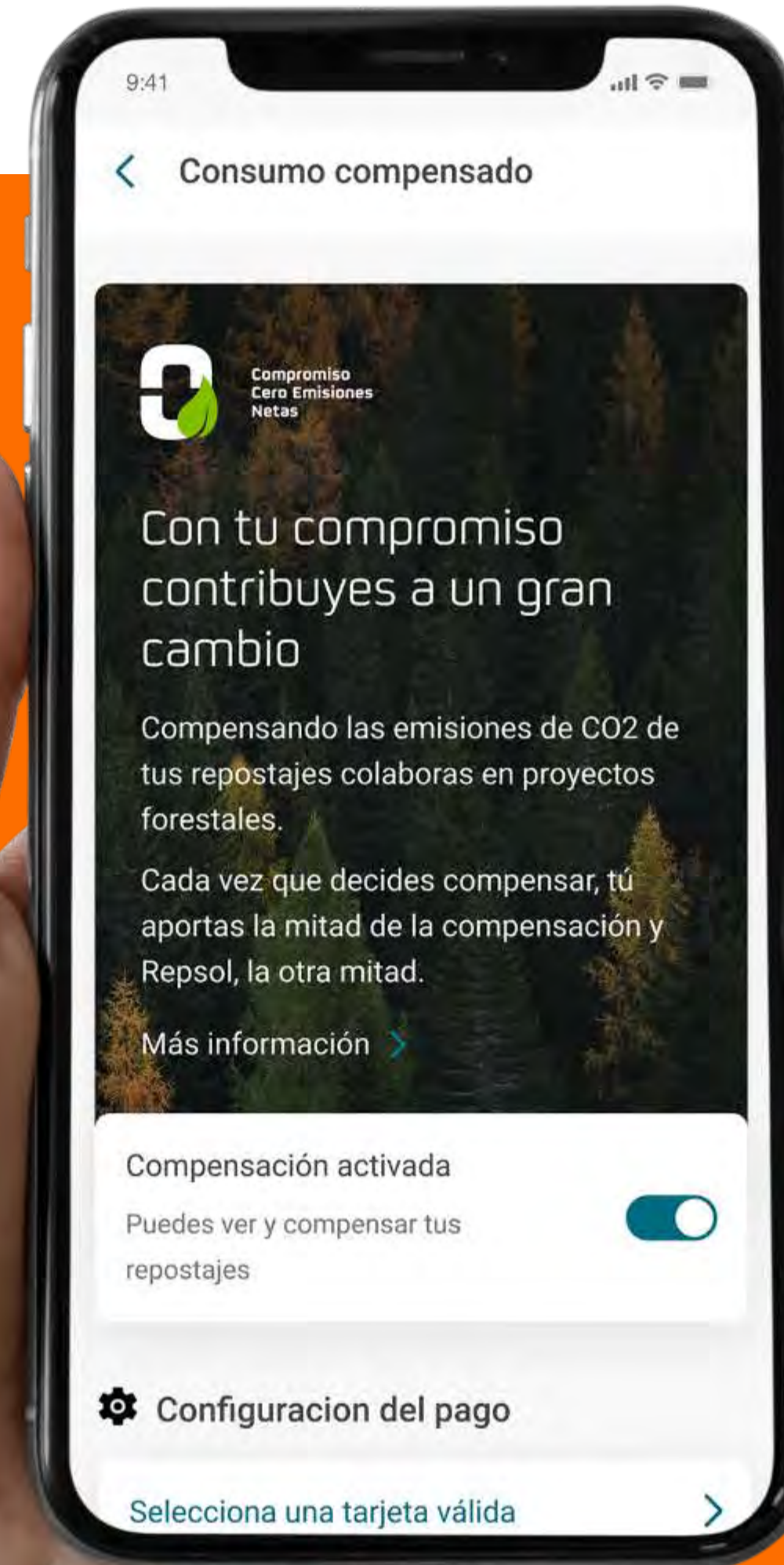
CO₂ Offset



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Payment and discounts in strategic partners



Pay at the pump



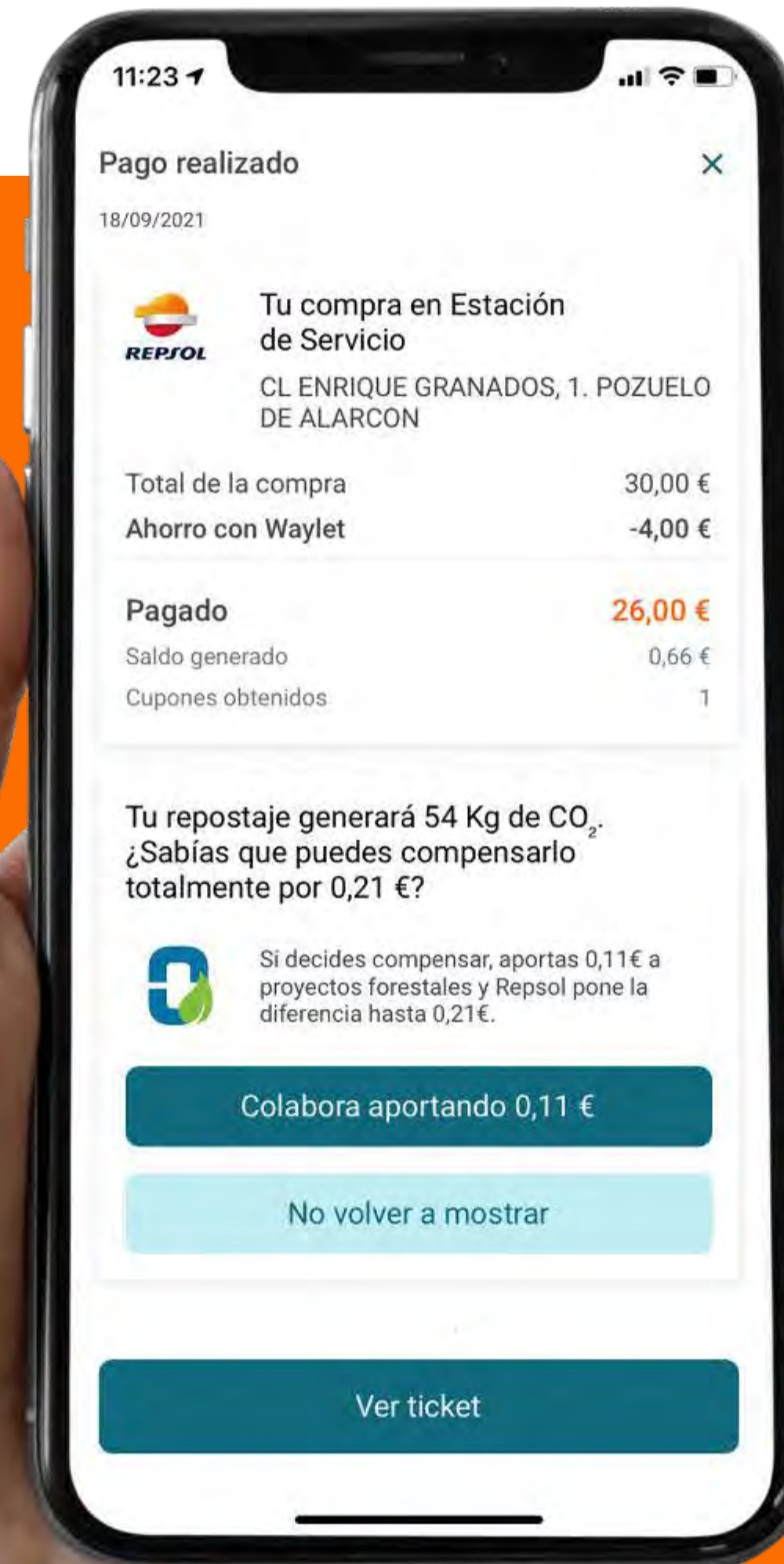
CO₂ Offset



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E-Mobility charging management



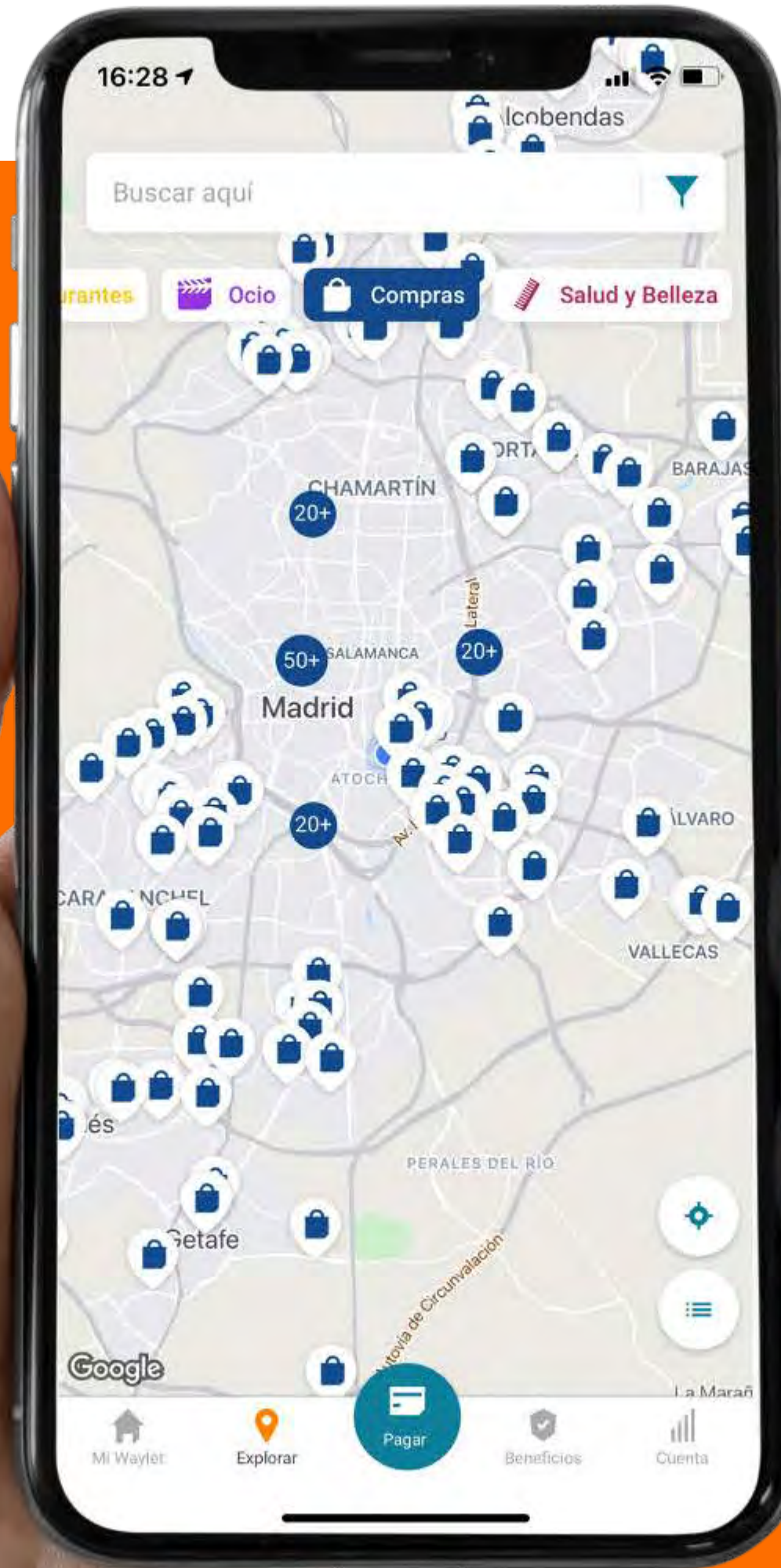
Parkings



Loyalty program



Payment and discounts in strategic partners



Pay at the pump



CO₂ Offset



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Pick up - Delivery



Way&Go
buy in-store without cash



E-Mobility charging management



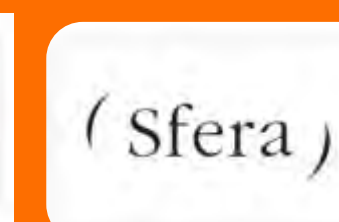
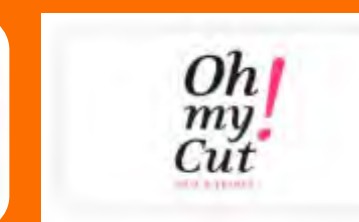
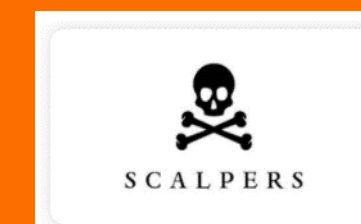
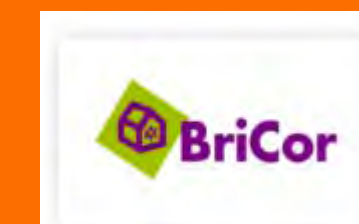
Parkings



Loyalty program



Payment and discounts in strategic partners



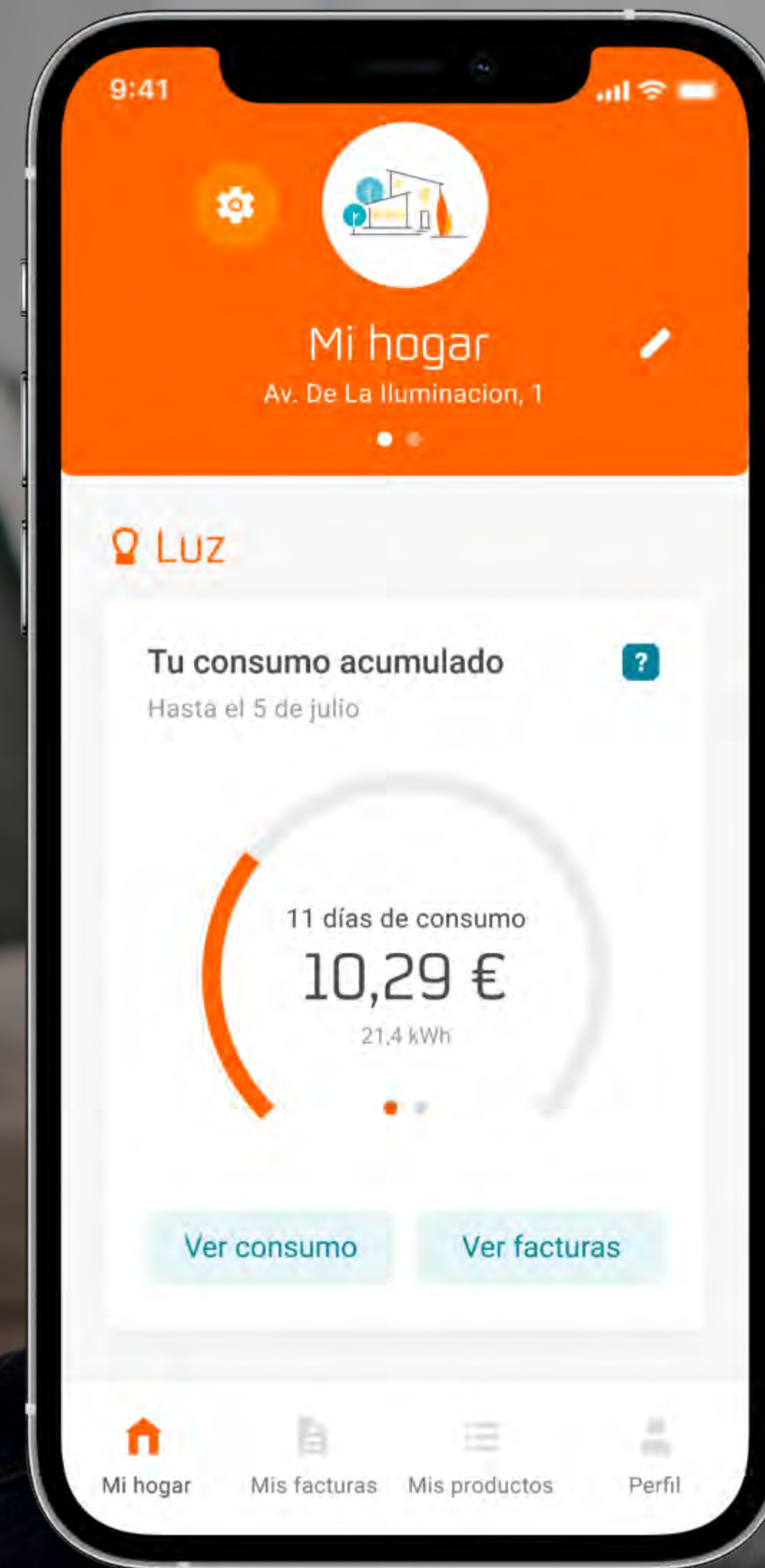
Vivit

Home energy transition management

Customized functions to improve household consumption efficiency

Disaggregated information on appliance expenditure

Consumption comparisons of households with similar characteristics

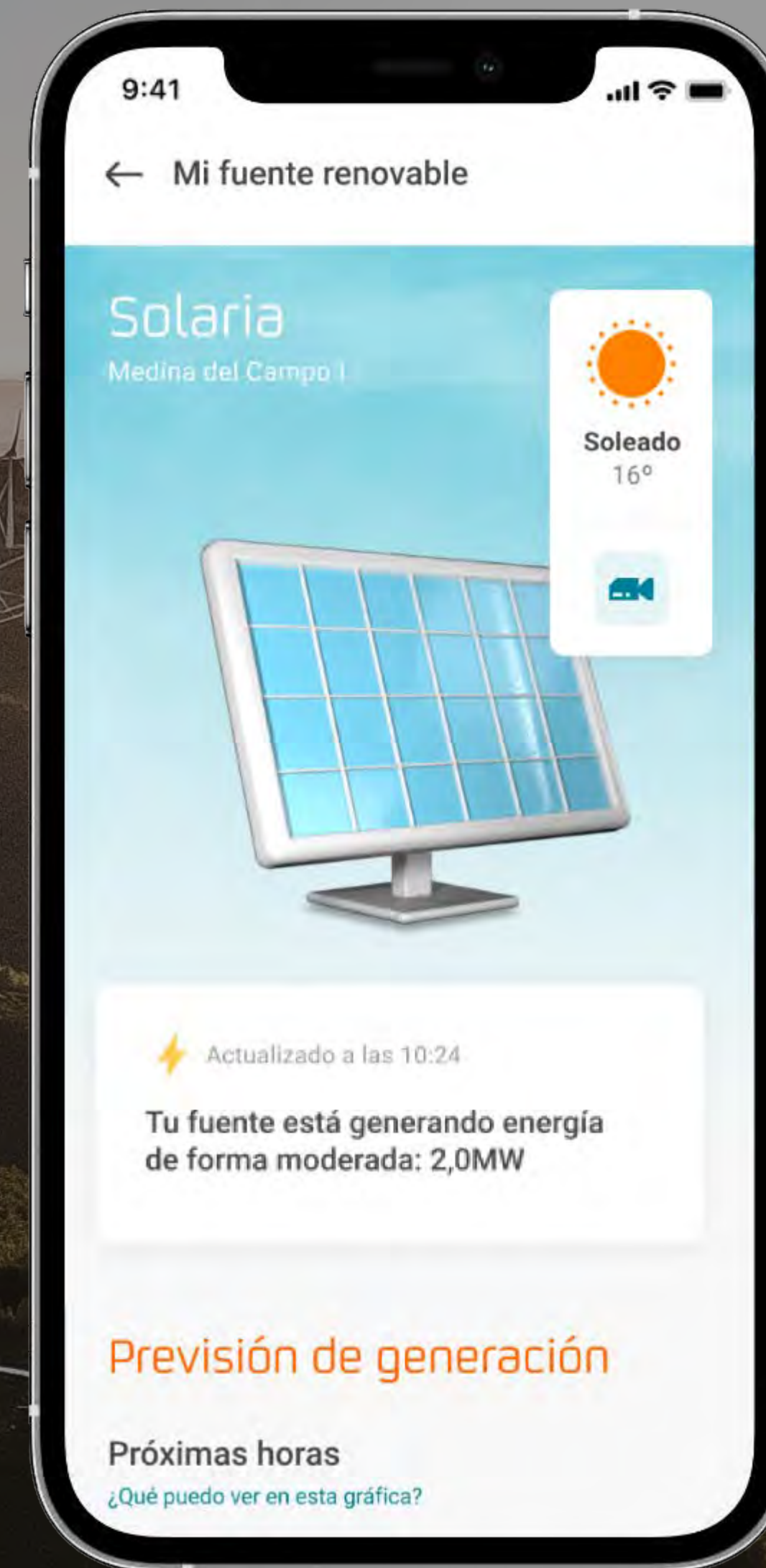


Vivit

NEW FEATURE

Decide the source of the energy you consume from renewable plants of your choice

Real-time information to adjust consumption habits accordingly



New Repsol.es Ecommerce

Repsol successfully leveraging digital to build customer-centric approach and create value



La luz que cuida de los tuyos.

