



REPSOL



Transforming & Expanding **Chemicals**

José Luis Bernal

ED REPSOL CHEMICALS



Disclaimer

ALL RIGHTS ARE RESERVED
© REPSOL, S.A. 2019

The information included in this document is published pursuant to the provision of article 226 of the Spanish Securities Market Law.

This document contains statements that Repsol believes constitute forward-looking statements which may include statements regarding the intent, belief, or current expectations of Repsol and its management, including statements with respect to trends affecting Repsol's financial condition, financial ratios, results of operations, business, strategy, geographic concentration, production volume and reserves, capital expenditures, costs savings, investments and dividend payout policies. These forward-looking statements may also include assumptions regarding future economic and other conditions, such as future crude oil and other prices, refining and marketing margins and exchange rates and are generally identified by the words "expects", "anticipates", "forecasts", "believes", "estimates", "notices" and similar expressions. These statements are not guarantees of future performance, prices, margins, exchange rates or other events and are subject to material risks, uncertainties, changes and other factors which may be beyond Repsol's control or may be difficult to predict. Within those risks are those factors described in the filings made by Repsol and its affiliates with the "Comisión Nacional del Mercado de Valores" in Spain and with any other supervisory authority of those markets where the securities issued by Repsol and/or its affiliates are listed.

Repsol does not undertake to publicly update or revise these forward-looking statements even if experience or future changes make it clear that the projected performance, conditions or events expressed or implied therein will not be realized.

Some of the figures included in this document are considered Alternative Performance Measures [APM] in accordance with the guidelines of the European Securities and Markets Authority [ESMA]. Further information on APMs [definition, purpose, reconciliation with financial statement figures] may be found on Repsol's corporate [website](#).

This document does not constitute an offer or invitation to purchase or subscribe shares, pursuant to the provisions of the Royal Legislative Decree 4/2015 of the 23rd of October approving the recast text of the Spanish Securities Market Law and its implementing regulations. In addition, this document does not constitute an offer to purchase, sell, or exchange, neither a request for an offer of purchase, sale or exchange of securities in any other jurisdiction.

The information contained in the document has not been verified or revised by the External Auditors of Repsol.

AGENDA

- Downstream Strategy & Chemicals
- Repsol Chemicals: Position
- Repsol Chemicals: Transformation and Resilience
- Repsol Chemicals: Strategy



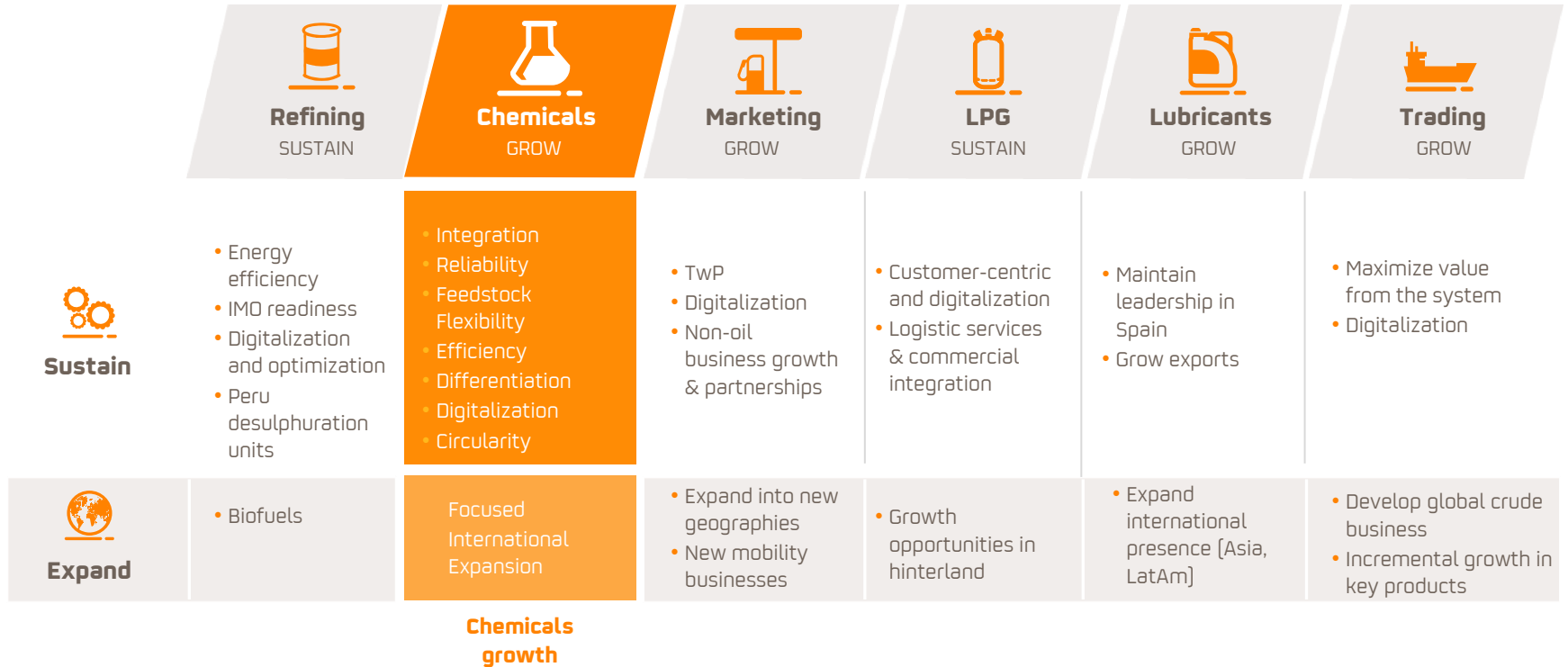
AGENDA

- Downstream Strategy & Chemicals
- Repsol Chemicals: Position
- Repsol Chemicals: Transformation and Resilience
- Repsol Chemicals: Strategy



