



Mobility policies: decarbonization & electrification.

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November 2022

SMART TECHNOLOGY FOR SMARTER MOBILITY



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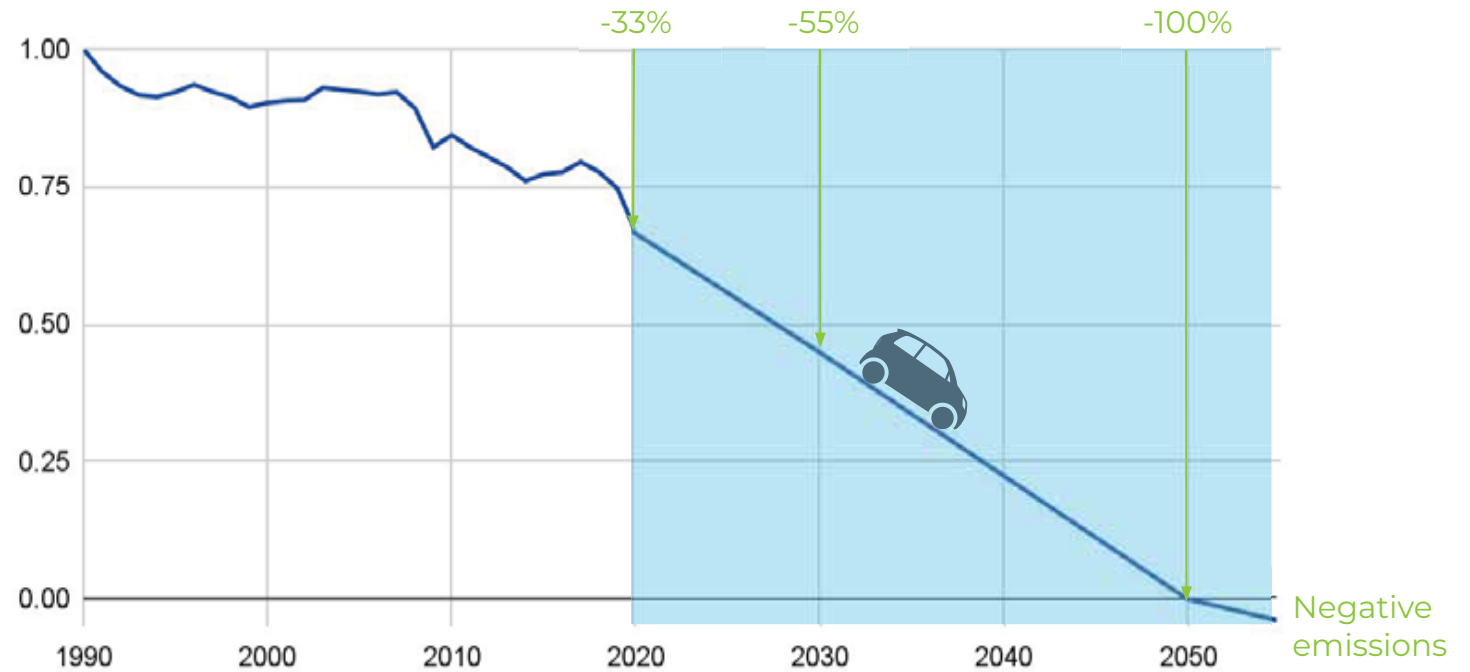
Legal context /
*the Green Deal applied
to the automotive
industry*

“The European Green Deal is our new growth strategy”



EU-27 GHG emission index (1.0 = 1990)

Source = EEA



“The European Green Deal is an invitation for all to participate.”



Legislation timeline and European commitments

LEGISLATION

11 Dec 2019 - GREEN DEAL :
Climate neutrality by 2050

Sep 2020 - 2030 CLIMATE TARGET PLAN : -55% GHG by 2030

end 2022 AFIR, CO2 standards, RED III adoption

2026 Review clause

Mar 2020 - CLIMATE LAW :
legally binding targets on GHG & general action plan

Jul, Dec 2021 - FIT FOR 55 :
adapt legislation to meet the 55% target

2023 EPDB, TEN-T, ITS adoption

IMPACT

2030 : -55% emissions (ref. 1990)

2050 : Net zero emissions

2035 : 0% ICE

2050+ : Negative emissions



Fit for 55 : the legislation update for market players

AUTO INDUSTRY is impacted by the sectorial and transversal translation of the European Green Deal : the legislation updates/new legislation proposals made in the **“Fit for 55” package**.