Tu electricidad, al mismo precio durante todo el día. Siempre pagarás el mismo precio, suba o no suba la luz. De día y de noche.

Saber más sobre Tarifa Online >

Solicitar online

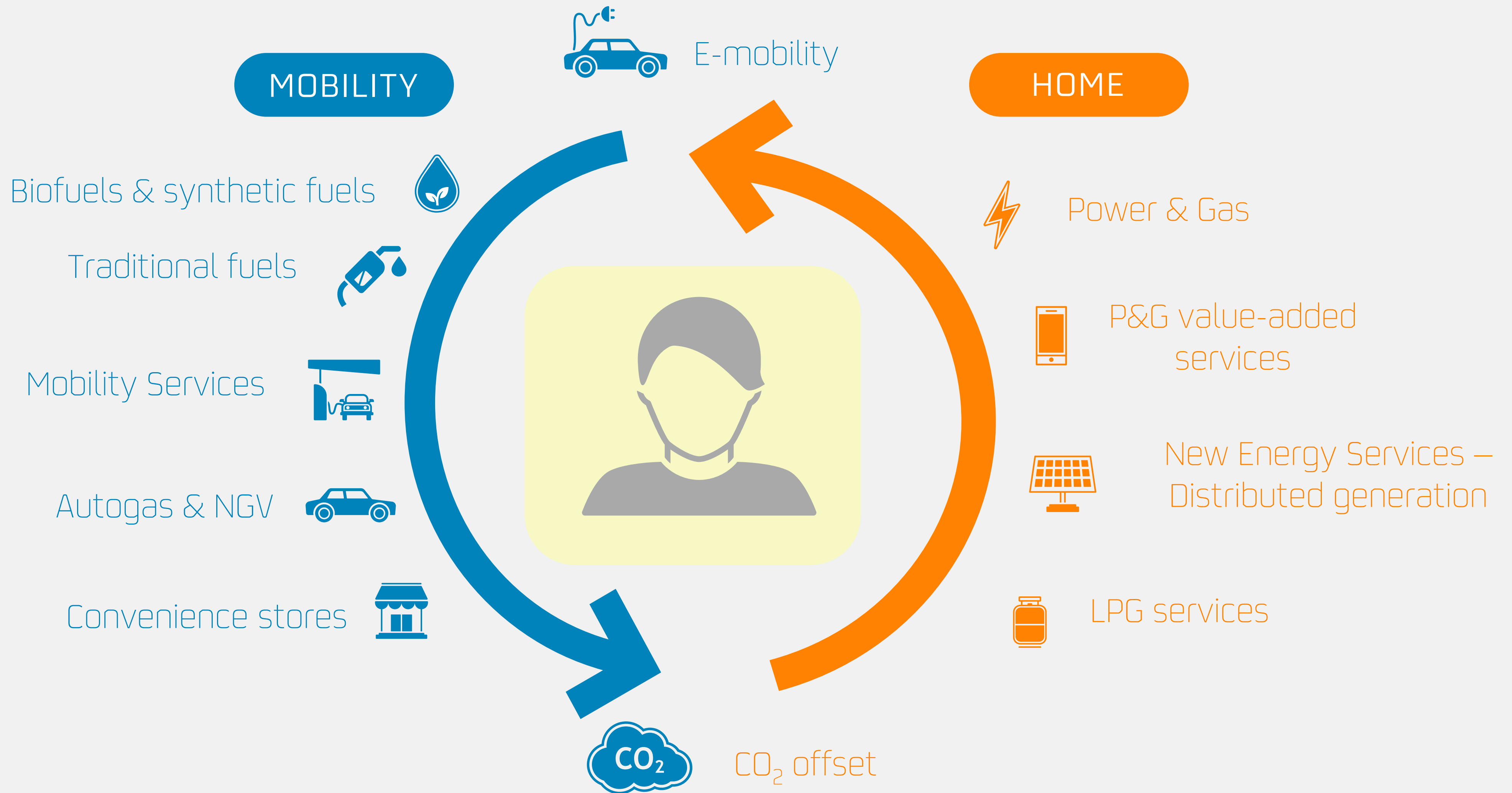
¿Te llamamos?



Hazte premium y gana saldo en Waylet >

Customized
solutions with a
customer-centric
approach



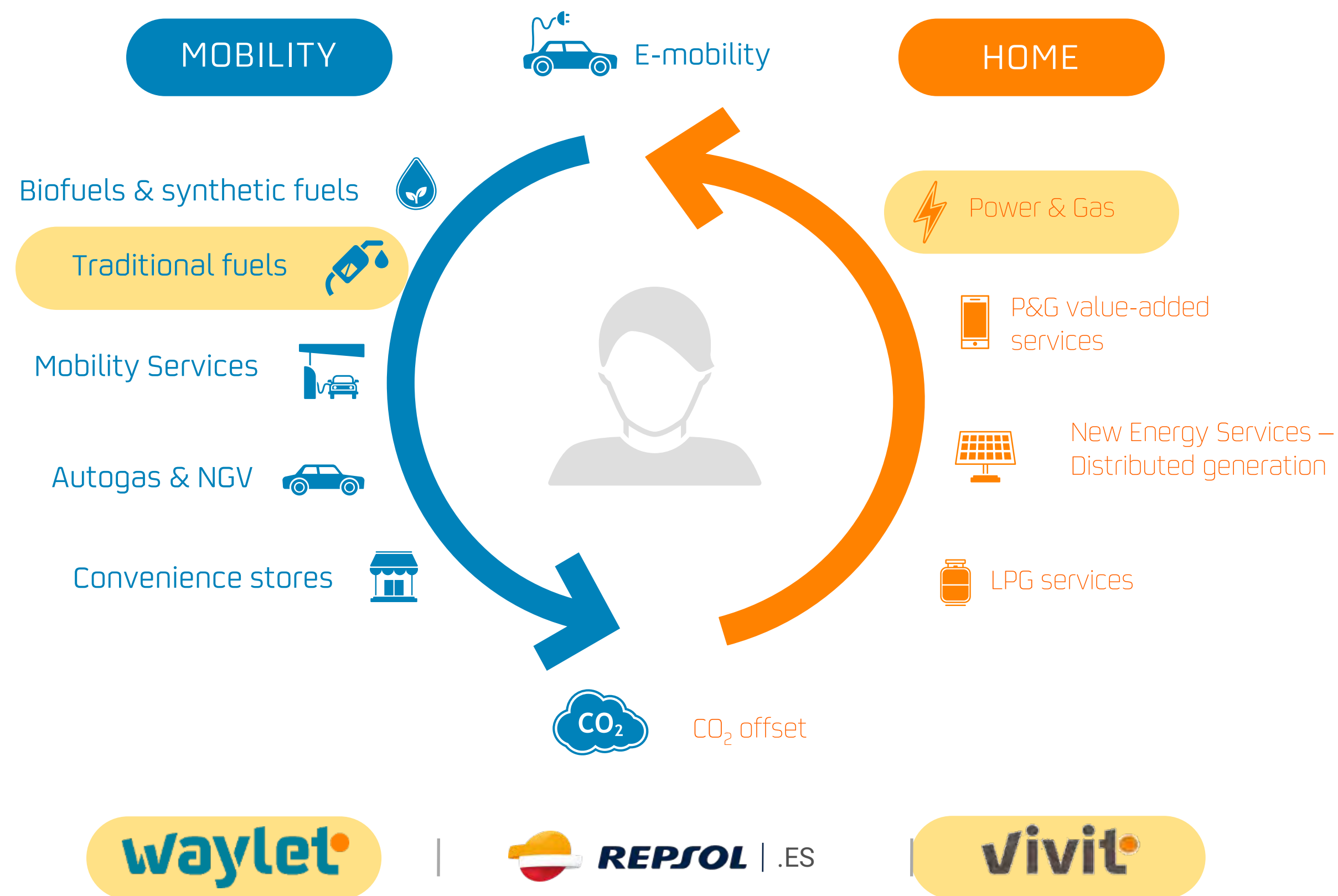


waylet

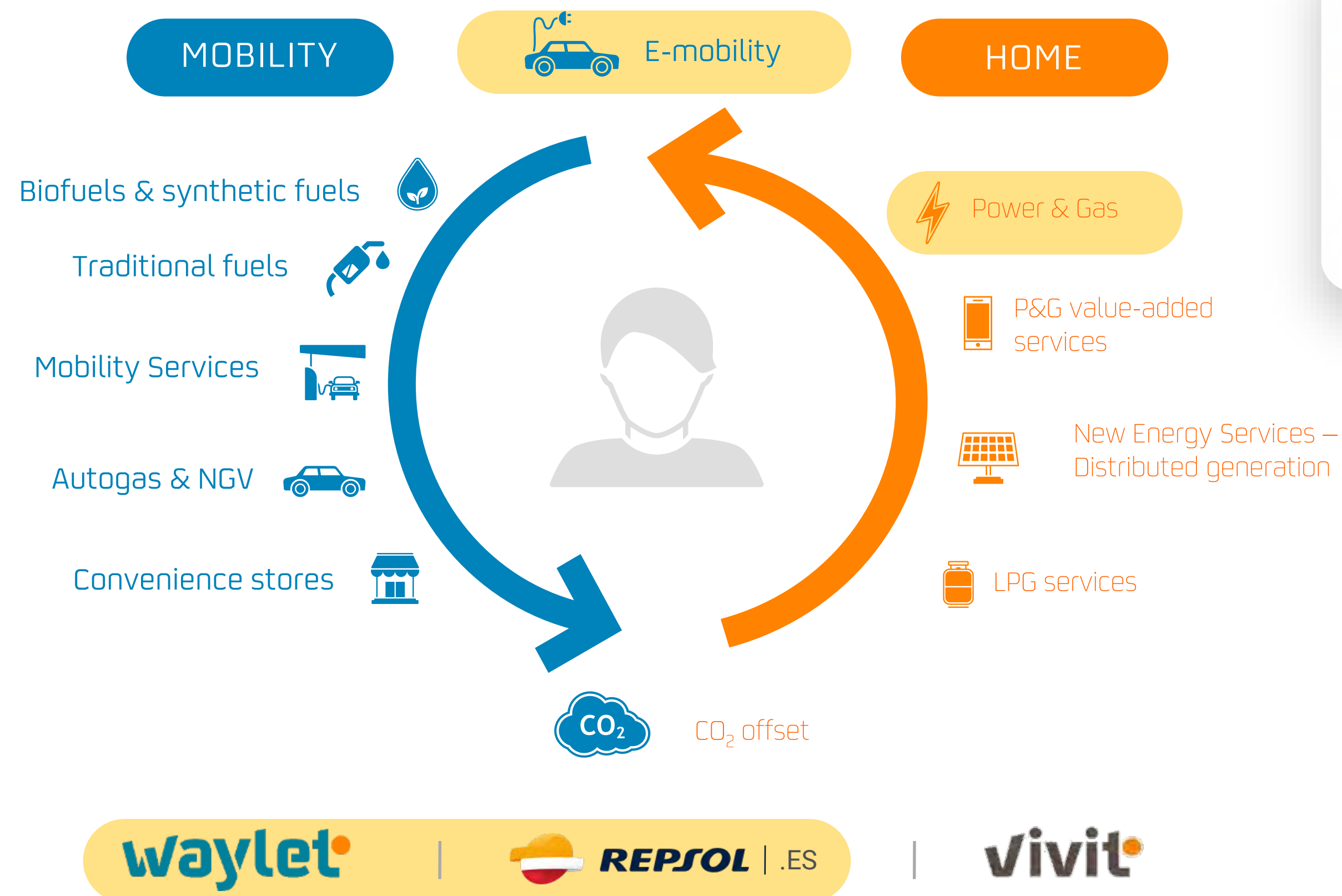
REPSOL | .ES

vivit

Customized multi-energy solutions for our clients



Customized multi-energy solutions for our clients



Los beneficios de la movilidad eléctrica dentro y fuera de tu casa



Recarga en cualquier lugar

Dentro de casa con tu punto de recarga particular, y fuera de casa con la amplia red disponible en toda España.



Gestión del consumo

Localiza el punto más cercano, resérvalo con antelación y paga a través de Waylet.



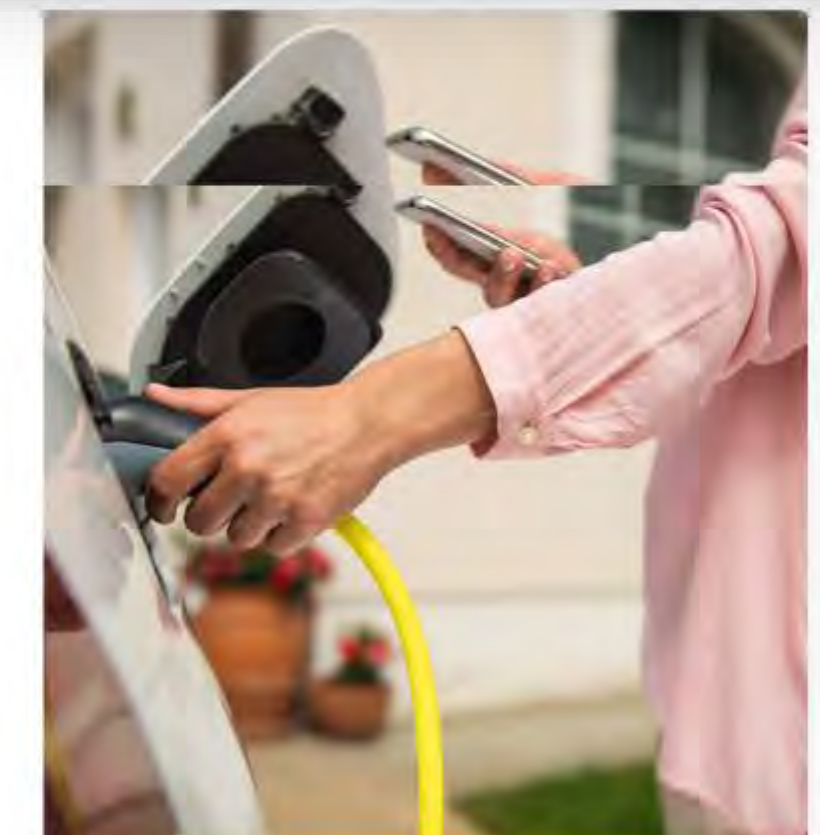
Descuentos disponibles

Consigue recargas gratis además de saldo Waylet con tus recargas.