Downstream Strategy

Chemicals as a growth priority



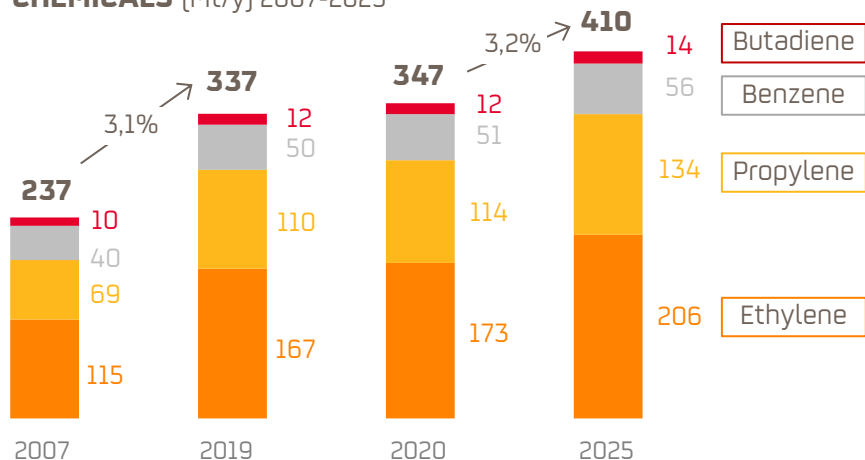
RATIONAL for
Chemicals Growth

01 Growing
Demand

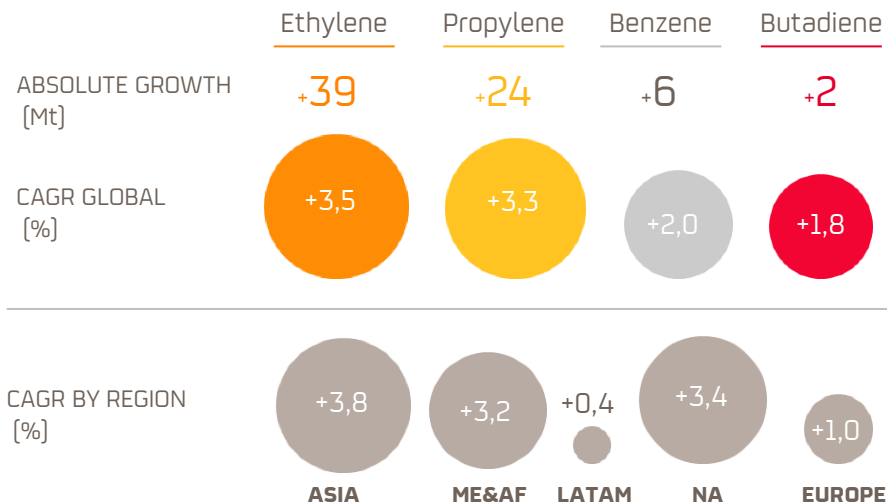
02 Aligned with Energy
Transition

03 Efficient & Integrated
Business

GLOBAL DEMAND OF SELECTED BASE CHEMICALS [Mt/y] 2007-2025



PERIOD 2019- 2025



~40 Mt/y of Ethylene new production needed in next 6 years
[equivalent to ~45 new Steam Crackers of 1 Mt/y capacity at 90% utilization rate]

RATIONAL for
Chemicals Growth

01 > Growing
Demand

02 > Aligned with Energy
Transition

03 > Efficient & Integrated
Business

PLASTICS ARE PART OF THE SOLUTION: Save water, energy and CO2 emissions.

Examples:

Agriculture: The implementation of micro-irrigation allows saving 30% to 60% of water compared to traditional methods

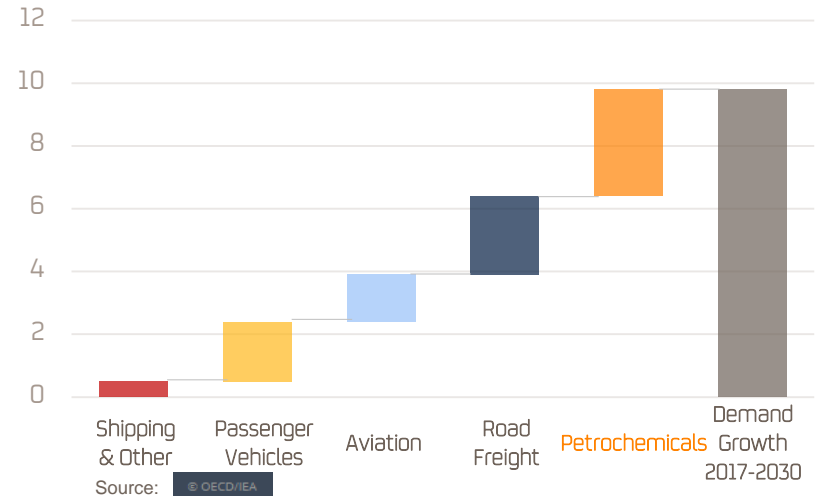
Transport: Thanks to plastics vehicles emit less CO2. On average, 15 % of a car is made of plastic components. This allows to save 750 liters of fuel in 150,000 km

The plastic components of an airplane lighten its weight and allow saving 20% of fuel



Petrochemicals: major driver of oil demand growth

Oil demand Growth by sector (Mbbbl/d), 2017-2030



AGENDA

- Downstream Strategy & Chemicals
- Repsol Chemicals: Position
- Repsol Chemicals: Transformation and Resilience
- Repsol Chemicals: Strategy



Repsol Chemicals

Key figures



MAIN HIGHLY
INTEGRATED &
FLEXIBLE
PETROCHEMICAL
SITES

AVERAGE EBITDA
2015-2018

~ €600M/y

SALES

2,800 Mt/y



AVERAGE ROACE
2015-2018

>25%



>1000

RELEVANT
CUSTOMERS



STAFF

~ 2,000



HIGH COMPLEX
PRODUCTION & LOGISTICS
[~350 DIFFERENT GRADES
/LEAN PRODUCTION /
MULTI-MODAL DELIVERY]