Fit for 55 is a set of **19 legislative proposals presented by the European Commission in 2021**. It impacts all sectors and ensures that European law is aligned with the EU’s climate goals.

Current Status :

The Council and European Parliament have **reached internal agreements on about half of the content of this package**.

Final versions are expected to be voted in **2023-2024**, after discussions between the EU institutions and Member States.

The ambition of **Fit for 55** is based on 3 pillars

1 The reduction of carbon emissions and the electrification of the vehicle fleet



ICE (Internal Combustion Engine) ban in 2035.



Halve the emissions of new vehicles between 2021 and 2030.

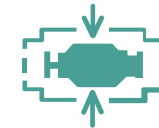
2 The acceleration of charging and refueling infrastructure



Ensure a decent **spread of charging/refueling stations** across Europe to ensure mind free travelling.

Have a power supply power capacity proportional to the number of vehicles.

3 Maintaining strict norms on pollutions

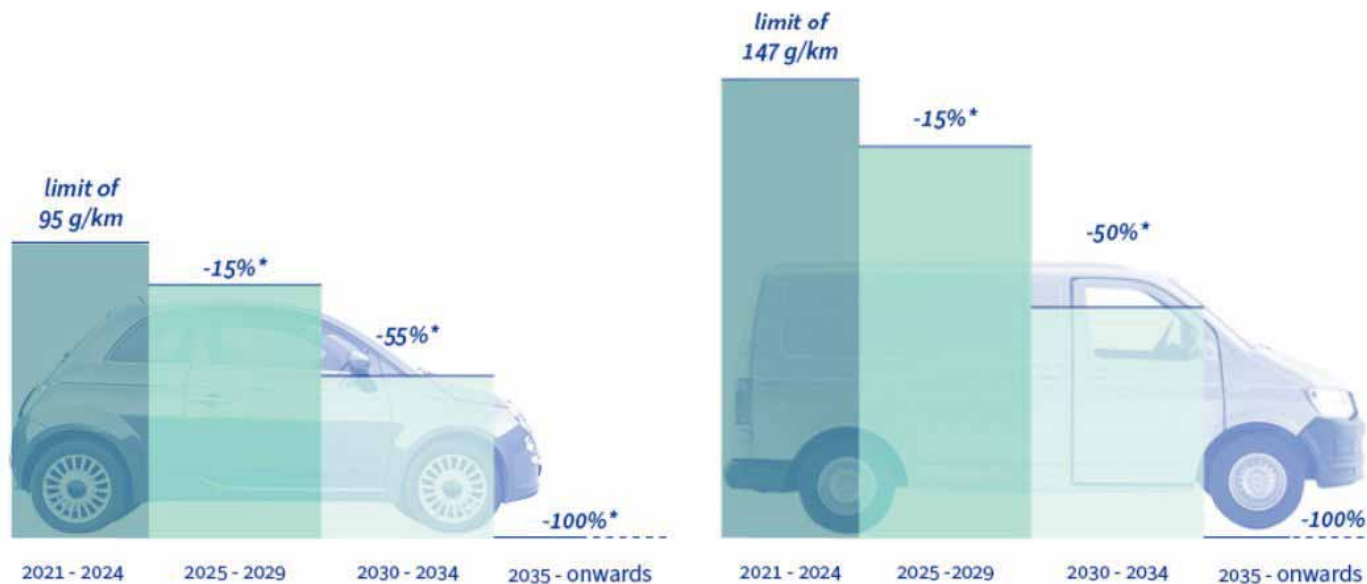


Strict norms on polluting emissions in 2027 (Euro 7) norms **on top** of Fit for 55 **to direct 100% of investment flows toward electric mobility.**

Internal Combustion Engine ban in 2035 is now the EU law

After over one year of legislative process between the Commission, the EU Parliament and the Member States, the **CO2 emission standard for cars and vans** has been agreed on October 27th. The agreement includes:

- a **rapid decrease in car emissions (-50% in less than 10 years)**.
- an objective to **reach zero-emission vehicles (ZEV) in 2035**.
- a **non-binding recital for e-fuels** (possibility of assessing the contribution to e-fuels in the 2035 targets).