Solución de recarga eléctrica Repsol

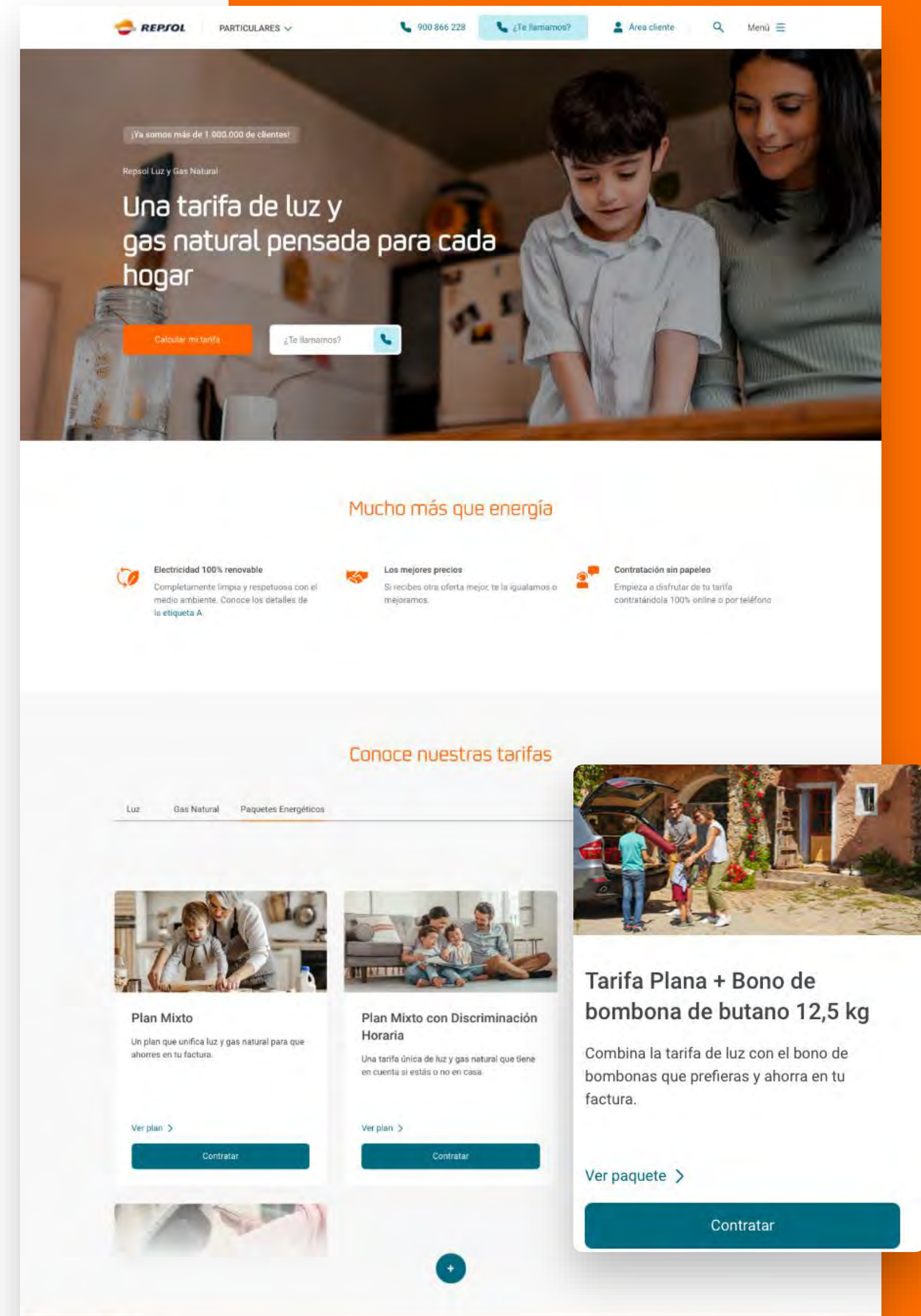
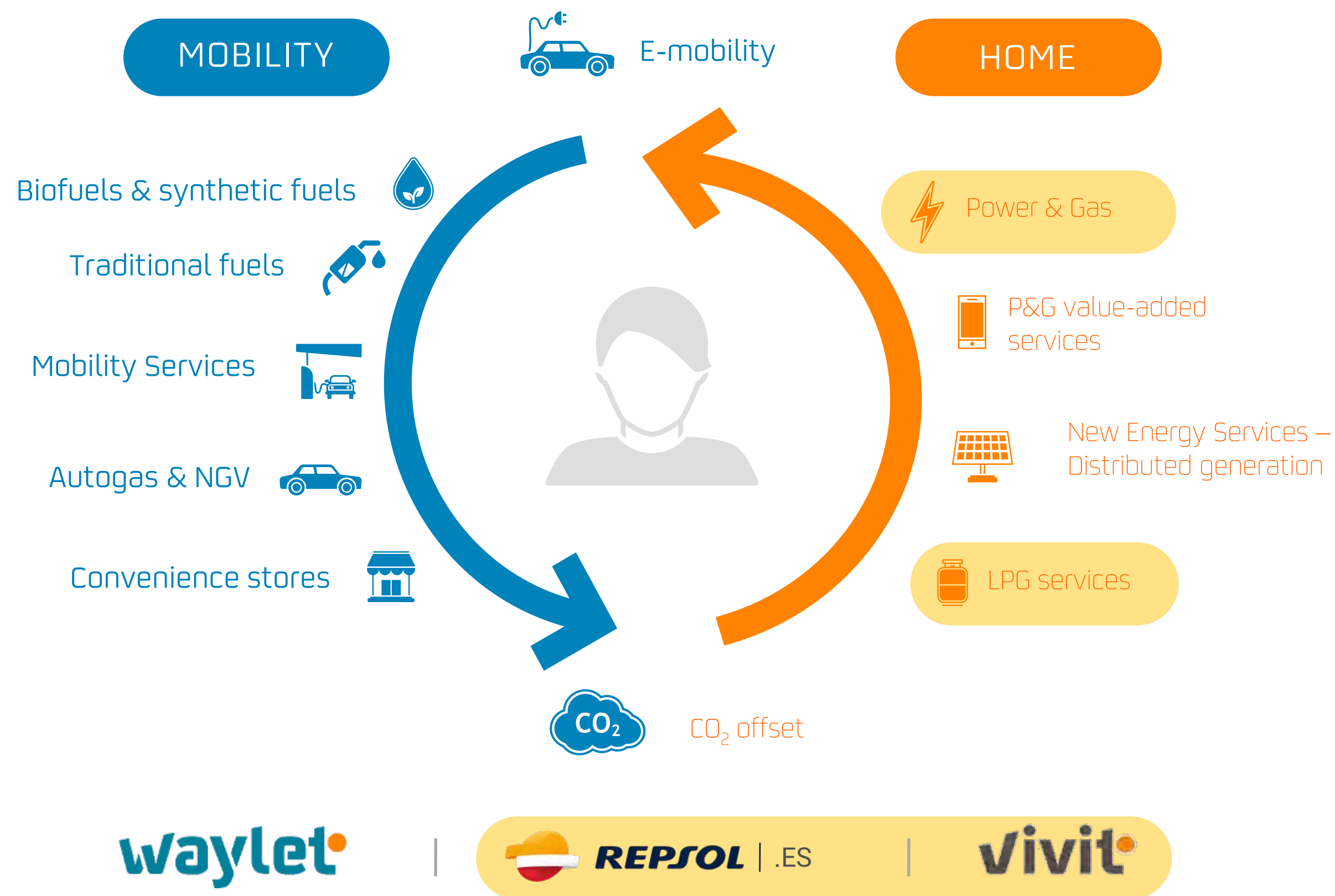
Nos adaptamos a tus necesidades energéticas para recargar tu coche eléctrico tanto dentro como fuera de casa. Descubre todas las opciones que tienes disponibles.

Ver solución

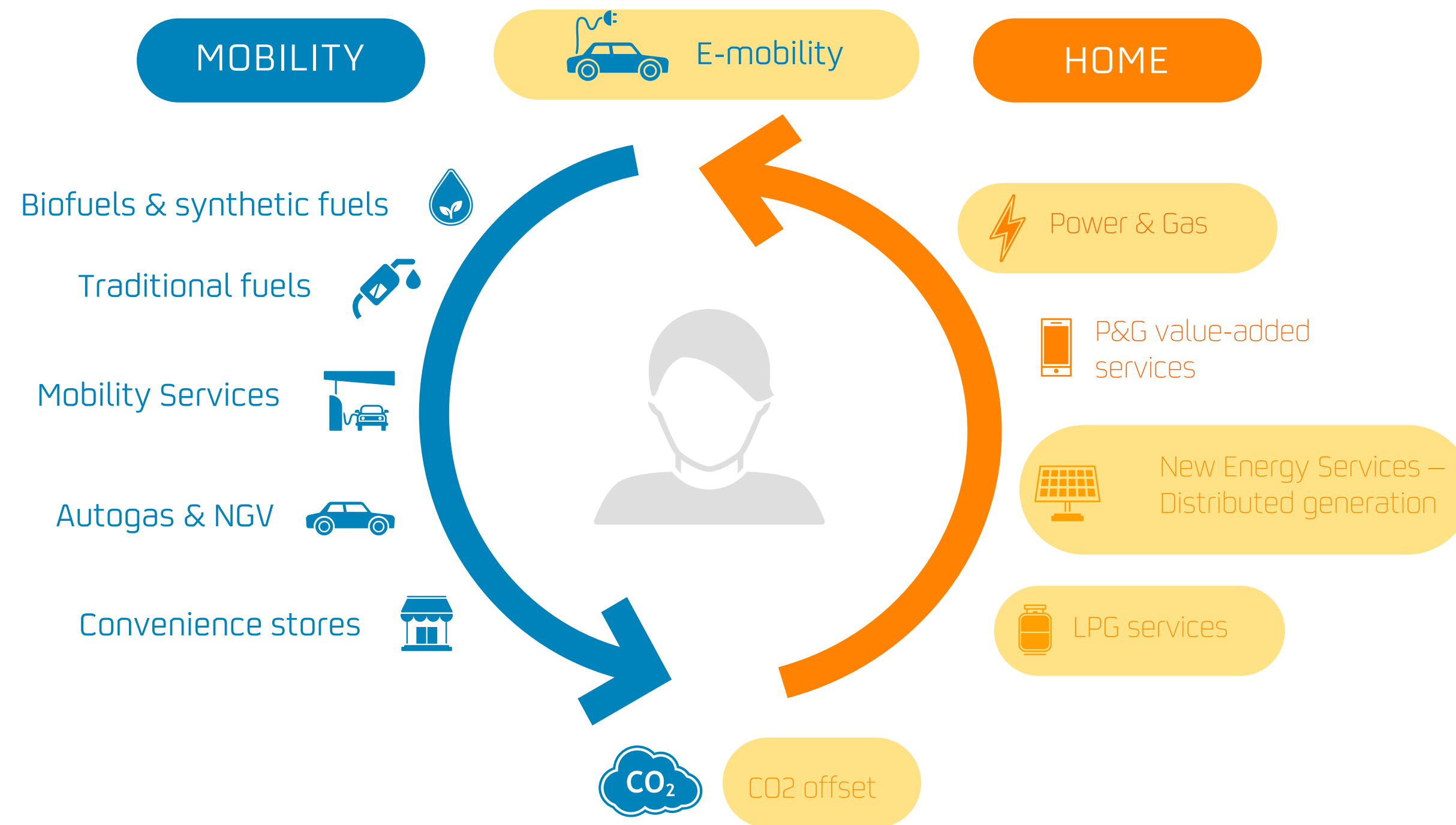


Reforzamos nuestra experiencia con los mejores aliados del sector

Customized multi-energy solutions for our clients



Customized multi-energy solutions for our clients: Food Service Solution



waylet

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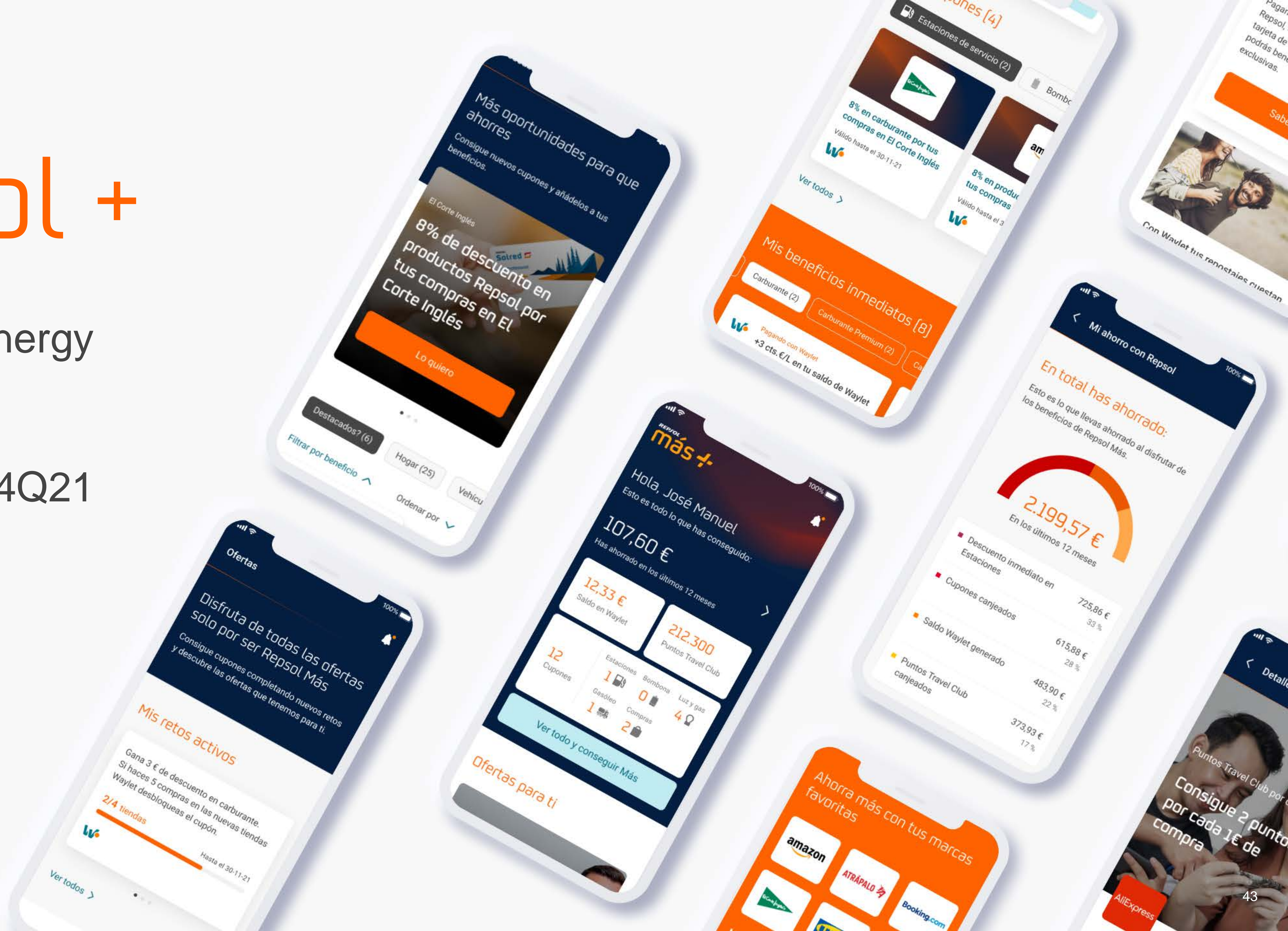
vivit