SALES IN MORE THAN
85 COUNTRIES



~10th-15th

WORLD PRODUCER IN
HIGH VALUE PRODUCTS
[PO/Polyols, Rubber, EVA]

Repsol Chemicals

Strong and Integrated position in Spain and Portugal



Chemical Site



Own refinery



Third-party refinery

Total Production Capacity:
4,750 kt/y



TARRAGONA/SPAIN
(3,050 kt/y)

Base Chemicals (1,400 kt/y)

- Ethylene [kt/y]: 702
- Propylene [kt/y]: 372
- Butadiene [kt/y]: 120
- Benzene [kt/y]: 190

Derivative Chemicals (1,650 kt/y)

- PE [kt/y]: 363
- PP [kt/y]: 400
- Styrene [kt/y]: 450
- Propyl.Oxide [kt/y]: 200
- Polyols [kt/y]: 154
- Propyl.Glycols [kt/y]: 63

Base Chemicals (330 kt/y)

- Ethylene [kt/y]: 102
- Propylene [kt/y]: 110
- Butadiene [kt/y]: 15
- Benzene [kt/y]: 100

Derivative Chemicals (310 kt/y)

- LDPE+EVA [kt/y]: 135
- PP [kt/y]: 105
- Polyols [kt/y]: 70

PUERTOLLANO/SPAIN
(650 kt/y)

Base Chemicals (735 kt/y)

- Ethylene [kt/y]: 410
- Propylene [kt/y]: 222
- Butadiene [kt/y]: 50
- ETBE/MTBE [kt/y]: 50

Derivative Chemicals (295 kt/y)

- PE [kt/y]: 295

SINES/PORTUGAL
(1,050 kt/y)

BASE CHEMICALS:

3 mixed-feed Crackers with feedstock flexibility

INTERMEDIATES:

co-production PO/SM process [proprietary technology] & polyols / glycols

POLYOLEFINS:

3 SITES / 12 PLANTS / 25 UNITS

Wide variety of processes and products

Dynasol Group

Key figures



Dynasol is a **50/50** strategic alliance between Repsol and Grupo KUO [Mexico] in the **Synthetic Rubber** business with plants in Europe, America and China



RELIABLE AND STRATEGICALLY LOCATED PLANTS TO SUPPLY THE AMERICAS, EUROPE AND ASIA

AVERAGE EBITDA 2016-2018

~€100M/y

SALES
500 Kt/y 

AVERAGE ROACE 2016-2018

~15% 

>800
RELEVANT CUSTOMERS 

STAFF

 ~ 1000

HIGH COMPLEX PRODUCTION & LOGISTICS

[~200 DIFFERENT GRADES / MULTI-MODAL DELIVERY]



SALES IN MORE THAN
90 COUNTRIES



~10th

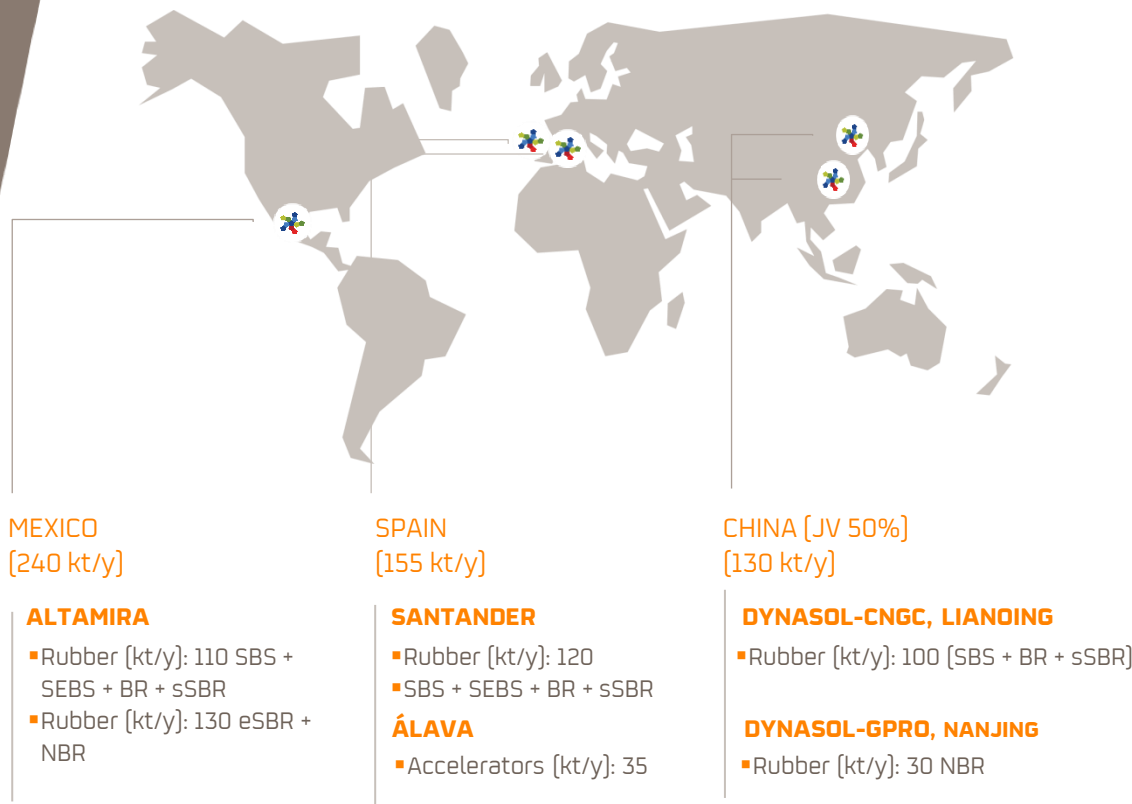
WORLD PRODUCER OF SYNTHETIC RUBBER [SPECIALTIES]

Dynasol Group

World reference in
Synthetic Rubber

One of the largest producer
in the world (10th) of
Synthetic Rubber based
on Styrene and Butadiene
and the 2nd largest
producer of **Rubber
Chemicals** in Europe