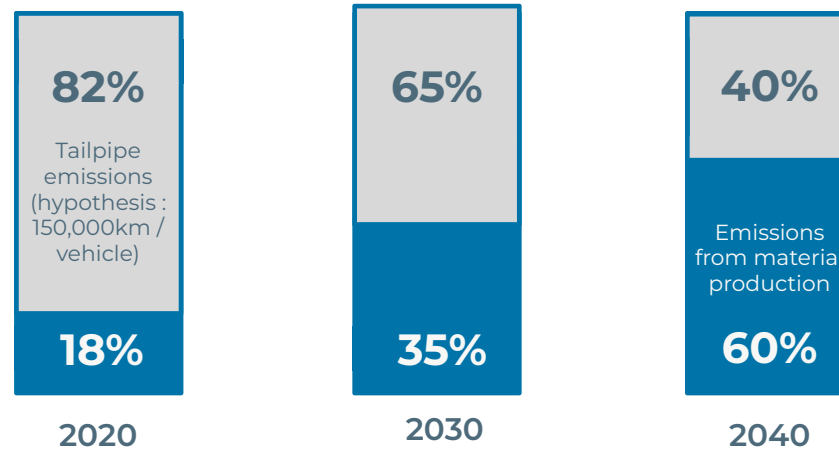
Benefits

- **for citizens** : Less polluted air, better public health
- **for consumers** : lower energy expenditure, more affordable EVs due to mass production
- **for the EU's automotive industry** : technological leadership, competitiveness

But zero carbon mobility goes beyond electrification

As a result of the decrease of direct carbon emissions, the emissions from material production may reach 60% of life-cycle emissions by 2040.

% of life-cycle emissions (based on required sales data)



There is a need for the automotive industry to have **a harmonized way to calculate** CO2 emissions along the value chain, from raw materials to the end of life of a product.

This will enable the industry to reduce **the global carbon footprint** of the next generation of EVs

A proposal from the Commission for a common EU methodology for the calculation of the life cycle assessment of cars, vans, fuels & energy by 2025 is also part of CO2 standards on cars & vans.

This transformation generates several new challenges



Accelerate the rollout of **smart charging infrastructure**

Alternative fuels infrastructure regulation (AFIR) from the same package



Build a **resilient energy system** on secure & **decarbonized energy sources**

Integrated car technologies can help balance energy & demand : frugal EV solutions, smart charging infrastructure, etc.



Localize key technologies in Europe, financially support the industry

BEPA (the European Batteries Alliance), IPCEI for powertrain electronics



Secure the **access to raw materials** : rare earth, lithium, cobalt, 3T&G.

Critical Raw Materials Act*

Lithium will need to be recycled



Build a European playing field on **circularity, waste recovery** and **2nd life of products****

Eco-design Directive, Waste Directive

* the proposal addresses (i) the crisis management of CRM supplies, including an early warning system, (ii) financing instruments to support the production of materials, (iii) a fair-trade and sustainable market framework based on high ESG Standards.

** reuse, remanufacturing, recovery from critical materials & parts: e-motors, powertrain electronics, batteries, etc.

SOCIAL and SOCIETAL CHALLENGES

The **value chains** that have taken in consideration the race to electrification will **survive** .
Important impact on workers from Internal Combustion engine value chains to electrification and hydrogen value chains::

Educational shift needed, not everyone can be saved.

The mobility of tomorrow is betting its future on

Electronics => chips are needed in electric powertrain and in safety/automation

European answer=> CHIPS ACT will it be enough? (Taiwan. USA, China...) and their recyclability?

Green electricity= we need a European strategy on energy. The end of the deal with Russia will reshuffle countries policies.

Coherence is needed with CO2 objectives and competitiveness and feasibility

WHAT IS REALLY SUSTAINABLE ? (WHAT IS NOT)

THE GREEN DEAL FOR ROAD MOBILITY = NEEDED (otherwise who is going to cut 18% of the emissions caused by this sector?)