Repsol +

Spain's first energy community

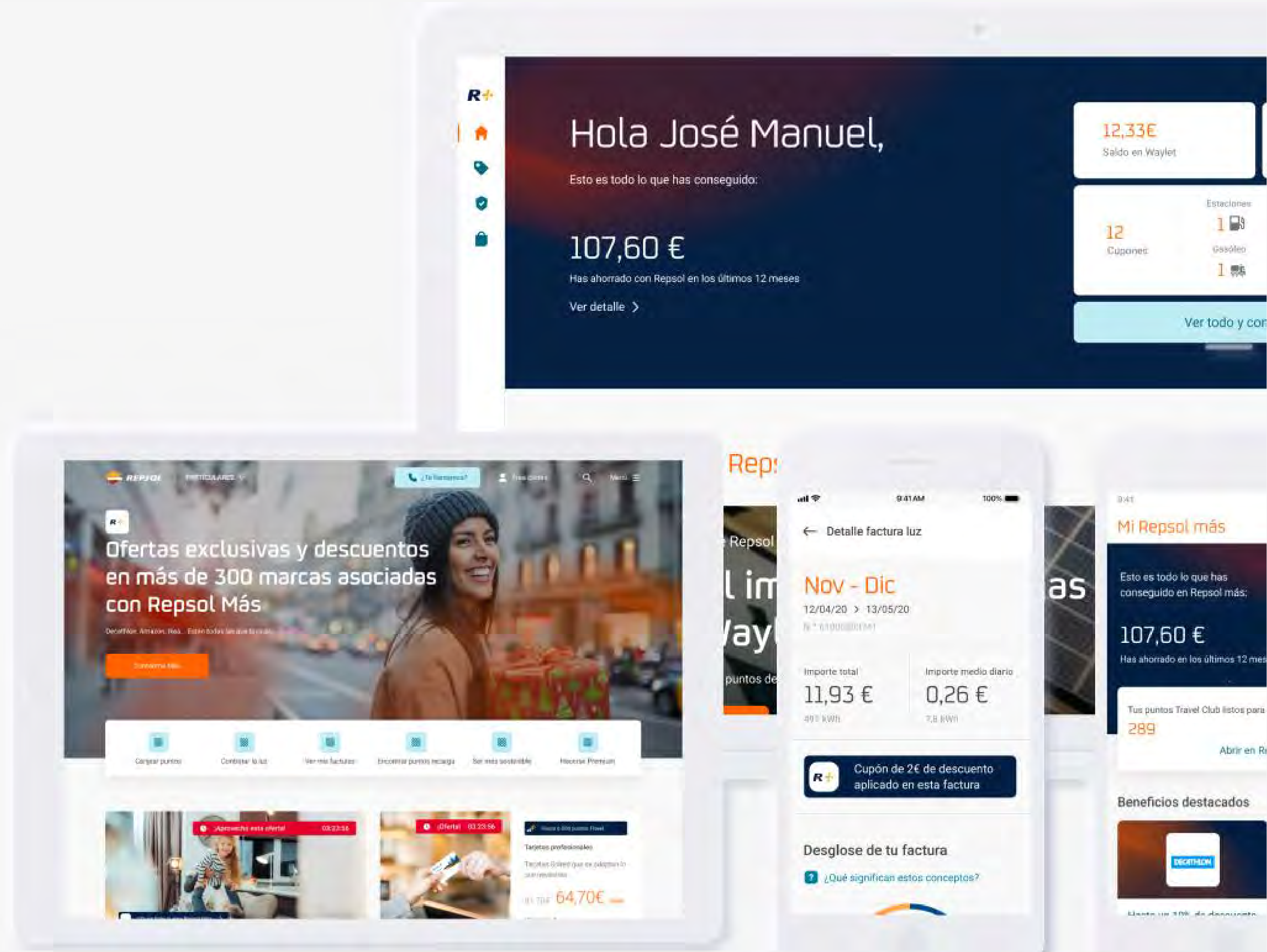
Launch date: 4Q21



Repsol +

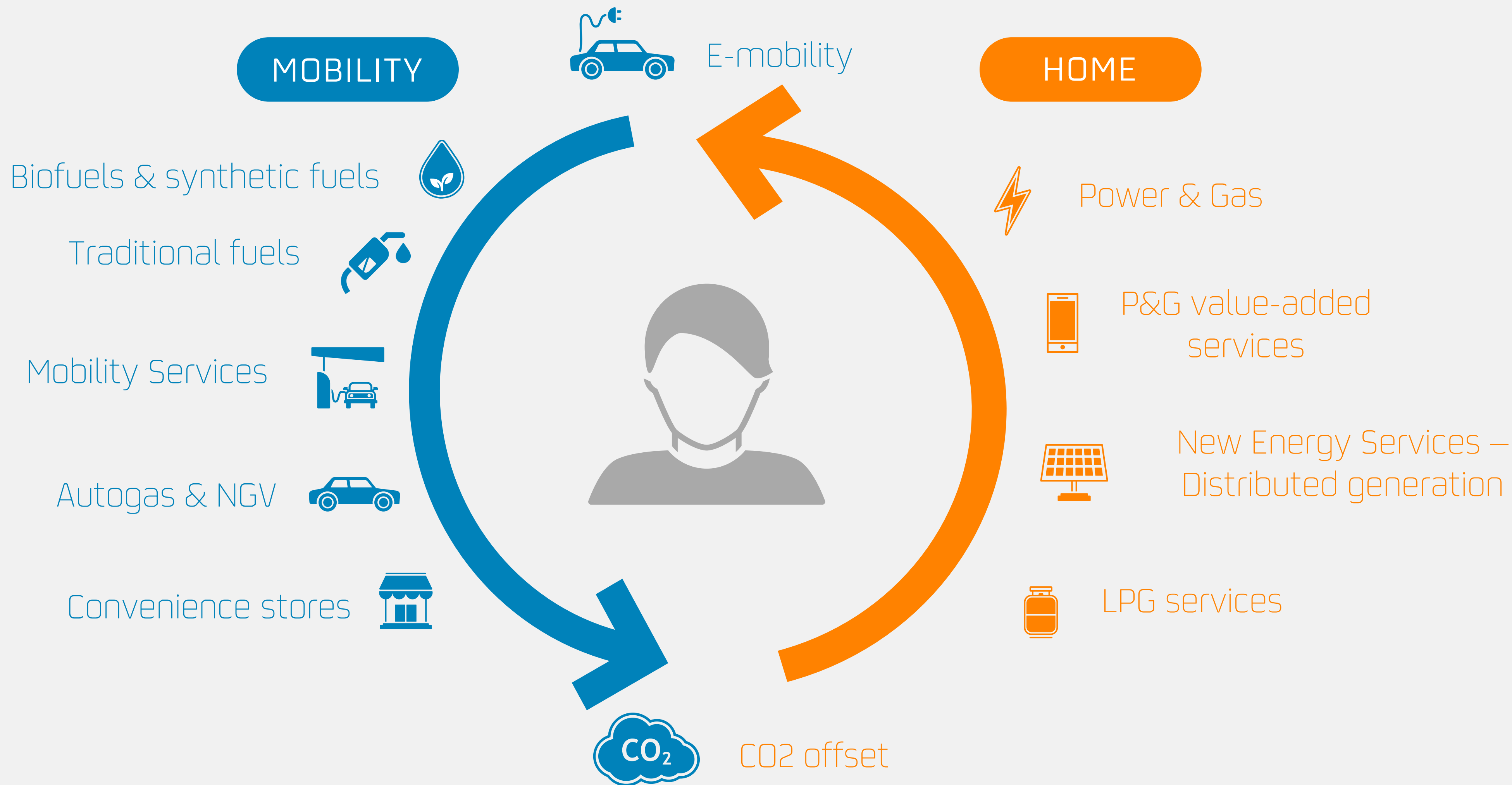
Global loyalty program for Repsol clients

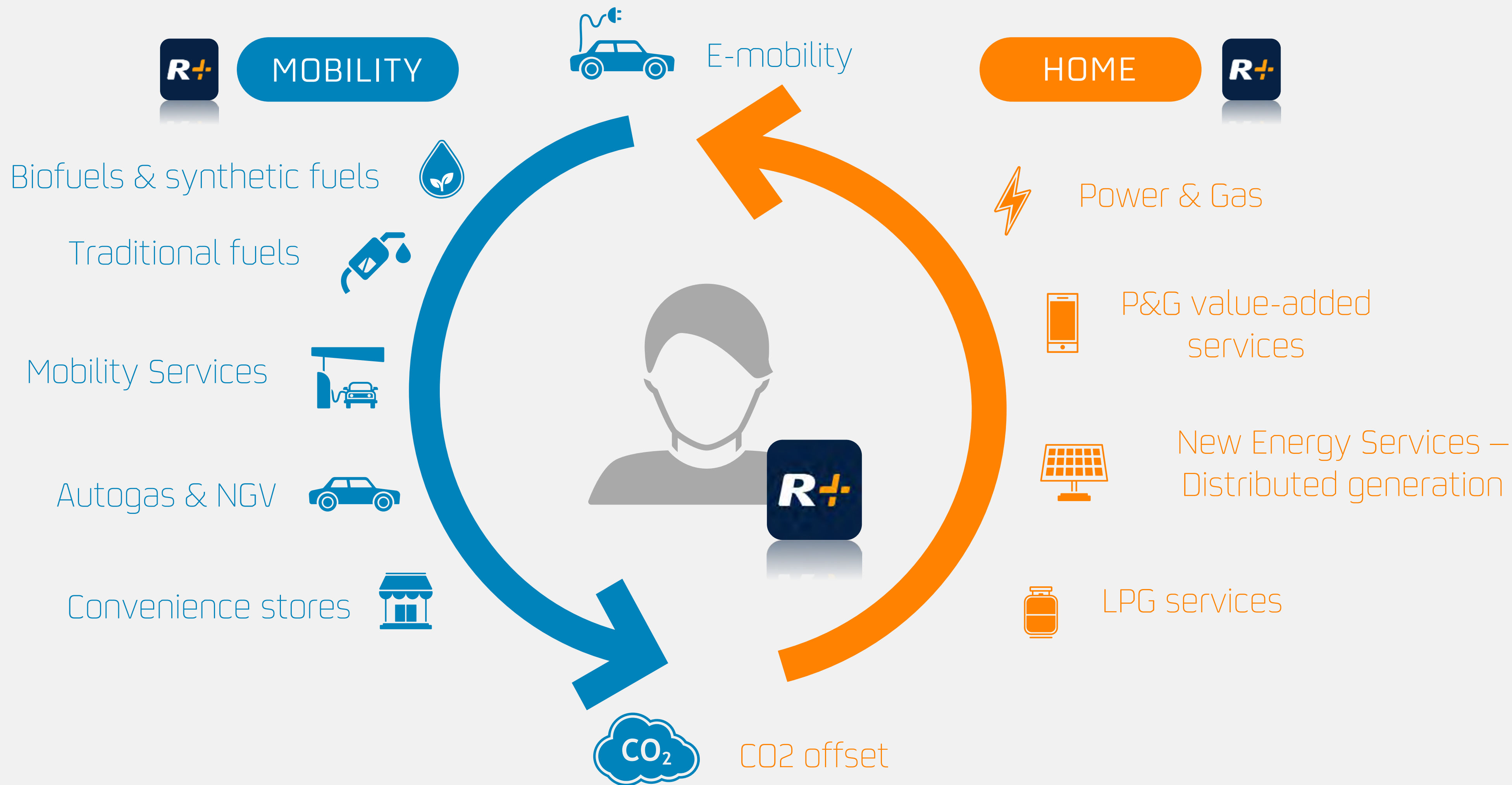
- Transversal vision of your energy
- Value-added services
- Customized offers according to customer needs



Digital.
Multi-energy.
Customer-centric.

Now.





“Satisfy any energy need in people's daily lives in the easiest and most agile way possible and in any area of their lives.”



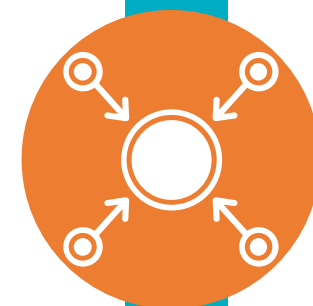
Unique opportunity to create value in the energy transition...



▶ Leading energy customer business with sustainable competitive position



▶ Advantaged and committed play on energy transition

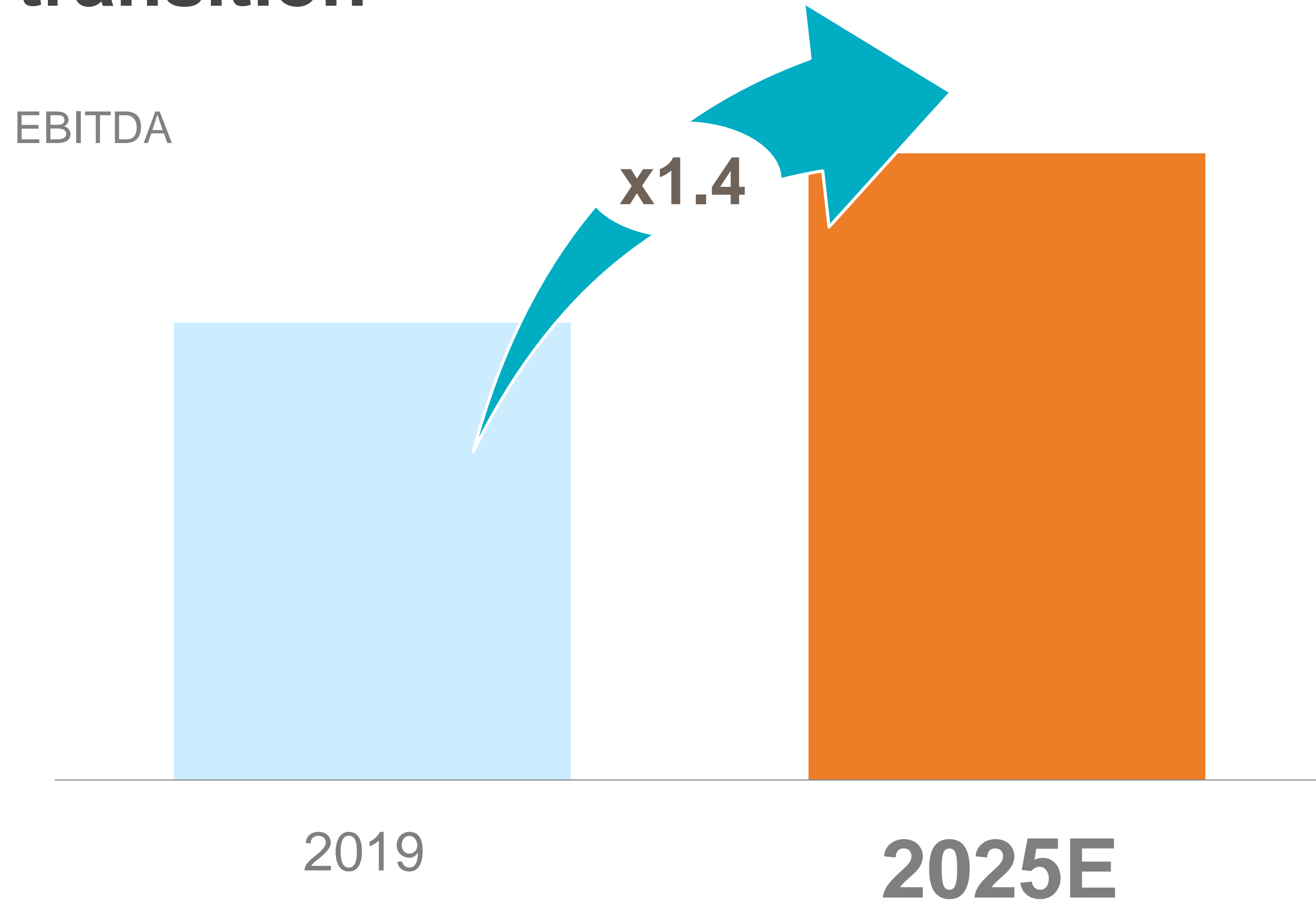


▶ Multi-energy & customer centricity approach



▶ Strong track-record of customer management and digital capabilities

... while increasing customer-centric businesses' EBITDA through energy transition



Including Traditional Mobility (Mobility Spain, Mobility Portugal, Mobility Italy, Mobility Mexico and Central Mobility); E-Mobility; LPG; Lubricants, Asphalts, International Aviation and Specialties; Power & Gas Retail. Energy Services businesses and P&G Central Costs and Customer-centric Business Overheads





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The Repsol Commitment
Net Zero Emissions
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Renewable Generation

João Paulo Costeira

Executive Director of Low
Carbon Generation



The Repsol Commitment
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Index



01.

Introduction: Track record

02.

Strategy: Fast-growth sustainable business model

- Strategic Guidelines
- Pipeline Characterisation
- Updated Targets
- Value addition & Targeted Returns
- Asset Rotation Rationale

03.

Deep dive in Delta I Project



The Repsol Commitment
Net Zero Emissions
by 2050



01.

Introduction
Track record



The Repsol Commitment
Net Zero Emissions
by 2050



01. Introduction Track record

What we have achieved so far: over delivering on our targets



Launch organic growth

- Build-up of a material portfolio of **c.11 GW of wind and solar projects in Spain**



Build and put in operation pipeline

- 1.7 GW operational by YE 2021 with a clearly defined **operating model**



Create international platforms

- Developed platforms in **US and Chile** with over 30 GW of projects in different stages of development



Develop capabilities

- Top talent hired from leading Renewables players and in-house top resources



1.7 GW

Operating Capacity,
2021YE

250¹ Employees

In renewables

4.7 GW

Under construction, secured
& high visibility projects

**20+ years
experience**

Management team

+20 GW

Development pipeline with
potential COD² <2025YE

**+15,000 MW
Developed**

Management team

(1) As of July 2021

(2) Commercial Operation Date



01. Introduction Track record

De-risking the ambition



Hecate acquisition

Differential element to achieve Repsol's long term objectives of generation capacity and internationalization of this business in one of the largest, fastest growing and most attractive markets at a relatively modest upfront capital commitment with significant option value and upside potential allowing Repsol to create a high growth renewable platform with strong development capabilities in the US



Step into the USA Renewable Energy Market to become an integrated developer and operating player

- Represents the first step of Repsol into the US renewable market, complementing our Renewables' strategy and paving the way the construct a Repsol OpCo in the U.S.

Disciplined Acquisition of a minority stake (40%) of Hecate Energy, leading independent developer with a portfolio of more than 40 GW of utility-scale PV solar and battery storage projects in the U.S.

- Experienced and proven management team
- One of the largest, and regionally diversified, solar PV portfolios in the U.S.
- 16.8 GW pipeline (Early and mid term projects) and 4.3 GW Storage Capacity through Hecate Grid

Participation in the development (being able to influence and decide EPC and PPA before the transfer) phase while maintaining preferential position to build the Renewable position in the USA

- Access to Hecate pipeline (at Repsol sole discretion)
- Parallel incorporation of Repsol OpCo to develop, construct and operate new GW in USA
- Potential full acquisition in year 3 at Fair Market Value





02.

Strategy: Fast-growth sustainable business model



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Net Zero Emissions
by 2050



02. Strategy: Fast-growth sustainable business model

Vision: To become a global leading integrated player in the renewable business targeting a size of 6 GW in 2025 and 20 GW by 2030 from a modest starting position



Integrated Model based on top capabilities

In line with the nature as an **industrial company** and supported by **leading management team** with **robust track-record**, the renewables business will be based on an **integrated approach** through the value chain **based on top capabilities** in operations and management



“Off-taker oriented” Growth with differentiated Energy Management

Based on forecast of consumption patterns we are **defining our portfolio** with an **adequate energy mix** and **short development cycles to provide flexibility** and different **contracting solutions** to our clients **underpinned by Repsol’s brand**



Relevant Presence in OECD Targeted Markets

We target **sizable presence** in a few **well-defined OECD countries** to achieve **low risk and operational efficiency**



Asset Rotation

We will seek to **capture the yield compression** between the development stage and fully commercial and operational projects **by selling down stakes to low cost of capital investors**

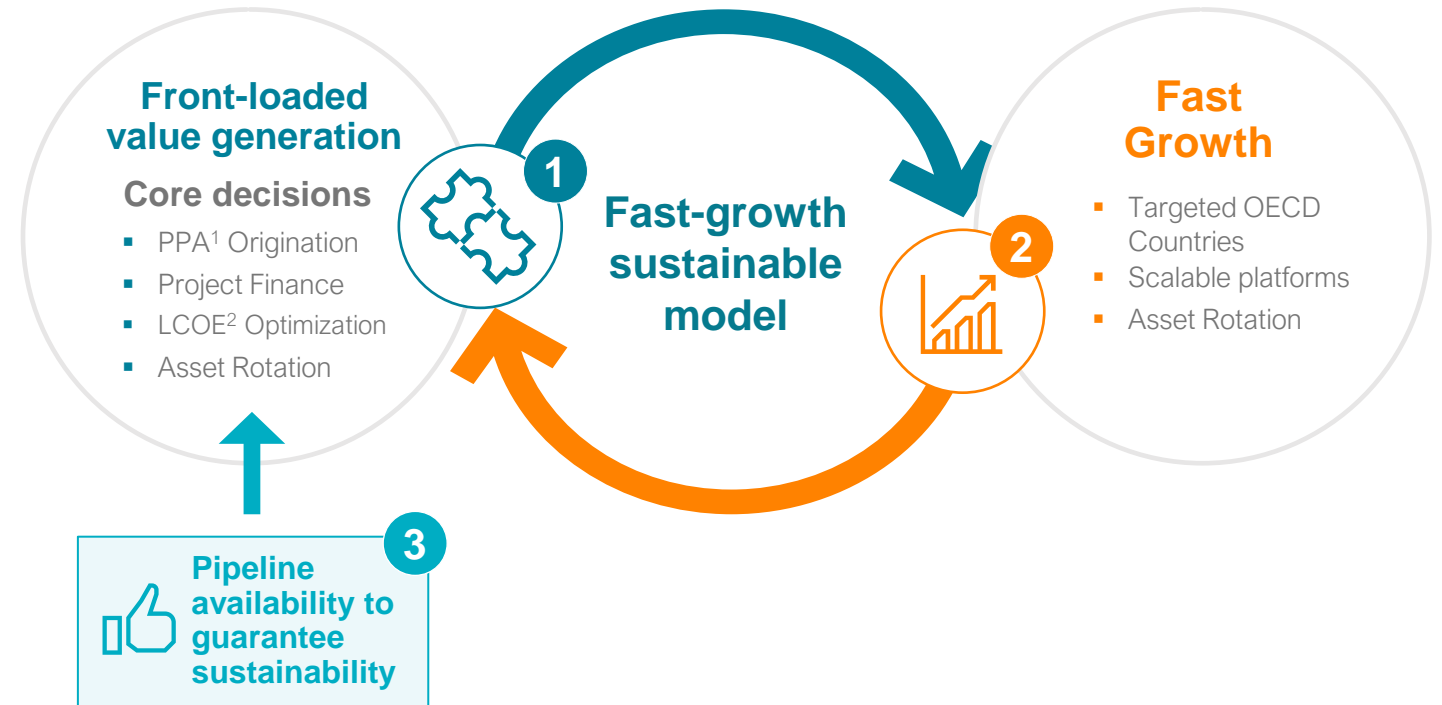


02. Strategy: Fast-growth sustainable business model

Strategic Guidelines

Fast-growth sustainable business model

In line with our nature as an industrial company and supported by **leading management team** with robust track-record, the renewables business will be based on an integrated approach through the value chain based on top capabilities in operations and management