Total Production Capacity:
525 kt/y



MEXICO
[240 kt/y]

ALTAMIRA

- Rubber [kt/y]: 110 SBS + SEBS + BR + sSBR
- Rubber [kt/y]: 130 eSBR + NBR

SPAIN
[155 kt/y]

SANTANDER

- Rubber [kt/y]: 120
- SBS + SEBS + BR + sSBR

ÁLAVA

- Accelerators [kt/y]: 35

CHINA [JV 50%]
[130 kt/y]

DYNASOL-CNGC, LIANOING

- Rubber [kt/y]: 100 (SBS + BR + sSBR)

DYNASOL-GPRO, NANJING

- Rubber [kt/y]: 30 NBR

Repsol Chemicals

Diversified Portfolio committed with improving Life Standards and with Energy Transition



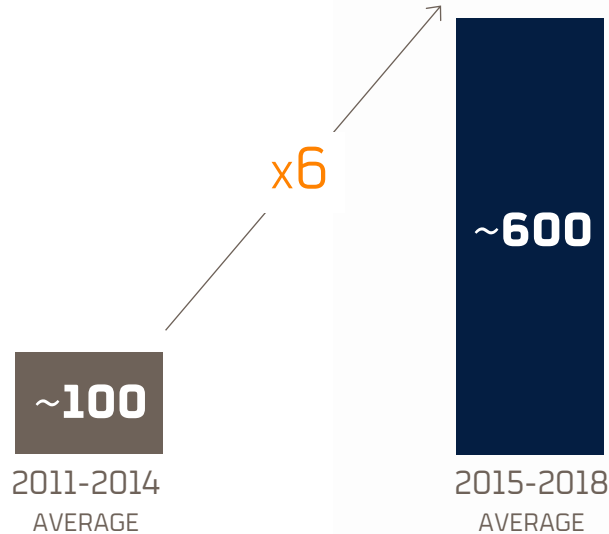
AGENDA

- Downstream Strategy & Chemicals
- Repsol Chemicals: Position
- Repsol Chemicals: Transformation and Resilience
- Repsol Chemicals: Strategy

Repsol Chemicals

Transformation to a Resilient Business

EBITDA [€M/y]



Relevant improvement of the business as a consequence of market conditions and successful transformation

Levers for Transformation

MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION

SAFETY & ENVIRONMENT

Repsol Chemicals

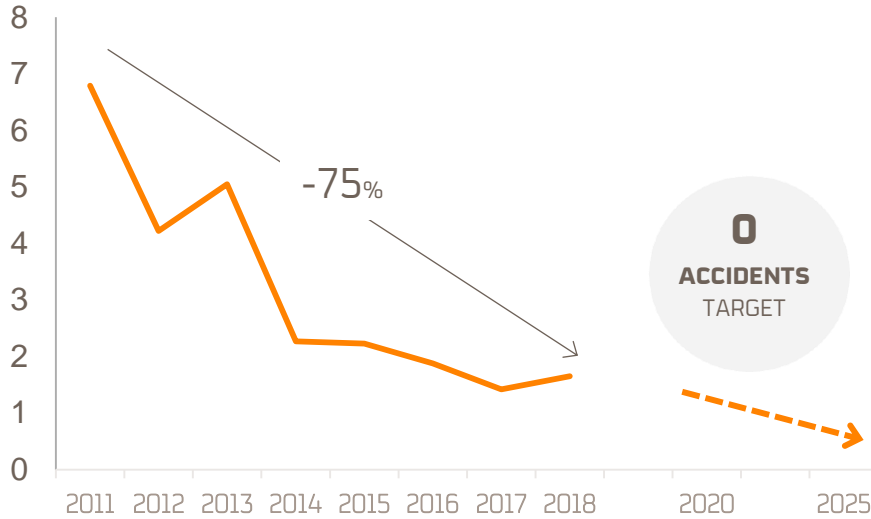
Levers for transformation

MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION

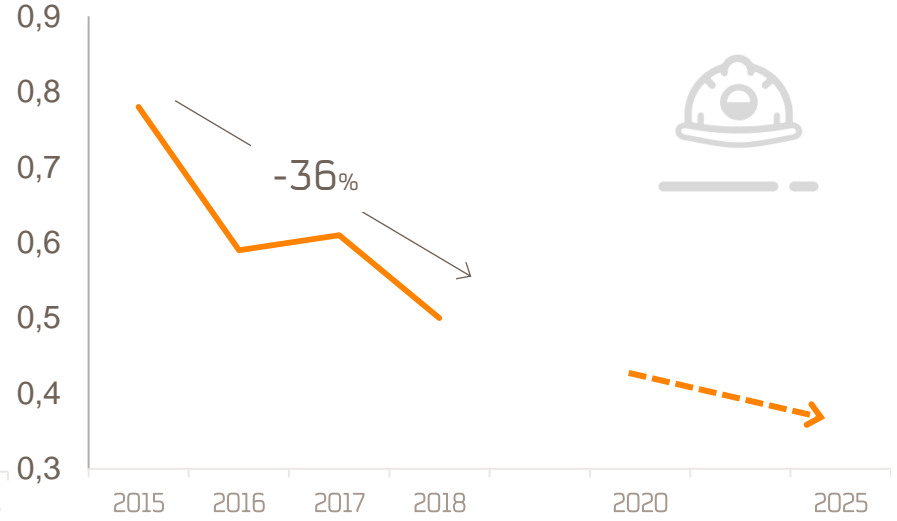
SAFETY & ENVIRONMENT

PERSONNEL ACCIDENTALITY INDICATOR [(IFT)

Total accidents per million hours worked



Process Safety Event Rates [Tier 1&Tier 2]



IFT: Total accidents per million hours worked

Tier 1 Process Safety Event is a loss of primary containment (LOPC) with the greatest consequence.