INDUSTRY NEEDS STABLE REGULATION= FIRST STEP OF SUSTAINABILITY

- Socially
 - Financially = > TAXONOMY: access to funding/ investment
 - For the **research/ innovation => mobility ecosystem is the number 1 in PATENTS DEPOSIT**
-
- **BATTERY ELECTRIC TECHNOLOGIES versus HYDROGEN= GREEN HYDROGEN IS NOT AN AFFORDABLE SOLUTION FOR USE OF PRIVATE VEHICLES (for BUSES and TRUCKS / LORRIES interesting axis of innovation)**

EUROPEAN COMMISSION SUPPORTS BOTH through **2ZERO** www.2zeroemissions.eu

- **COST OF DECARBONIZATION**

Social impact of the transition

Cost of innovation/ but will be reduced step by step by large volume (2024 iso cost)

Change of business model = private ownership vs car share, use of small mobility e-bikes...

02

Valeo's action plan

A LONG TERM SUSTAINABLE GROWTH STRATEGY CONSISTENT FOR OVER 10 YEARS

“ Our growth engine for the next decade: **CO2 emission reduction** ”

Jacques Aschenbroich
Chairman, and former-CEO
March 2010
Valeo Investor Day



Christophe Périllat
CEO
October 2022
Paris Automotive Summit

“ This race is not **judged on the** speed of the first to cross the finish line but on the **speed of the last one**, so it is in the responsibility of all to go as fast as possible. It’s a question of **collective survival**.
The carbon footprint of road transport represents 18% of global CO₂ emissions. It’s urgent that we act **now** and that we **act boldly** if if we want to **keep global warming below 1.5°C.** ”