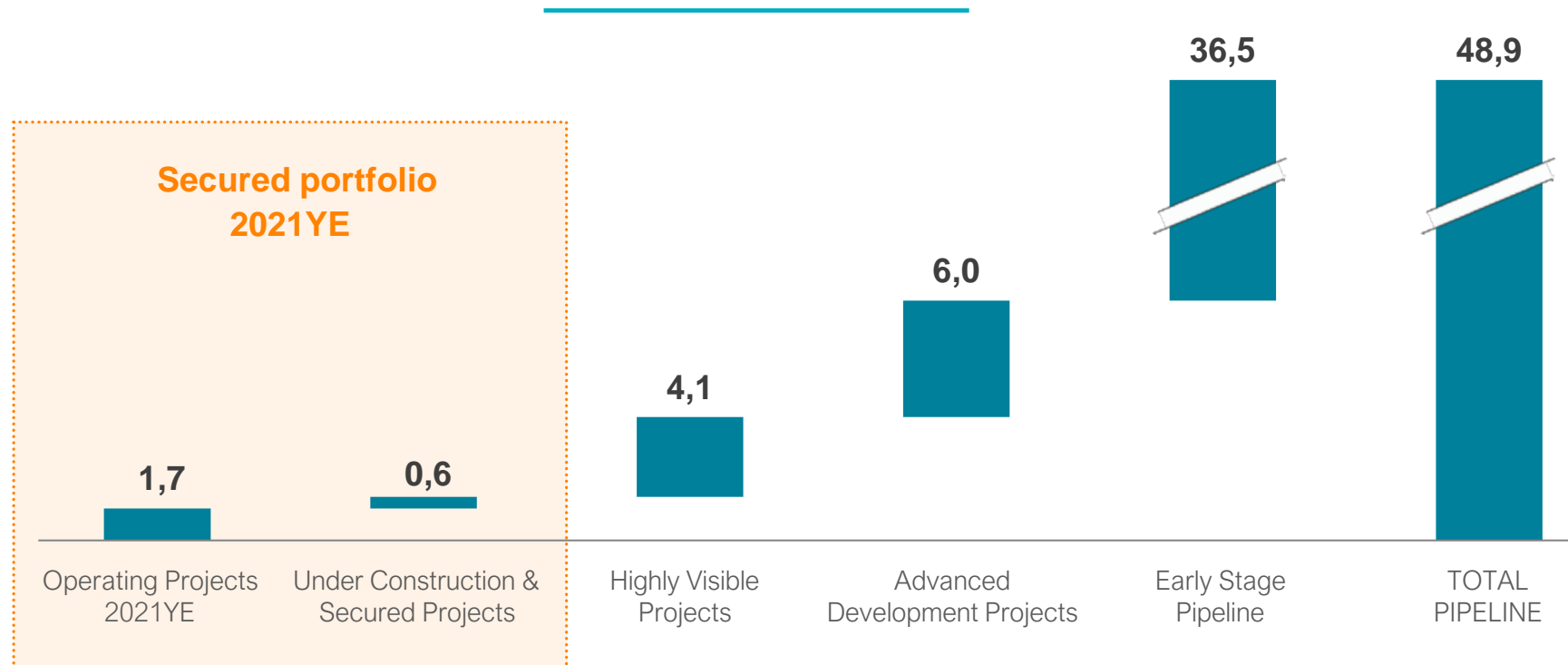


(1) Power Purchase Agreement
(2) Levelized Cost of Energy

02. Strategy: Fast-growth sustainable business model

Supported by a sizeable and diversified pipeline of renewable projects ...

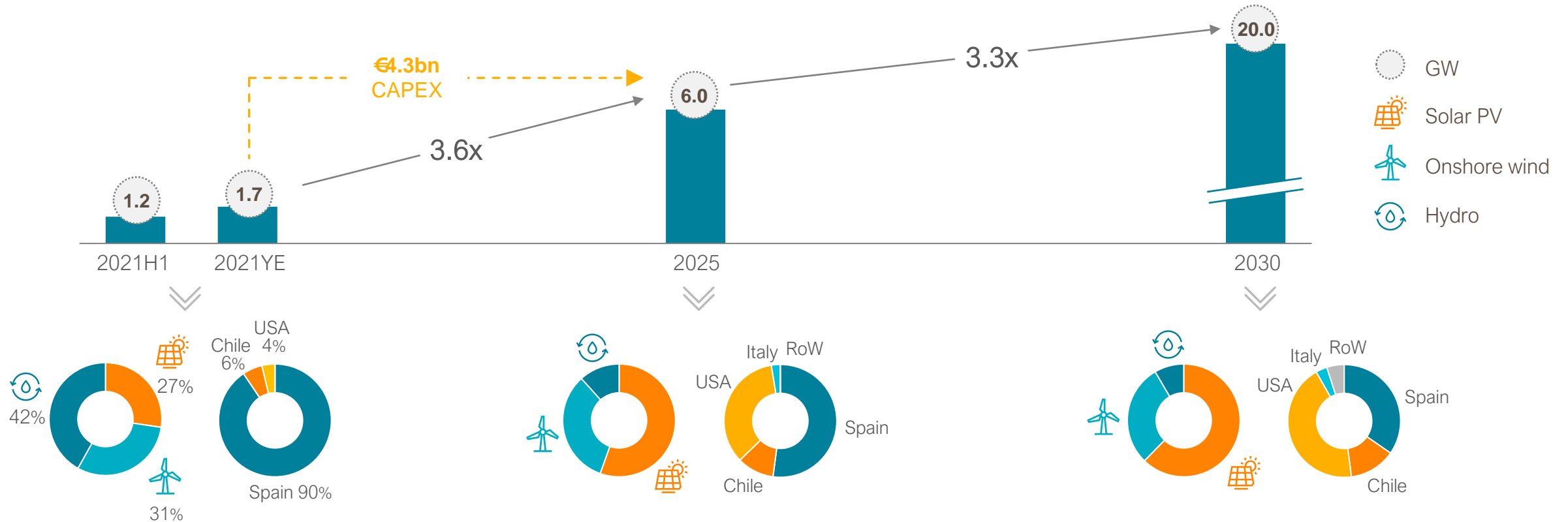
Renewables operating + pipeline capacity (GW) September 2021



02. Strategy: Fast-growth sustainable business model



... Repsol was able to update the strategic growth targets



Notes: Assuming Hydro is entirely in Spain and considering 100% in Spain and International (excl. Chile) and 50% JV stake in Chile; US Solar includes Solar PV plus Battery Storage



02. Strategy: Fast-growth sustainable business model

Value addition & Targeted returns: Strong capabilities through the value chain driving operational excellence resulting in superior value creation



Notes: EPC - Engineering, Procurement and Construction; HSE - Health, Safety and Environment; C&I - Corporates and Industrials

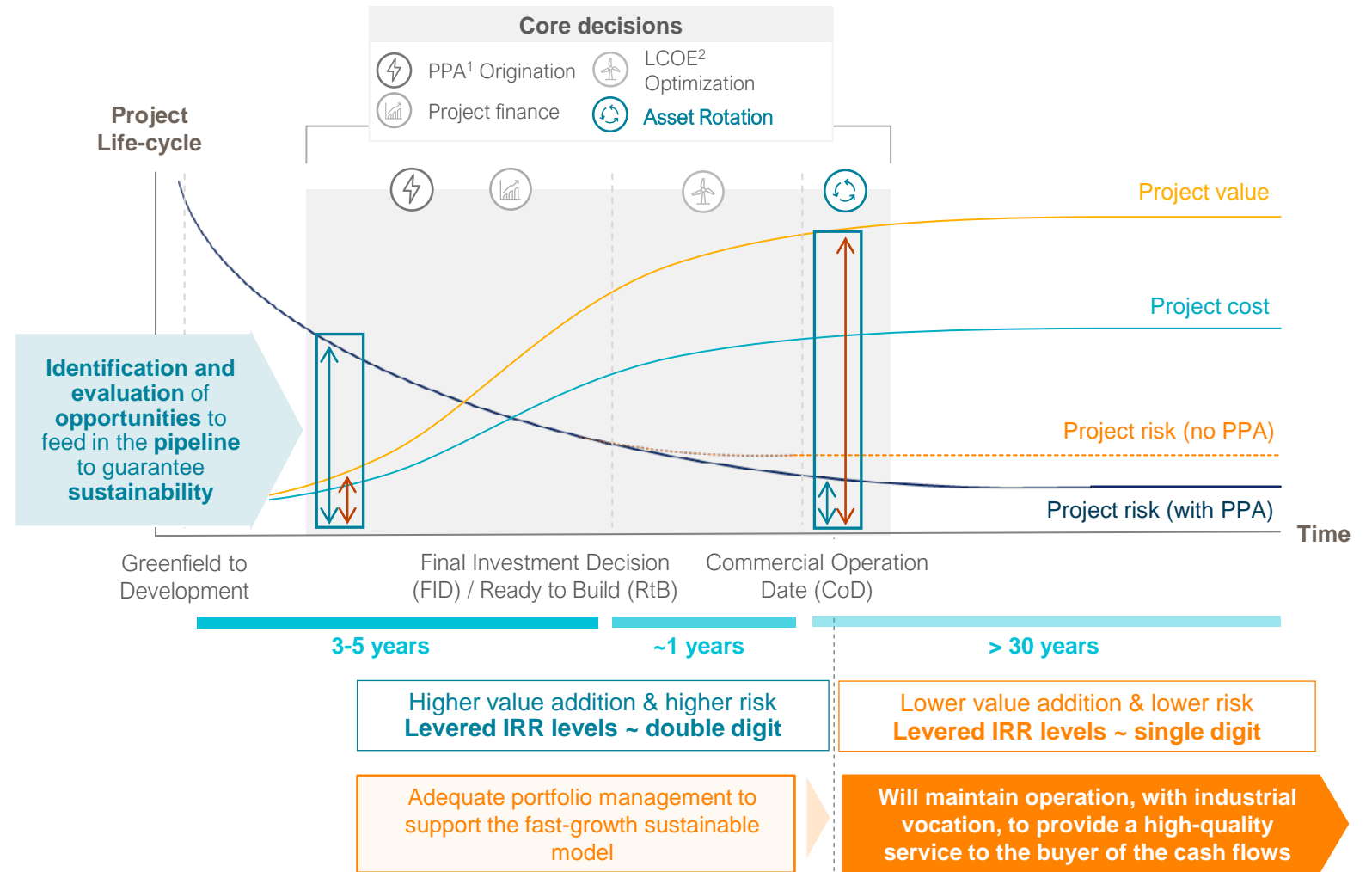
02. Strategy: Fast-growth sustainable business model

Asset Rotation Rationale

Repsol will capture the yield compression between the development stage and fully commercial and operational projects by selling down stakes to low-cost-of-capital investors



Substantial value creation over small period of time in the asset life-cycle



(1) Power Purchase Agreement
(2) Levelized Cost of Energy



03.

Deep Dive in Delta I Project



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Net Zero Emissions
by 2050



03. Deep dive in Delta I Project

Location & Main Highlights



Delta I Project

Young operating wind portfolio in Spain with 335 MW of installed capacity.



Location



1 **Aguasvivas (236 MW)**
Located in Zaragoza



2 **Montetorrero (99 MW)**
Located in Zaragoza



	1	2
	Montetorrero	Aguasvivas
REPSOL		
Number of projects	2	6
COD ¹	Feb-21	Dec-20 – Mar-21
Installed Capacity (MW)	99	236
Energy Production P50 (MWh)	322,981	651,463
Availability (%)	97%	97%
PPA ²	✓	✓

Main highlights

- The wind portfolio includes 8 farms, with an installed capacity of 335 MW and fully operational since Mar-21. The portfolio is located in the Aragon region, a strategic area with abundant wind resources
- Cash flows are secured through PPAs with highly competitive and attractive terms and conditions, with Repsol as the main off-taker
- Wind farms in the Portfolio are in optimal conditions for hybridization with solar PV technology, estimated to be implemented by 2023
- Top-tier suppliers and service providers such as General Electric, Elecnor or Eiffage, among others

(1) Commercial Operation Date
(2) Power Purchase Agreement



03. Deep Dive in Delta I Project

Safety & Environment: Working to protect the safety of the People and the Environment in every phase of each and all projects

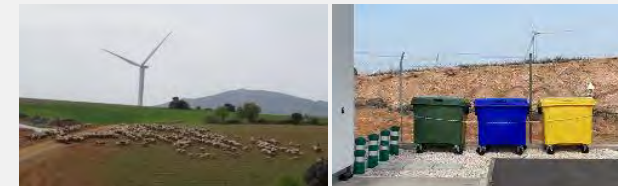
Safety Measures examples

- Health and Safety Coordinator always on site to guarantee compliance with the Safety Plan and that the work is carried out with high safety standards
- Procedures for operational and risk control
- Control of protective equipment
- Emergency drills to be prepared for possible scenarios



Environment Measures examples

- Implementation of bird detection and deterrence systems to avoid collisions with aero-generators
- Biodiversity protection measure: reintroduction of Bonelli's eagle (a species in danger of extinction since 2005), in collaboration with the Biodiversity General Direction of the Government of Aragon and conservation associations
- Weekly monitoring of mortality and use of the birdlife space
- Restoration plan minimizing impact on flora
- Efficient control and management of waste, erosive processes and water regime

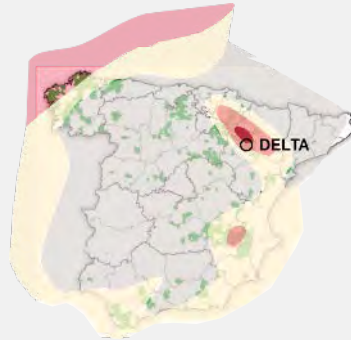


03. Deep Dive in Delta I Project

Project Characterization

Resource information

Project is located in a favourable resource area with higher equivalent hours than market average.



Net equivalent hours

2,964

Delta I

2,100

Market Average



Technical description

1 Montetorrero Cluster	
COD	Dec-20 to Feb-21
Number of plants	2
Peak capacity (MW)	98.8
Substation	SET Montetorrero
P50 Gross production	322.5 GWh
Turbine type	GE 130
Number of Turbines	26
Turbine Manufacturer and O&M	
EPC and BoP O&M	
Asset Management and Market Access	

2 Aguasvivas Cluster	
COD	Oct-20 to Jan-21
Number of plants	6
Peak capacity (MW)	236.6
Substation	SET Las Majas VII
P50 Gross production	669.1 GWh
Turbine type	GE130
Number of Turbines	63
Turbine Manufacturer and O&M	
EPC and BoP O&M	
Asset Management and Market Access	

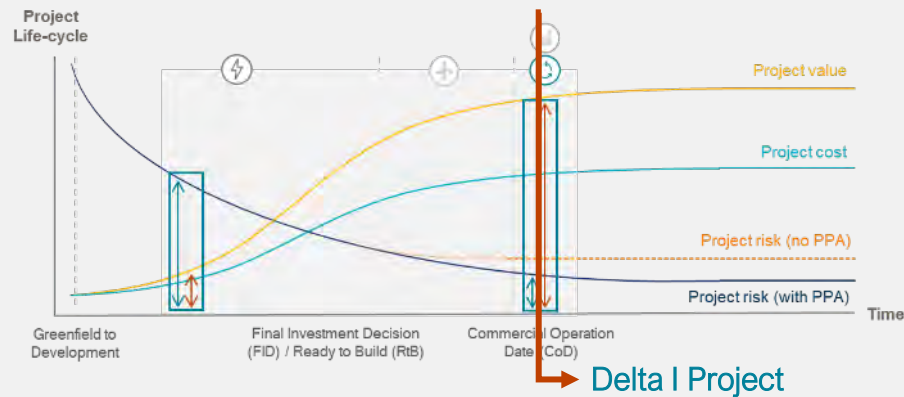
03. Deep Dive in Delta I Project





Strategy & Profitability

Strategy progress

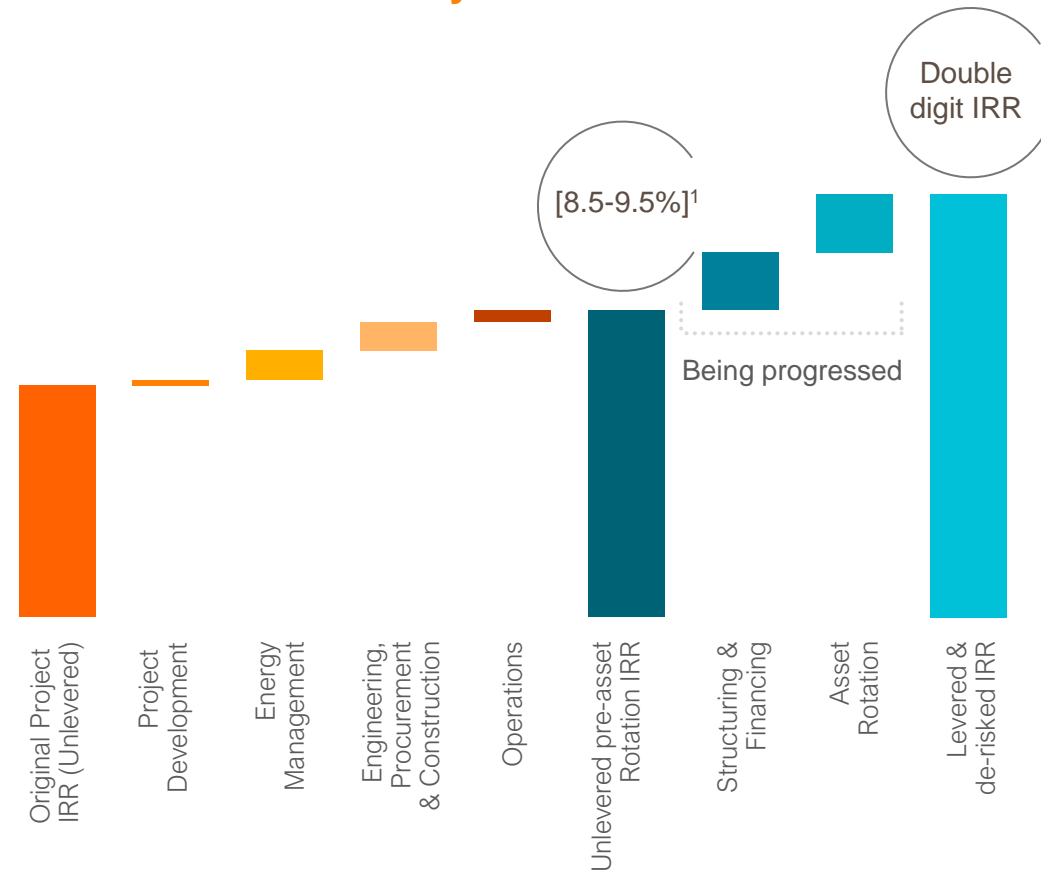
To date, it has been fully funded with equity and shareholder loans granted by Repsol