Tier 2 Process Safety Event is a LOPC with lesser consequence

Repsol Chemicals

Levers for transformation

MARKET

INTEGRATION

RELIABILITY

FEEDSTOCK FLEXIBILITY

EFFICIENCY

DIFFERENTIATION & CUSTOMER ORIENTATION

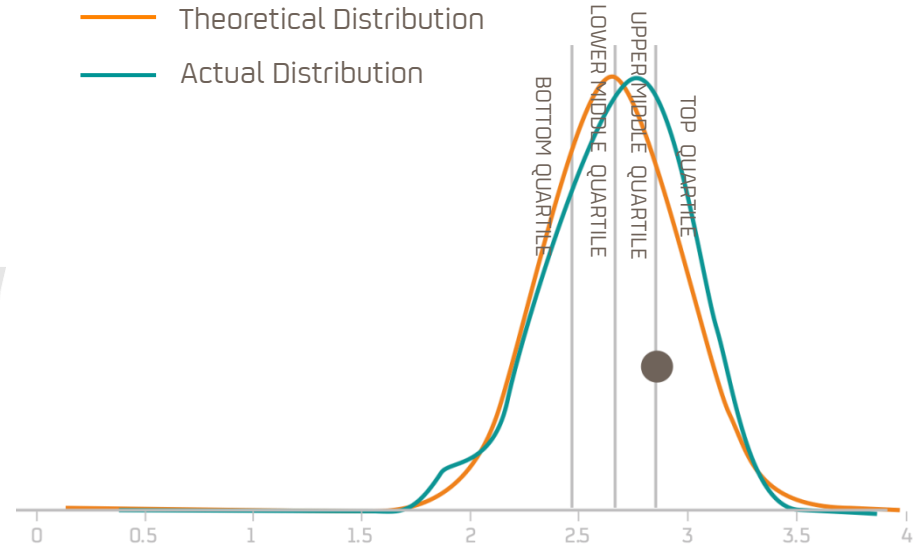
SAFETY & ENVIRONMENT

Rating received by insurers for
the assets of REPSOL
Chemical Business:
Top / Upper class Assets

**Reinsurance companies assess the quality
of assets**

Categories evaluated:

- Hardware: assets
- Software: Management systems
- Emergency Control



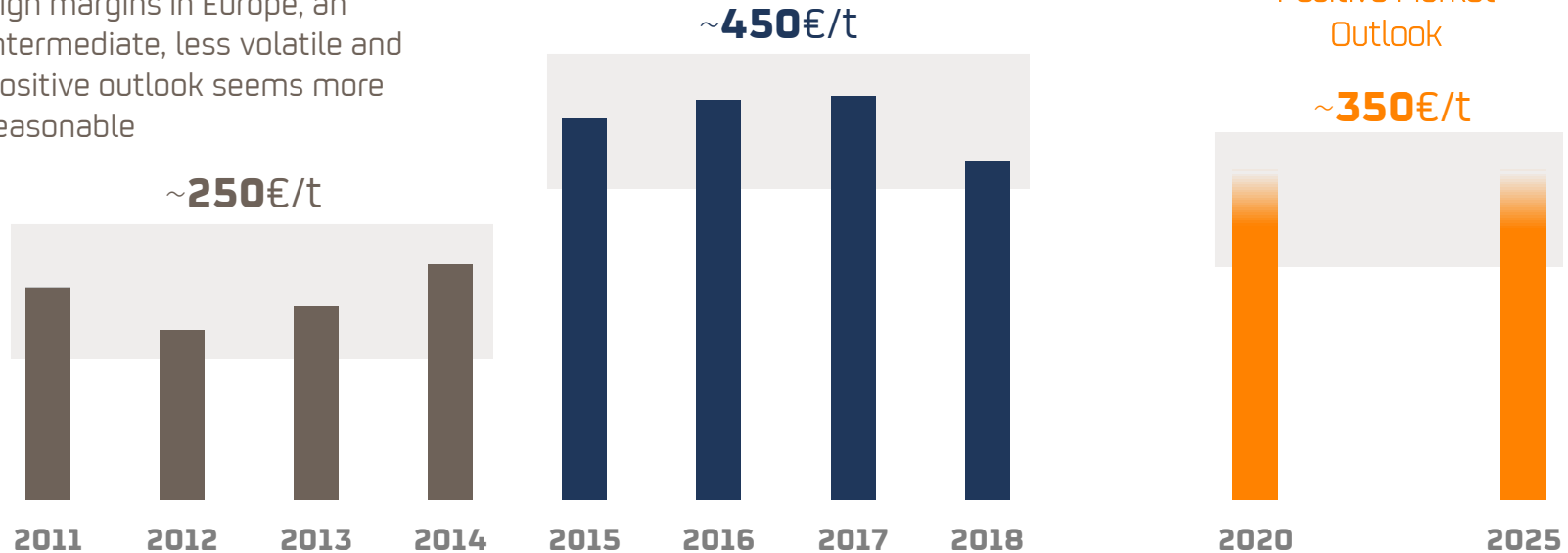
Repsol Chemicals

Levers for transformation

MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION
SAFETY & ENVIRONMENT

INTERNATIONAL MARGINS (EUROPE) €/t

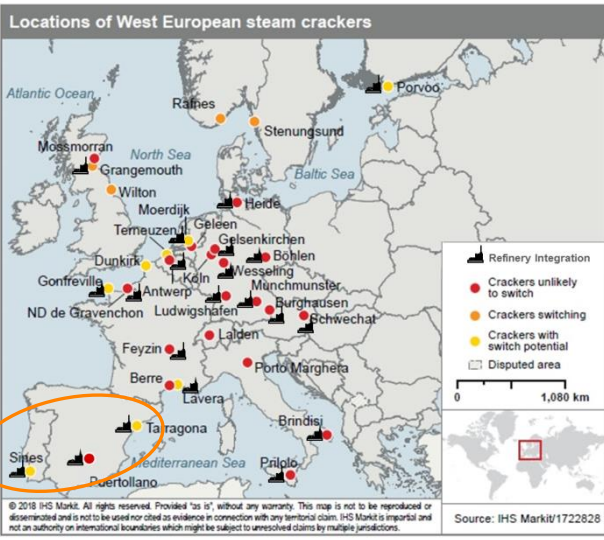
After a period of extremely low and high margins in Europe, an intermediate, less volatile and positive outlook seems more reasonable