Will be the first asset to fully implement this strategy



Core decisions	Status
 PPA Origination	✓
 Project finance	In progress
 LCOE Opt.	✓
 Asset Rotation	In progress

Indicative Profitability



(1) Assuming Q2 2021 Baringa Central price scenario



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by 2050





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Annex



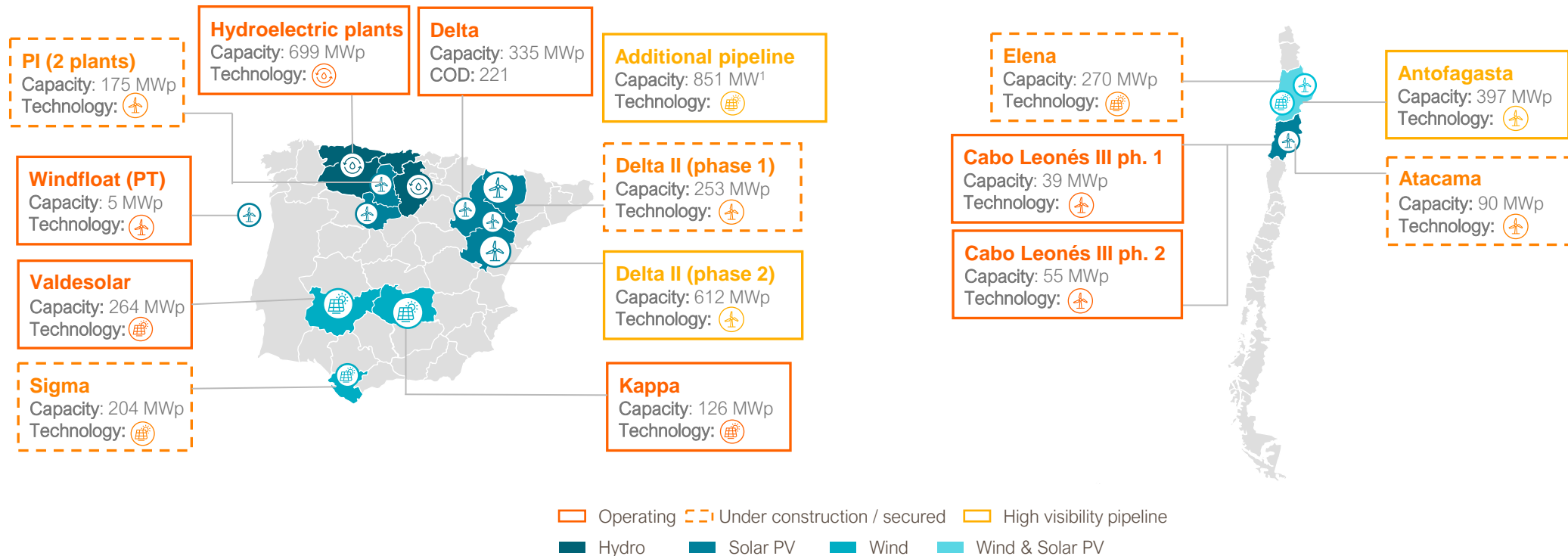
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by 2050



01. Introduction Track record

Repsol has, in a short time, grown to a substantial business supporting energy transition ambitions

Geographical footprint of Repsol Renewables



Source: Company information

Notes:

(1) Greenfield projects with interconnection rights, including solar hybridization projects in wind portfolio



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Net Zero Emissions
by 2050

01. Introduction Track record

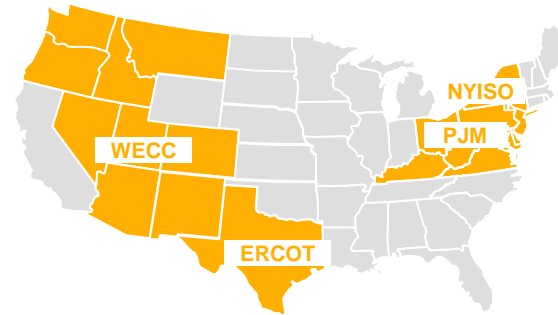
De-risking the ambition



Hecate acquisition

... allowing Repsol to create a high growth renewable platform with strong development capabilities in the US

Well-diversified footprint across the most attractive US energy markets...



Early and mid term projects

16.8 GWdc



Solar PV
13.8 GWdc

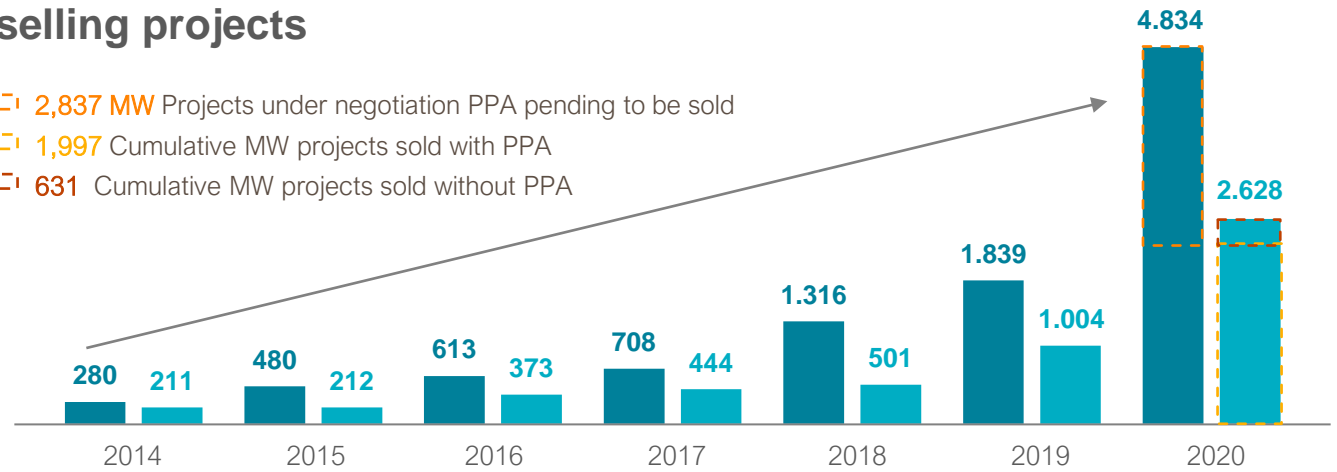


Batteries
3.0 GWdc



... and a strong track record developing and selling projects

- 2,837 MW Projects under negotiation PPA pending to be sold
- 1,997 Cumulative MW projects sold with PPA
- 631 Cumulative MW projects sold without PPA



■ Cumulative MW under negotiation PPA ¹
■ Cumulative MW projects sold ¹



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by 2050

1. As of May 2021



Low Carbon Day

Low Carbon initiatives in
Exploration: CCS

Mikel Erquiaga

Director of Regional Exploration
Eastern Hemisphere



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by 2050



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Index



01.

Our Starting Point

The Upstream Business in the Energy Transition context

02.

Sakakemang Project:

- Discovery & Appraisal
- CCS
- CCS (Carbon Pricing)
- CCS worldwide benchmark
- CCS Technical Assessment



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Net Zero Emissions
by 2050



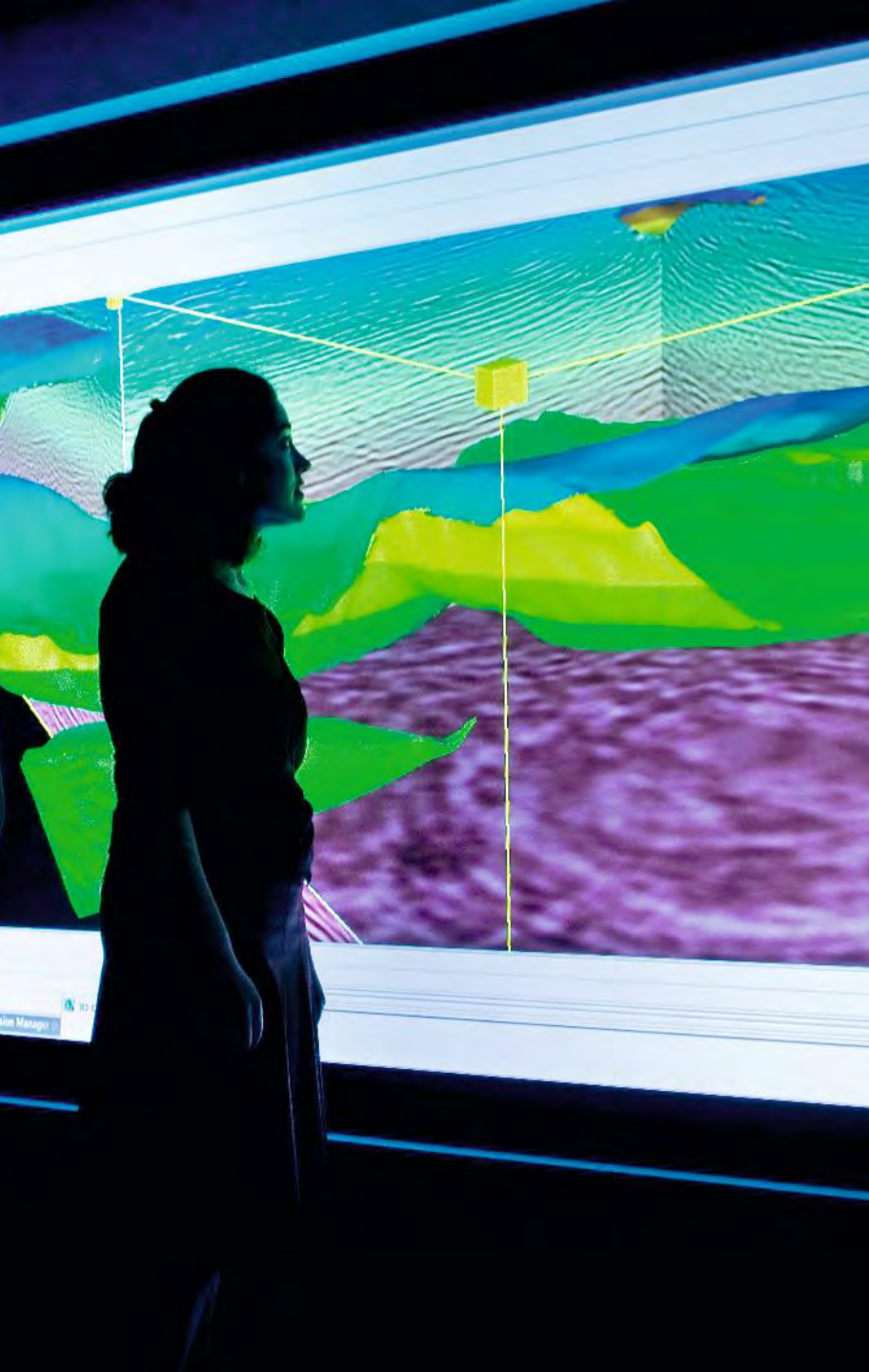
01.

Our Starting Point



The Repsol Commitment
Net Zero Emissions
by 2050





01. Our Starting Point

The Upstream Business in the Energy Transition context



Repsol: First O&G Company to announce Net Zero commitment by 2050



Decreasing capital employed in conventional O&G exploration activities and geographically concentrated (2021-2025 Strategic Plan)



Exploration personnel skill sets in conventional O&G exploration activities is being re-converted to Low Carbon Exploration initiatives aligned with our Net Zero ambitions:

- Carbon Capture & Storage (CCS) in the subsurface to abate CO₂ emissions
- Exploration for Geothermal Resources to boost low CO₂ energy generation (similar activity to (O&G Exploration)
- Hydrogen Storage to provide solution to buffer H₂ production through storage in saline cavities in the subsurface



The expertise of our G&G workforce will be source of Competitive Advantage in the Energy Transition



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by 2050



02.

Sakakemang Project



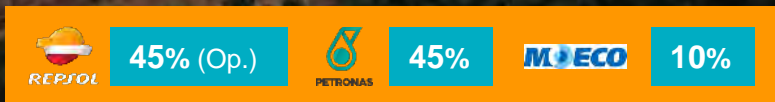
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by 2050



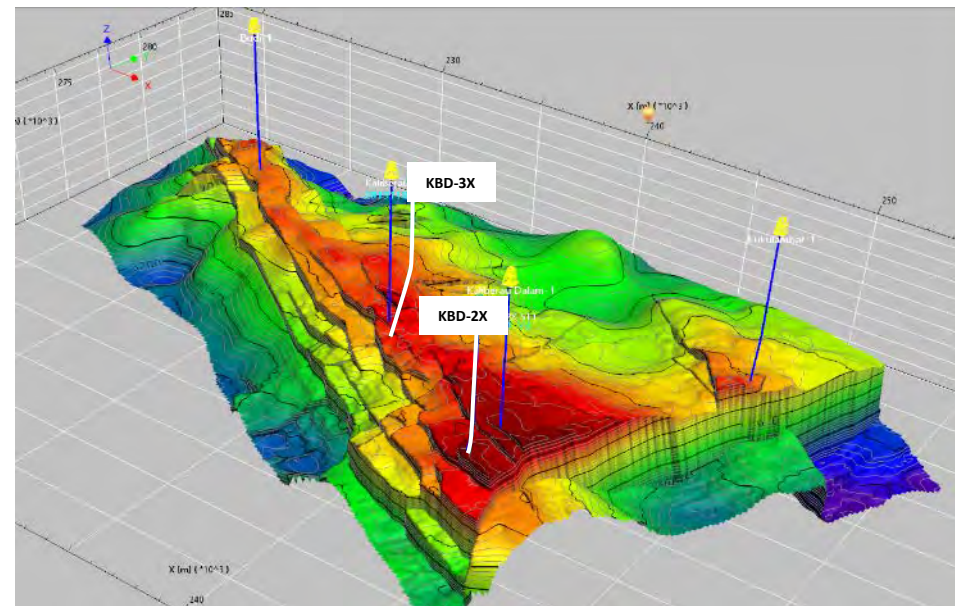
02. Sakakemang Project

Discovery & Appraisal

Sakakemang PSC:
Kaliberau Dalam-2X Discovery (KBD-2X)



- Kaliberau Dalam-2X discovery well: February 2019
- Largest Gas discovery in Indonesia in the last decade (>2 TCF)
- Gas with high CO₂ content (26%)
- New Greenfield Projects need to be Net Zero
- Appraisal campaign following the KBD-2X discovery:
 - KBD-3X appraisal well (2020-2021) – Completed
 - Long Duration Test (LDT) on KBD-2X discovery Pressure monitoring in KBD-3X (2021) – Ongoing
- Objectives of appraisal program: confirm the volumes associated to the discovery and confirm connectivity between KBD-2X & 3X
- Volumes of CO₂ directly related to discovered volumes of gas



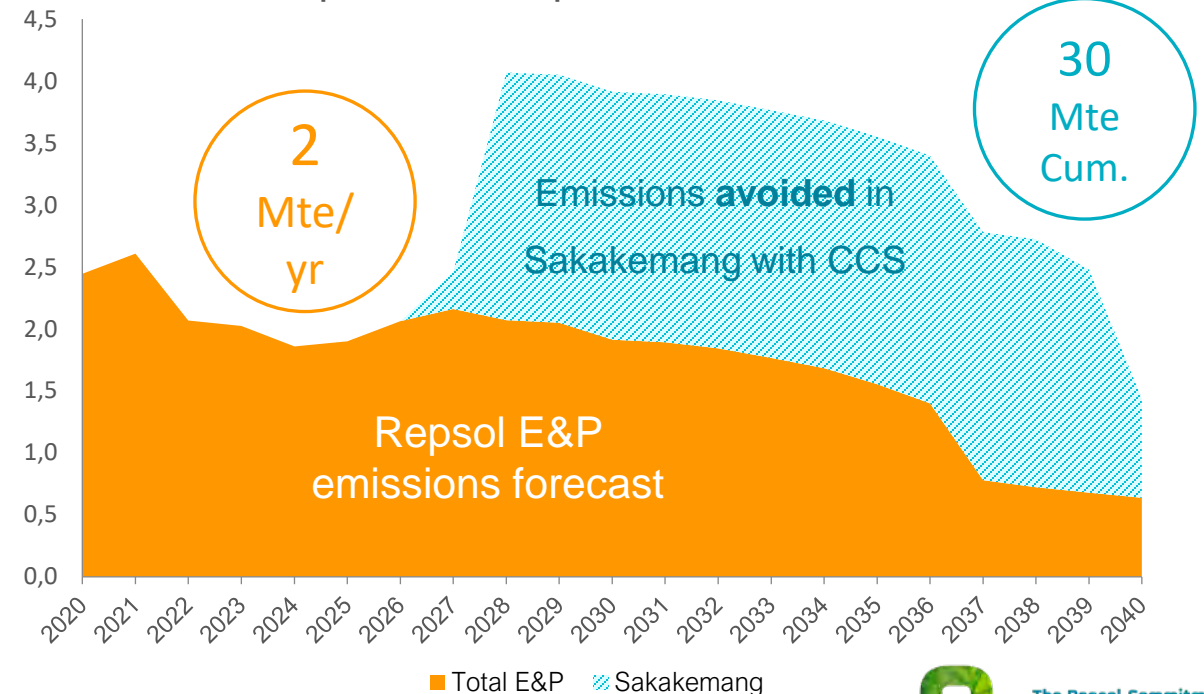
02. Sakakemang Project:

CCS

- Development of a 2TCF gas discovery & simultaneous CCS
- First CCS project deployed by Repsol and First in Indonesia.
- Among largest CCS projects worldwide today (only 6 CCS projects operating).
- Storage will commence in 2027 and will be done in two depleted gas fields of Corridor PSC contract (Gelam & Dayun).
- Main Challenges:**
 - Regulatory Framework, but the MEMR in Indonesia has already created a Task Force with the objective to have CCS regulation in place by the end of 2021.
 - Financial: cost carried by partners, but captured & stored CO₂ could be subject of further trading.