Repsol Chemicals

Levers for transformation

MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION
SAFETY & ENVIRONMENT



REPSOL Chemical Business enjoys 3 Positive Levels of Integration



Operational efficiency through 100% integration with refineries [Cracker-Refinery Integration in Europe is ~50%]



Despite non being the biggest supplier: Integration of wide derivatives portfolio [commercial synergies]



Integration between Base and Derivative Petrochemicals [integrated margin management]

REPSOL Petrochemical Complexes are integrated with Refineries [two of them of REPSOL] with an estimated impact of ~€80M/y

Repsol Chemicals

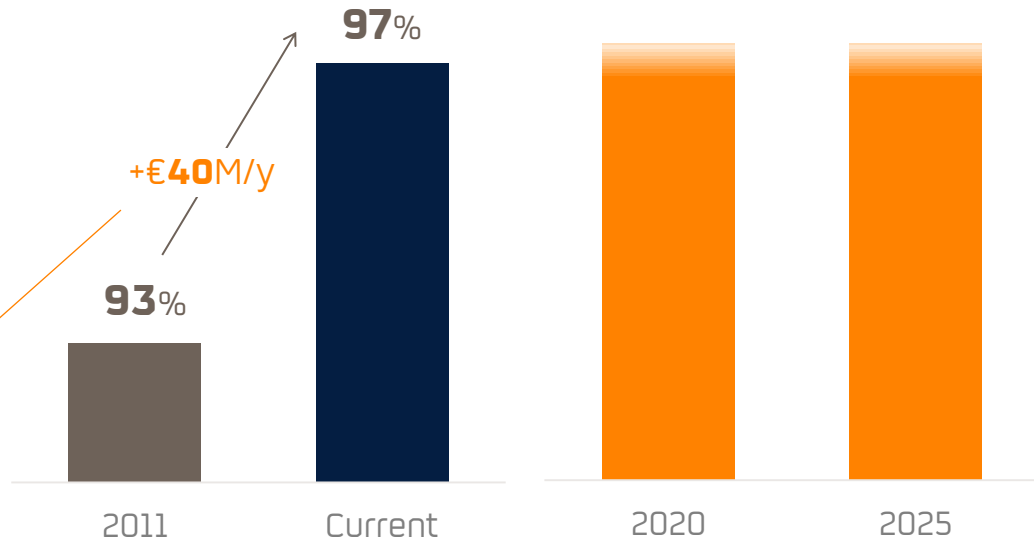
Levers for transformation

MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION
SAFETY & ENVIRONMENT

RELIABILITY INDEX [%]

High reliability has enabled Repsol Chemicals to take advantage of the high margin scenario in a context of capacity limitations in Europe due to unplanned outages

- Integrated Operations with Refining
- Digital and Innovation Tools
- Technological collaboration agreements with industrial experts



Repsol Chemicals

Levers for transformation

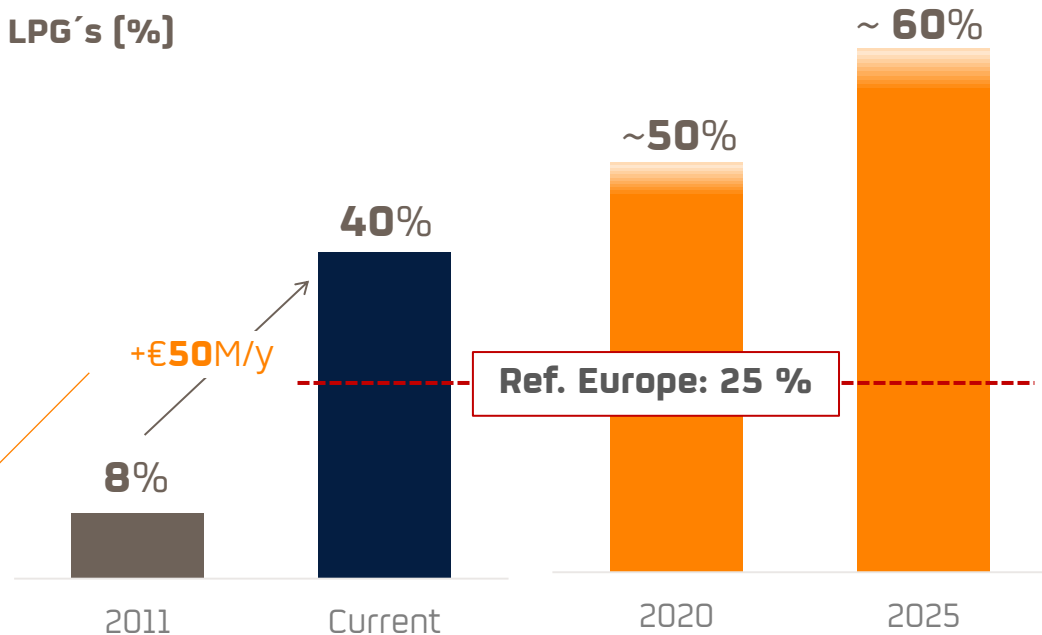
MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION

SAFETY & ENVIRONMENT

LIGHT FEEDSTOCK TO CRACKERS – LPG´s [%]

% Light Feedstock: Crackers have evolved to get a ~35% light feedstock with potential to reach ~60 %

Investments in logistics and units (splitters, ...) to allow increased regular supply of LPG´s