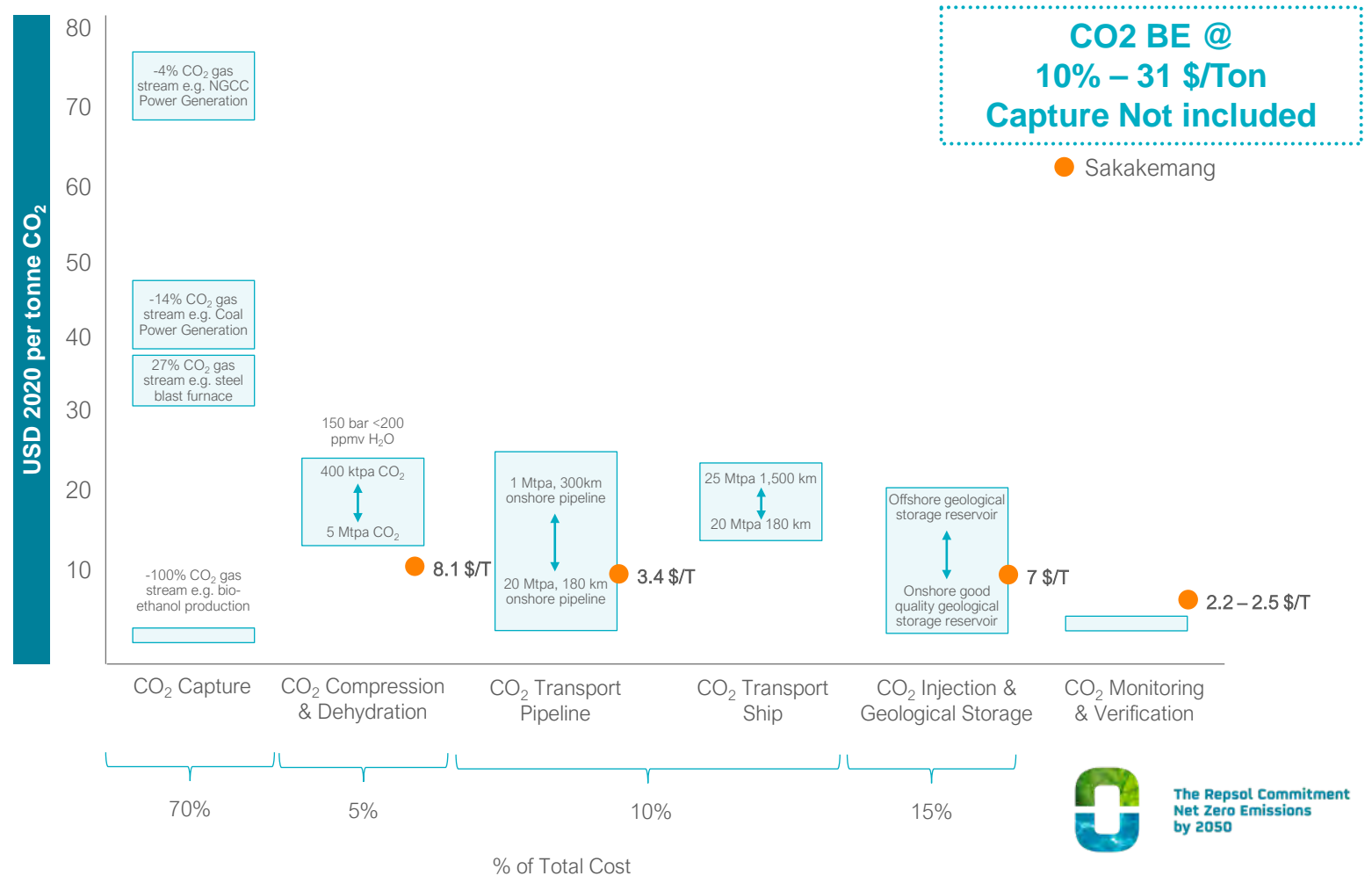


Repsol: Total Upstream emissions



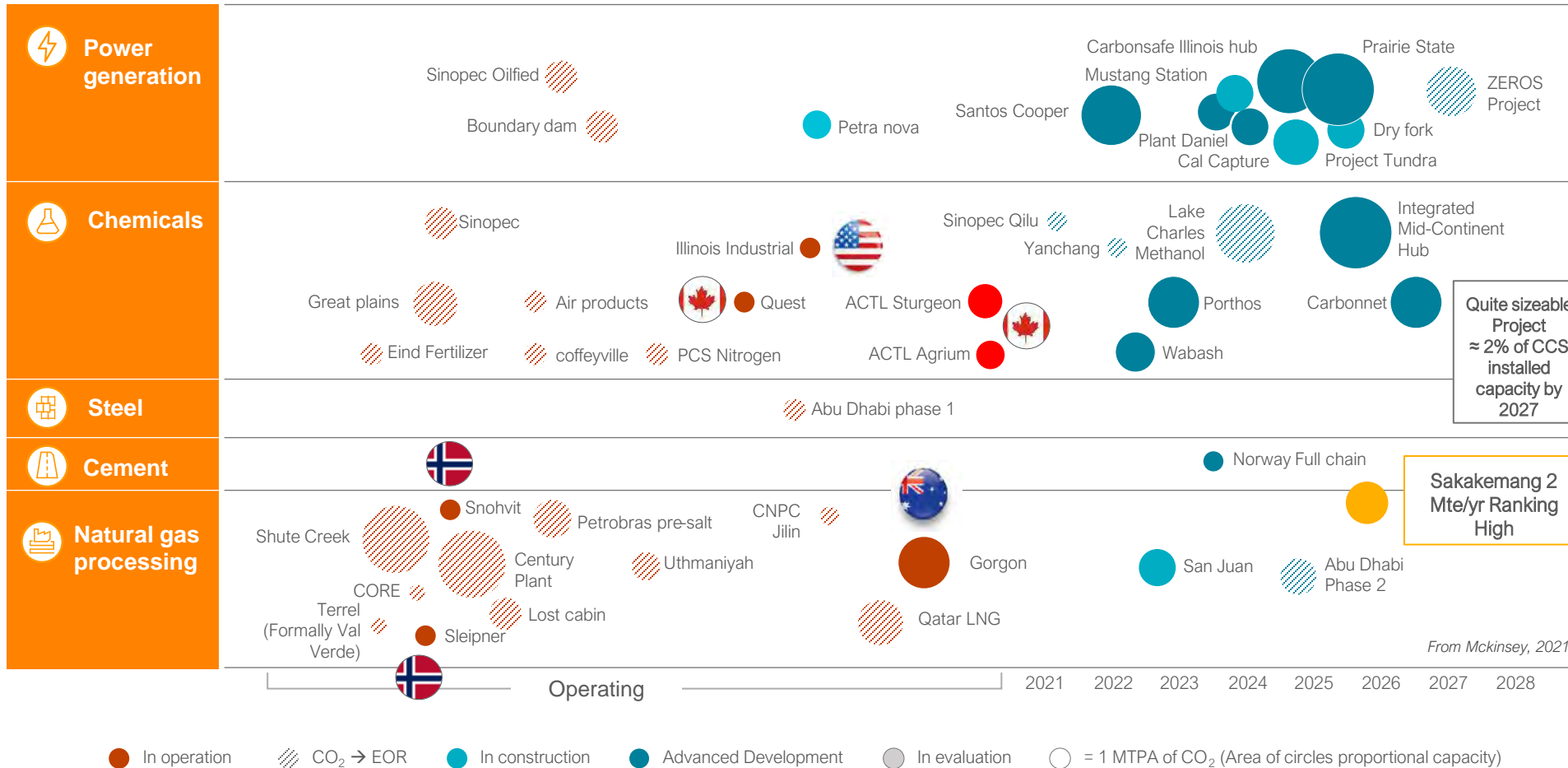
02. Sakakemang Project:

CCS (Carbon Pricing)



02. Sakakemang Project:

CCS worldwide benchmark



Quite sizeable Project
 ≈ 2% of CCS installed capacity by 2027

Sakakemang 2 Mte/yr Ranking High

~40 Mte/ yr
 ↓
 ~110 Mte/ yr

Today only 6 true CCS projects worldwide



02. Sakakemang Project:

CCS Technical Assessment





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Repsol decarbonization
pathway: metrics & targets

Luis Cabra

EMD Energy Transition, Sustainability & Technology
Deputy CEO



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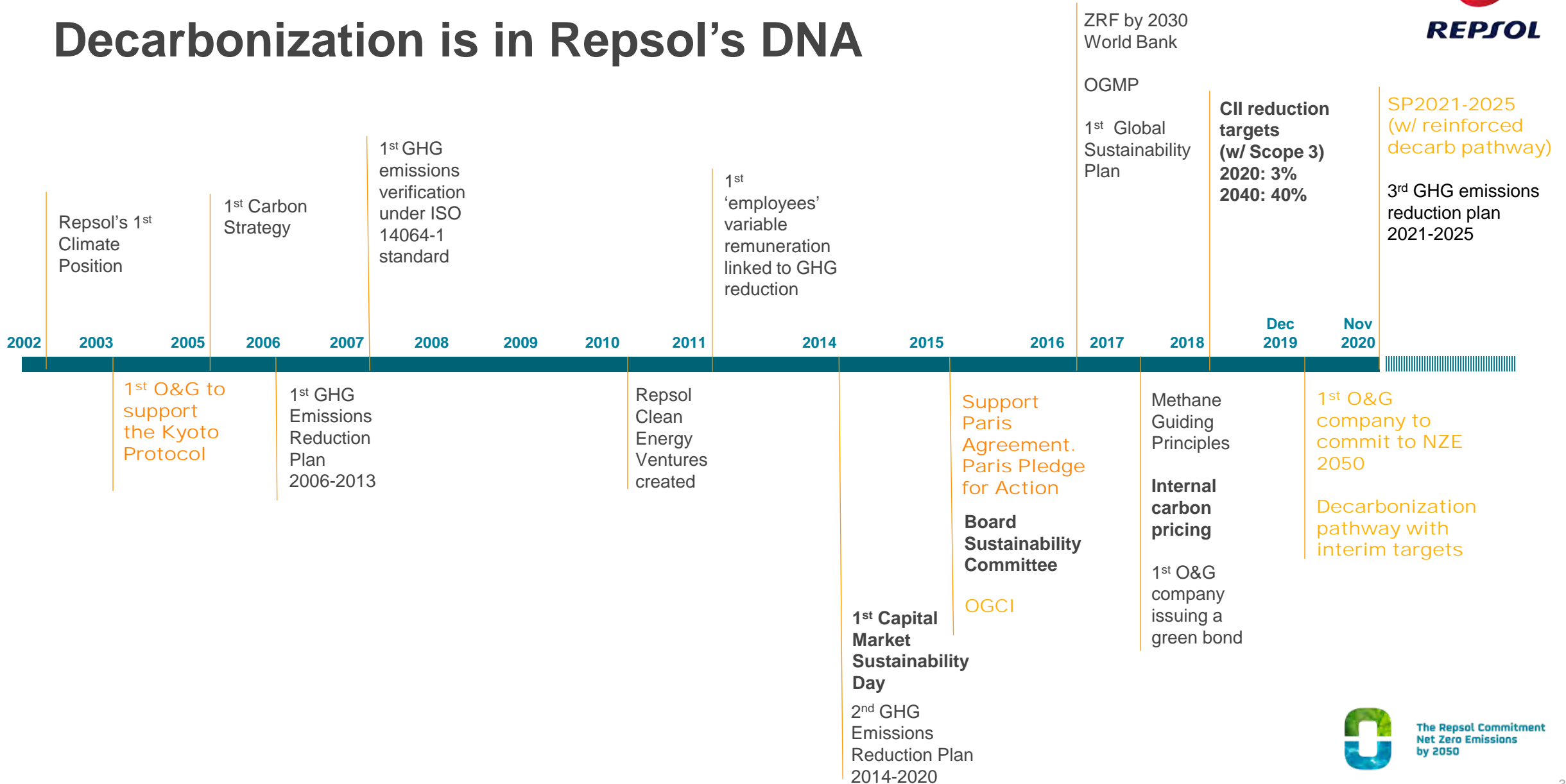
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Decarbonization is in Repsol's DNA



Credibility and engagement with ESG Stakeholders



Leading ESG company

Top grade (2020)
 2/47- ESG Risk Rating Ranking (Integrated O&G 2021)
 ESG rating - 1st quintile (2021)
 Top grade (2020)

36.2%
 Repsol's institutional shares managed by
ESG investors...

VS
16%
 Global Oil and Gas average ⁽¹⁾

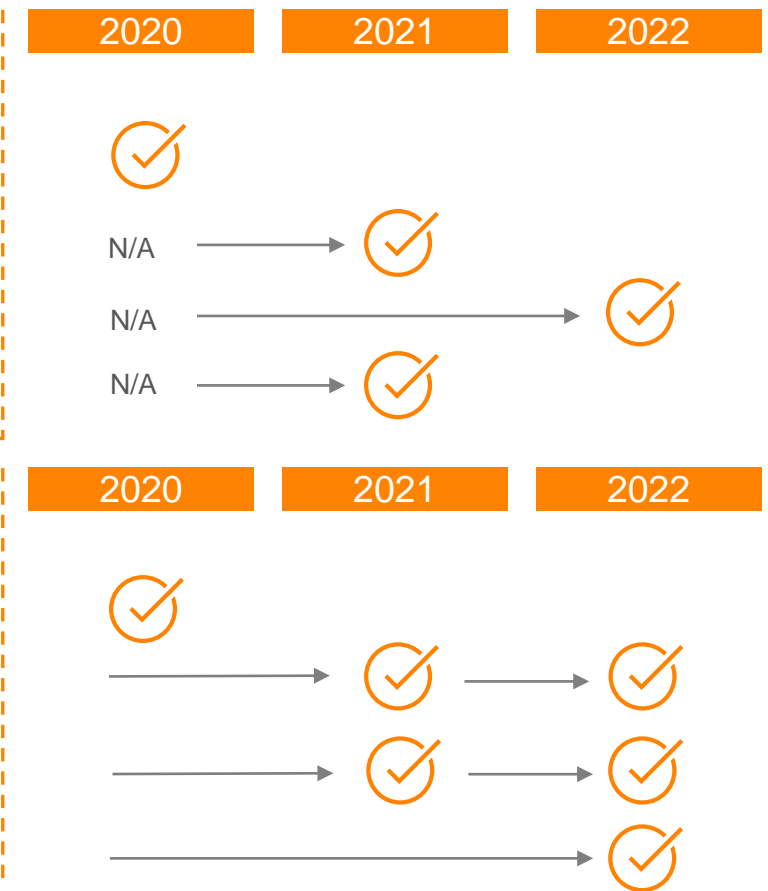
ESG Reporting Roadmap ⁽²⁾

Legal requirements

- Spanish Law 11/2018
- EU Taxonomy on Sustainable Finance ⁽³⁾
- Regulatory Technical Standards ⁽⁴⁾
- Spanish Climate Change Law

Reporting frameworks

- GRI
- SASB
- TCFD
- SCM (WEF-IBC-Big4)



⁽¹⁾ More than 400 companies included in the average
⁽²⁾ Non-financial information in annual Integrated Management Report to Repsol's AGM
⁽³⁾ Mandatory reporting in IMR 2021 for taxonomy eligible activities, in IMR 2022 for taxonomy aligned activities
⁽⁴⁾ Mandatory reporting in 2022 for financial entities



A science-based decarbonization pathway and methodology: a package of KPI's with CII and more...