Repsol Chemicals

Levers for transformation

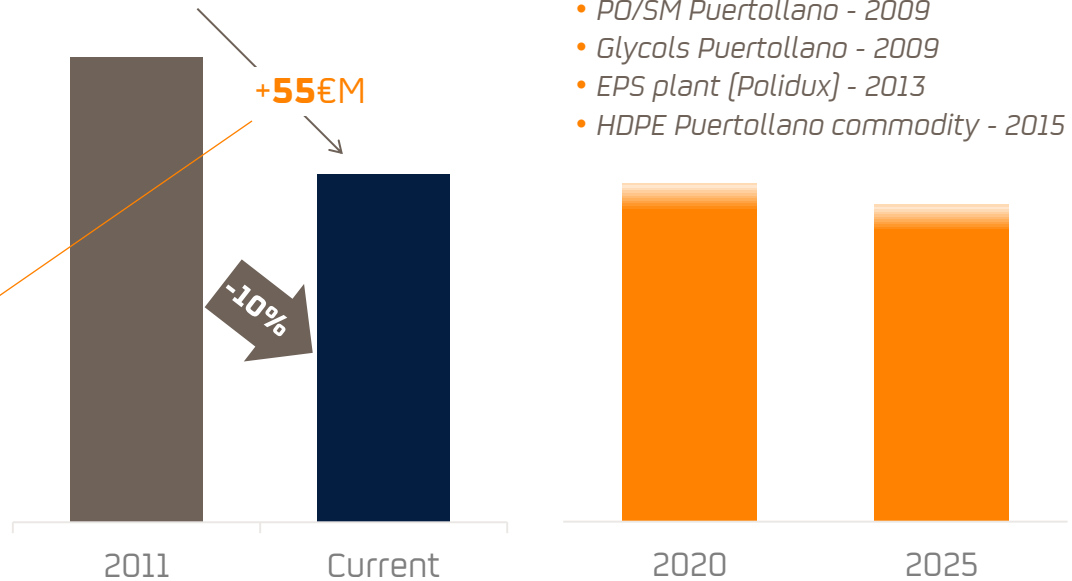
MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION

SAFETY & ENVIRONMENT

ENERGY CONSUMPTION

Asset restructuring and energy efficiency investments have optimized the business

Investments (~€100M) in size optimization and efficiency projects



Restructuring/Closures

- ACN/ MMA Tarragona - 2009
- PO/SM Puertollano - 2009
- Glycols Puertollano - 2009
- EPS plant (Polidux) - 2013
- HDPE Puertollano commodity - 2015

Repsol Chemicals

Levers for transformation

MARKET INTEGRATION RELIABILITY FEEDSTOCK FLEXIBILITY EFFICIENCY DIFFERENTIATION & CUSTOMER ORIENTATION

SAFETY & ENVIRONMENT

65%

of Derivatives portfolio
are non-commoditized
product adding €50
M/y to EBITDA

150

new grades
developed in
past 5 years

90%

of lean Production
[ad-hoc]



Certified by FSSC 22000

[Food Safety System Certification] for all
plastic polymers produced in our
petrochemical complex



Repsol GridEffect® Repsol Ultraclean® Repsol Reciclex®
Repsol ImpactO® Repsol Resistex®

Repsol Chemicals

Levers for transformation

MARKET

INTEGRATION

RELIABILITY

FEEDSTOCK FLEXIBILITY

EFFICIENCY

DIFFERENTIATION & CUSTOMER ORIENTATION

SAFETY & ENVIRONMENT

Highly Acknowledge and Recognition from our Costumers

These awards are bestowed according to the votes of all the customers integrated in the association



2016

Repsol was awarded with a double recognition by Polymers for Europe Alliance, a initiative of the European Plastics Converters association [EuPC]: **innovation overarching award and the best High Density Polyethylene Producer**



2017

Repsol was bestowed the **best High Density Polyethylene Producer Award** at European Plastics Converters [EuPC]



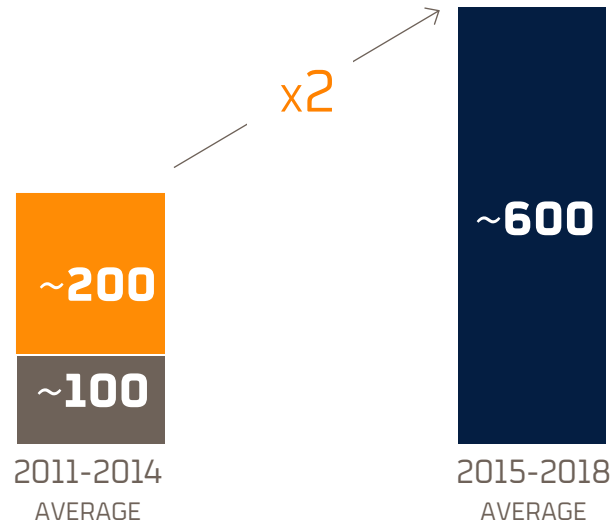
2018

Repsol was bestowed the **best Polypropylene Producer Award** at European Plastics Converters [EuPC]

Repsol Chemicals

Transformation to a resilient business

EBITDA (€M/y)



Impact of
sustainable Internal
Levers developed
during the period:

~ €200M/y

Repsol Chemicals has evolved to a more resilient business,
less exposed to International Margins and Cycles

AGENDA

- Downstream Strategy & Chemicals
- Repsol Chemicals: Position
- Repsol Chemicals: Transformation and Resilience
- Repsol Chemicals: Strategy

Repsol Chemicals Strategy

Transform & Expand



Expand

International Growth in
our Hinterland or with
High Value Products:
POSM/Polyols, EVA,
Rubber, ...

Transform

INTEGRATION

RELIABILITY

FEEDSTOCK
FLEXIBILITY

EFFICIENCY

DIFFERENTIATION &
CUSTOMER ORIENTATION

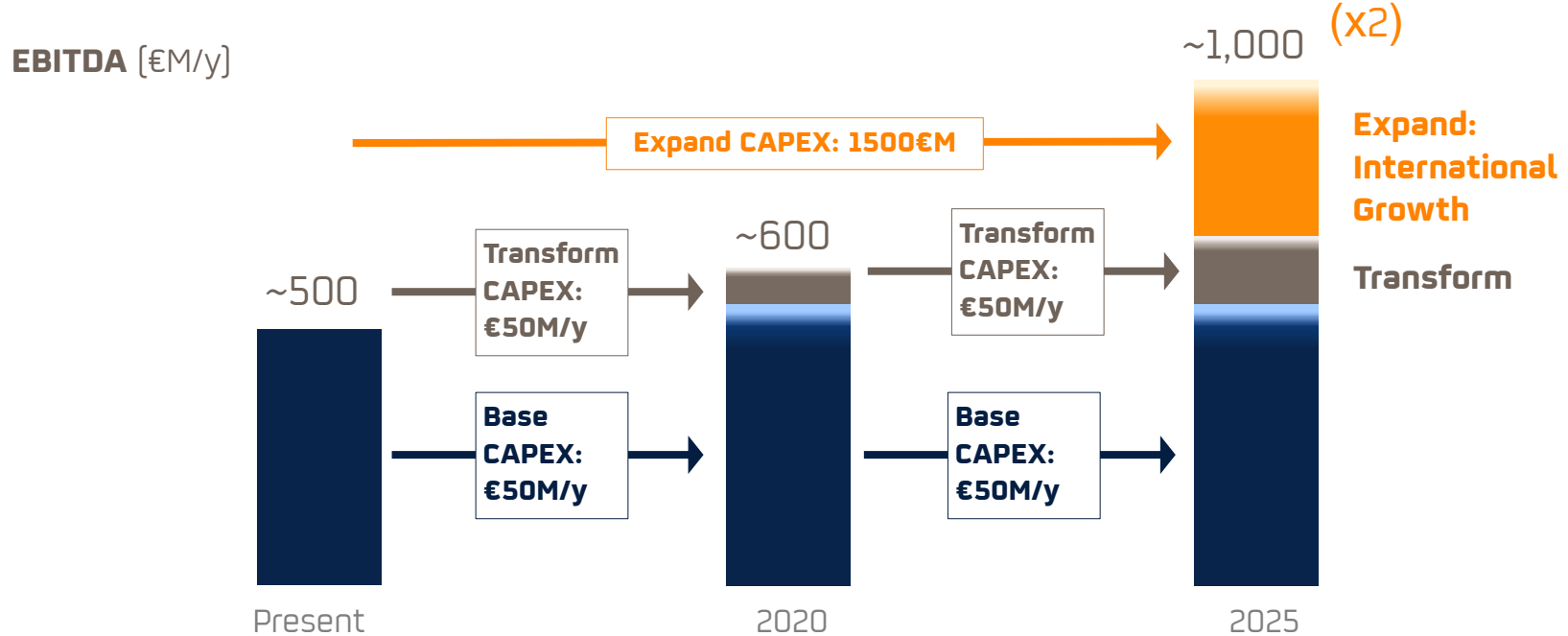
DIGITALIZATION

CIRCULARITY

SAFETY & ENVIRONMENT

Repsol Chemicals Strategy

Ambitious Targets



Repsol Chemicals Strategy

Transform Levers

RELIABILITY



- Crackers reliability improvement Program
- Maintenance Improving Program
- Operational Training System
- New Control Panel 2.0 (HMI)

FEEDSTOCK FLEXIBILITY



- Cracker competitiveness
- LPG feedstock Flexibility Increase
- Alternative Cracker Feedstocks
- Crackers capacity increase

EFFICIENCY



- SICLOS
- Supply Chain E2E optimization
- Road/Rail load and unload automat.
- Gas Turbines Renew Program

**More than 40
Transformation Projects**
in different maturity stages
with Global Governance.
CAPEX: ~ €50M/y
EBITDA 2025: ~ €150M/y



DIFFERENTIATION & CUSTOMER ORIENTATION

- UHMWPE
- PP VHI Auto
- High Voltage Cables
- Healthcare portfolio
- Products for 3D Print
- Pricing Model
- Lean Operation Deployment



DIGITALIZATION

- Control Tower
- Track&Trace
- Non-linear process polymer optimization
- Lot Genealogy
- Sales Digital Enablement



CIRCULARITY

- Mechanical Recycling (Reciclex)
- Chemical Recycling Pyrolysis
- Chemical Recycling Gasification

Repsol Chemicals Strategy

Expand

Growth in a global context, driven by 5 key principles

1 | **Leverage proprietary technology and Technical & Commercial capabilities**

POSM/Polyols Technology already assessed. Own Technical capabilities in EVA, Rubber, ...

2 | **Maximize integration**

Integration along the product chain to avoid intermediate products market risk. Integrating as much products as possible in the same location looking for synergies

4 | **Global scale**

Tier 1 position [top 5] in key products, with presence in North America and Asia, to leverage advantages of market leadership and scale

3 | **Low risk approach**

Minimize exposure to riskier countries. Prioritize first level partners for JV's

5 | **Recycling and Circularity**

Develop mechanical and chemical recycling solutions



Sizable opportunities are being explored/developed in US and Asia, complemented with projects to strengthen our current position in Europe

Repsol Chemicals Strategy

Expand

Expand: International Growth Project Type

INTEGRATED POSITION LEVERING BOTH PARTNERS CAPABILITIES

Repsol

- Operational excellence
- Business know-how (Product Development + Marketing)
- Proprietary Competitive technology

Local Partner

- Partner with access to local markets or competitive feedstock
- Professional & Trustful partner
- Experience operator in industrial businesses with local capabilities

Focus in High Value Products: POSM/Polyols, EVA, Rubber, ...

REFERENCE ECONOMIC FIGURES

1-4 \$B	25-50%	10-13%	50-70%	15-17%
PROJECT CAPEX	REPSOL SHARE	IRR	LEVERAGE	EQUITY IRR

Key messages

- 01 > **Safety** as main priority
- 02 > Strong **Iberian Integrated** position with high **feedstock flexibility**
- 03 > **Resilient business** with further opportunities in **Transformation**
- 04 > **Expand Plan** based on own competitive technical & commercial **strengths**
- 05 > **Positive Outlook for Business Expansion** in a Growing Market, aligned with Energy Transition





REPSOL