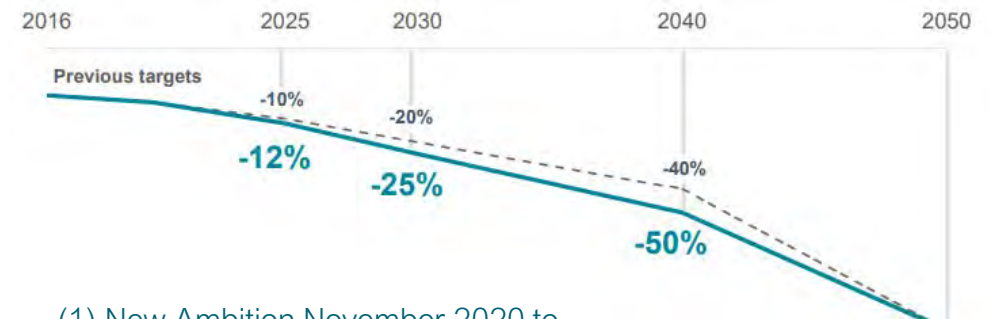
Carbon Intensity Indicator (CII) as key KPI

- Scope 3 based on primary energy
- In-house “substitution method” for renewables to account just for actual emissions avoided
- Interim CII targets, including short term (2020-2025-2030-2040)



- Other specific KPIs and targets: CO₂/barrel E&P, hydrogen & bio volumes, renewable GW, ...
- Transparent additional reporting as requested to allow homogeneous benchmarking vs. peers

Carbon Intensity indicator reduction target [gCO₂/MJ]



(1) New Ambition November 2020 to accelerate the path to Net zero emissions



The Repsol Commitment
Net Zero Emissions
by 2050



**What more do our
ESG stakeholders
request?**

Push (profitable) decarbonization to the limits

Metrics and targets

- Absolute emissions
- More detailed long-term scenario analysis
- Scope 3 methodology
- “Avoided” emissions

Capital allocation to low-carbon

Reinforced climate governance

What may our ESG stakeholders expect from us? (I)

Metrics & Targets



A further reinforced decarbonisation pathway (CII), supported by business ambition

- Renewable H₂
- Renewable power generation

New absolute emissions targets 2030 and methane

- Scope 1+2 operated
- Scope 1+2+3 (net, equity)
- Methane emissions intensity E&P

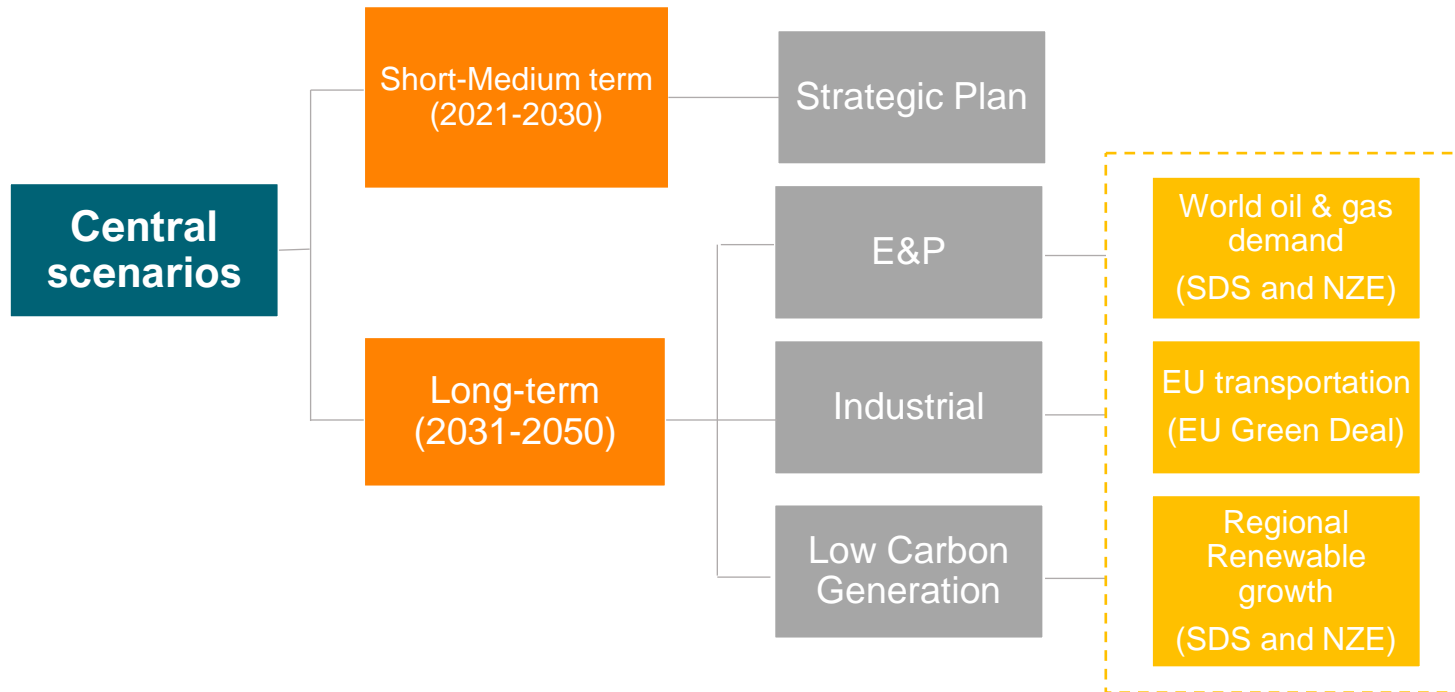
More, better reporting

- Scenario analysis details
- Continue delivering on our reporting roadmap milestones
- Proactive participation: SBTi, Net Zero Standard for O&G (IIGCC), benchmarks (CA100+, ...)
- CII based on sales

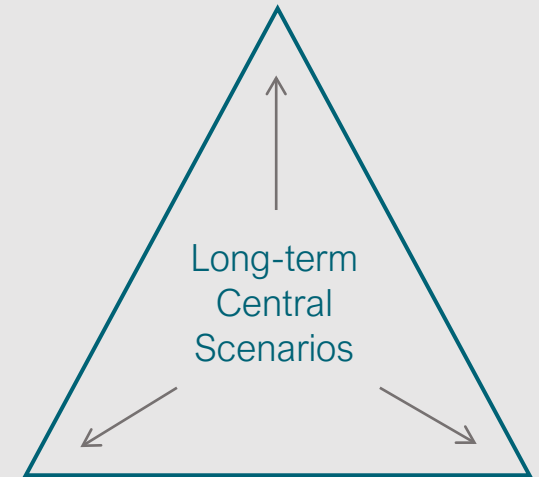


What may our ESG stakeholders expect from us? (II)

Metrics & targets: scenario analysis



Deep Oil Decarbonization Scenario
(Low Carbon Fuels)



Electrification Scenario

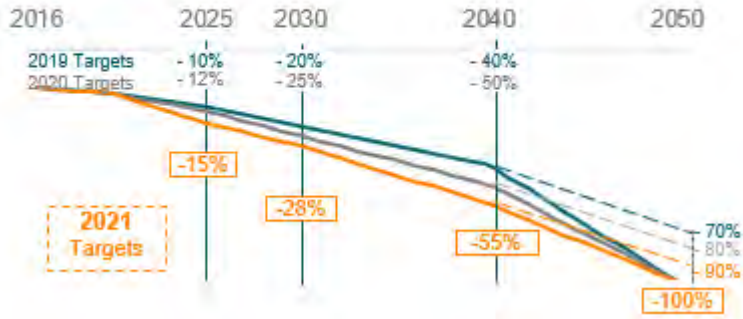
Hydrogen Scenario



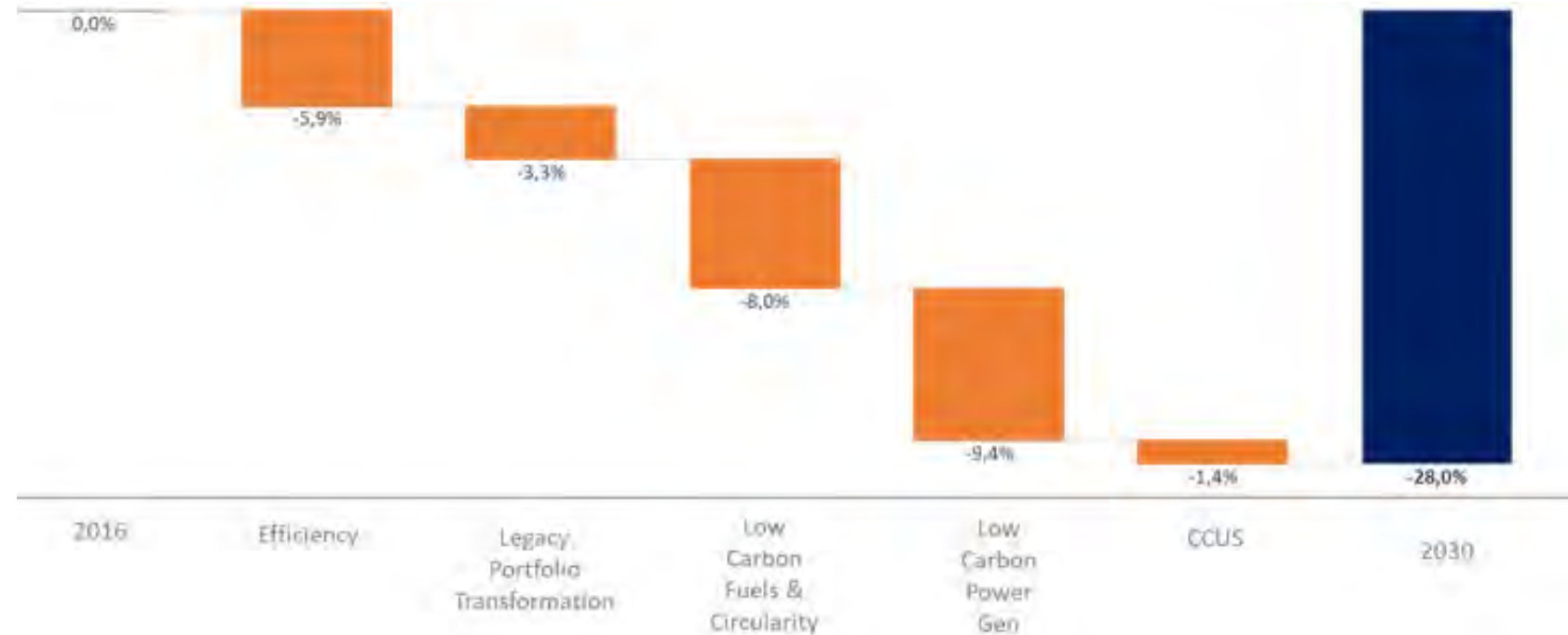
What may our ESG stakeholders expect from us? (III)

Metrics & targets: further reinforced decarbonization path (CII)

Carbon Intensity Indicator reduction targets [gCO₂/MJ]



CII reduction breakdown by lever 2030 vs. 2016 (%)

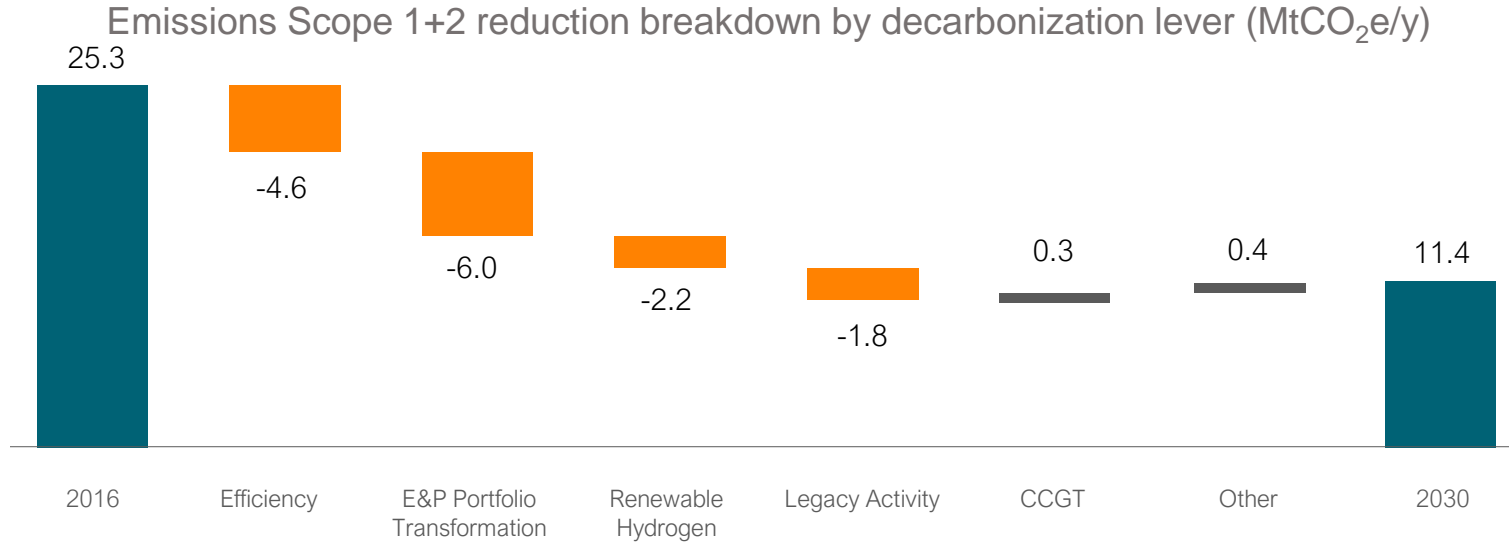


What may our ESG stakeholders expect from us? (IV)

New metrics & targets: absolute emissions

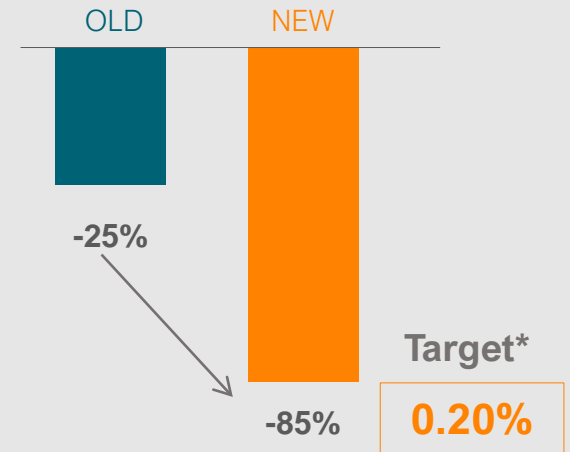
New target: 55% reduction operated emissions (scope 1+2) by 2030

New target: 30% reduction net emissions (scope 1+2+3) by 2030



New metrics & targets: methane intensity*

Reduction 2025 vs 2017 (%)



* Operated methane emissions / marketed gas (% v/v)



What may our ESG stakeholders expect from us? (V)

Climate governance & Capital allocation

Further reinforced climate governance

- The Board to submit climate strategy and targets to an **advisory vote** in the 2022 AGM
- Updated Association evaluation and report (July 2021)

Capital allocation

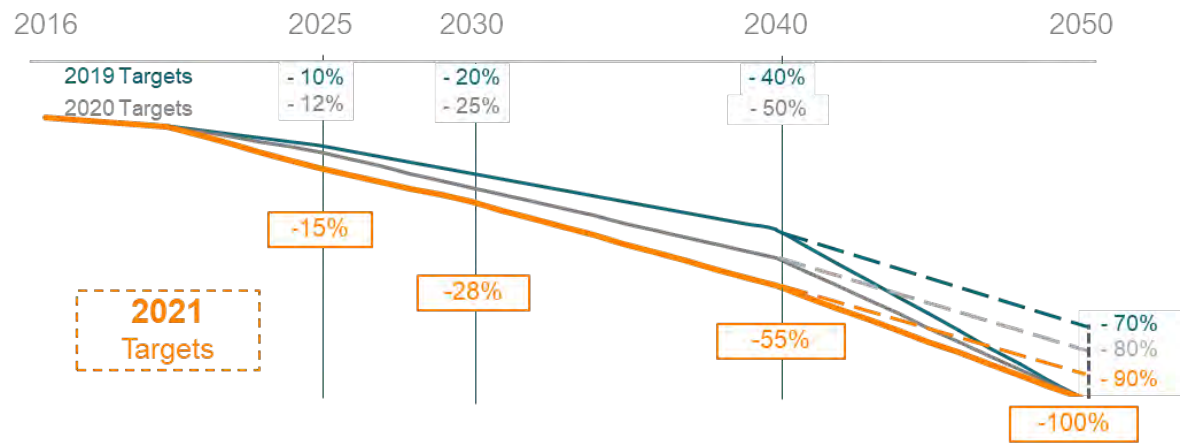
- In-house methodology for capex alignment guidance
 - In place since 2021 (as committed Dec.2019)
- **Internal carbon price** (Carbon incentive for new investments)

Baseline Worldwide			European Union*		
2025	2030		2025	2030	2040
60	60	New (\$/t)	70	100	
40	40	Current (\$/t)	40		70

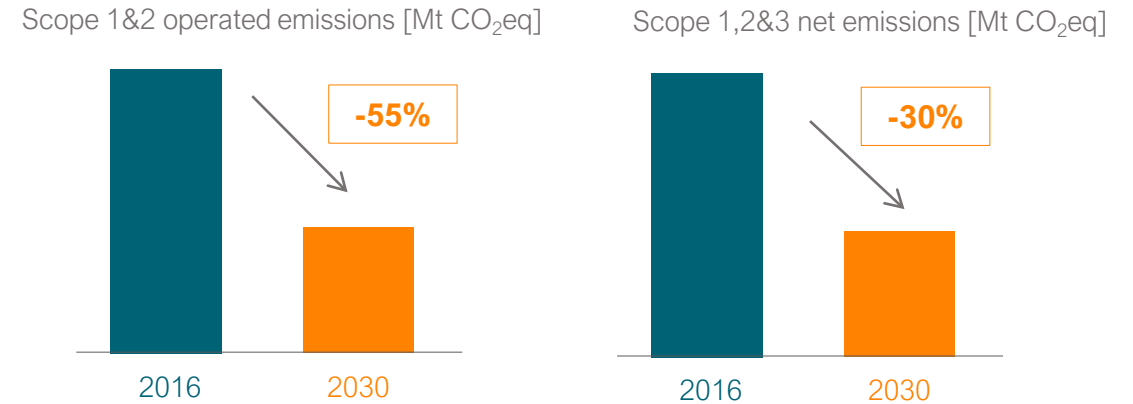
* Based on EU ETS projections. For other regulated markets that may evolve, a similar methodology would be applied

Summary: Renewed decarbonization ambition

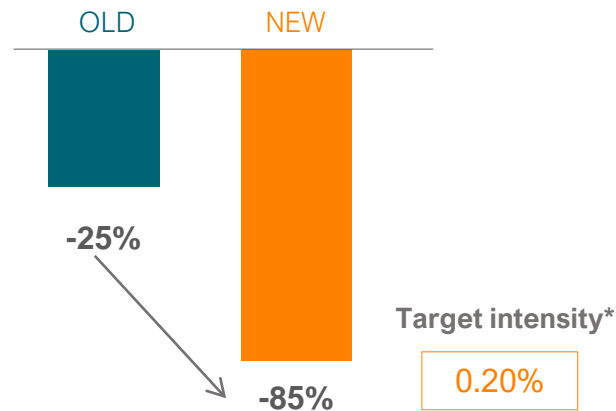
Carbon Intensity Indicator reduction targets [gCO₂/MJ]



Absolute emissions reduction (%)



Methane intensity reduction 2025 vs 2017 (%)



* Operated methane emissions / marketed gas (% v/v)

Reporting, Governance, Capital allocation

- Scenario analysis, benchmarkable metrics
- Advisory vote on climate strategy in the 2022 AGM
- Higher internal carbon price for new investments



Low Carbon Day

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The Repsol Commitment
Net Zero Emissions
by 2050