VALEO TODAY

VALEO IS MOVING UP A GEAR AND STRENGTHENING ITS POSITIONING IN THE FOUR KEY AREAS OF MOBILITY



ADAS



Electrification



Lighting everywhere



Reinvention of the interior experience

2021 KEY FIGURES



€17.3 bn
sales



103,300
employees



184
production sites



64
R&D centers



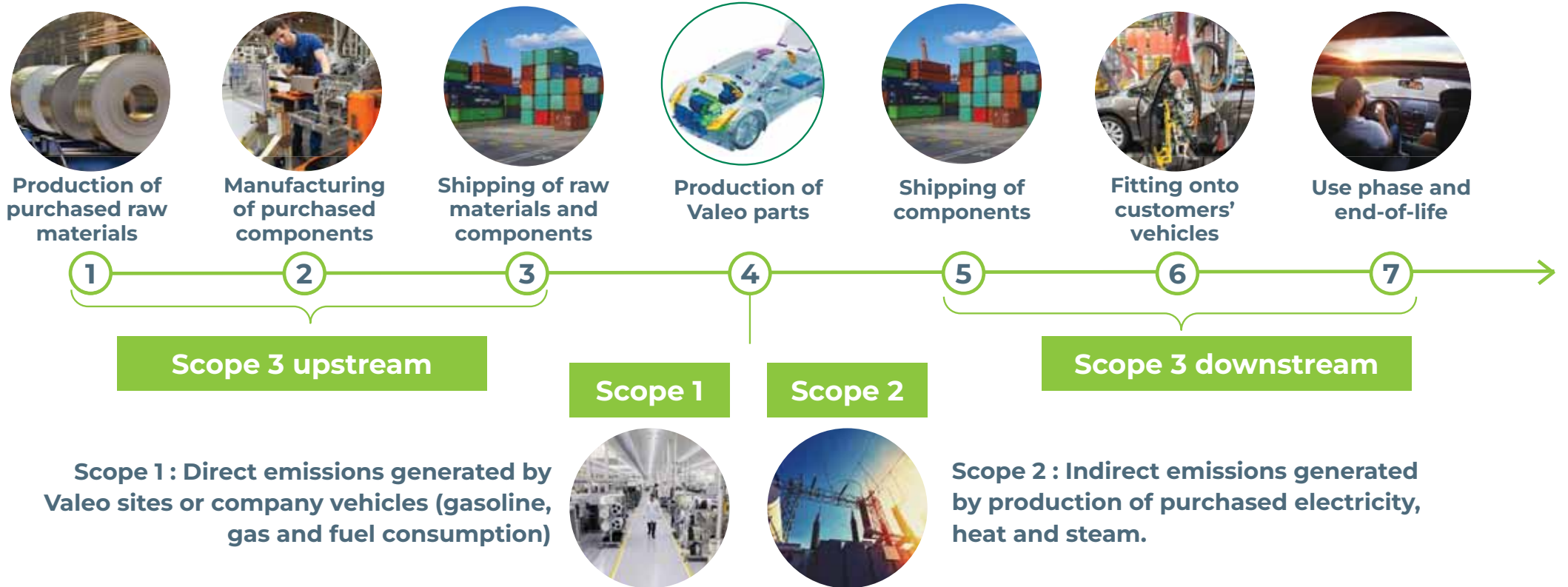
31
countries



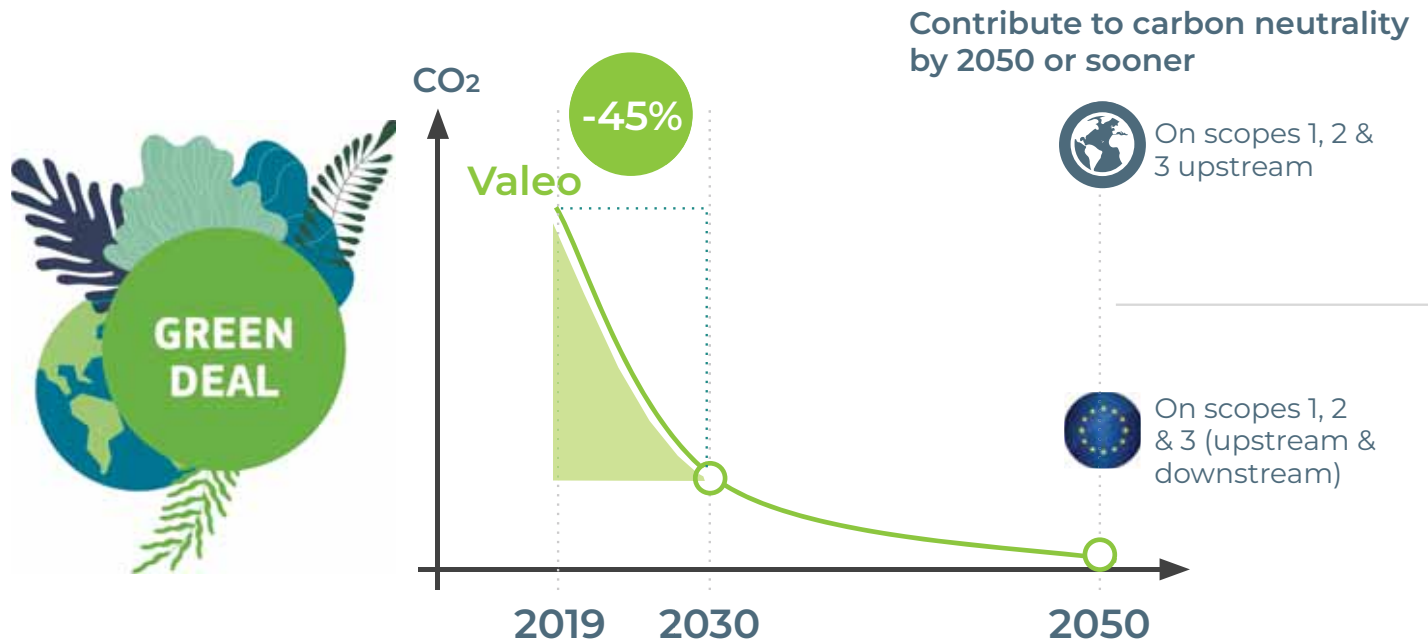
€27.5 bn
sales in 2025

WHAT IS VALEO'S CARBON FOOTPRINT ?

It is the total CO2 equivalent of GreenHouse Gas emissions related to Valeo:
Value Chain + **Operations** + **Use phase**

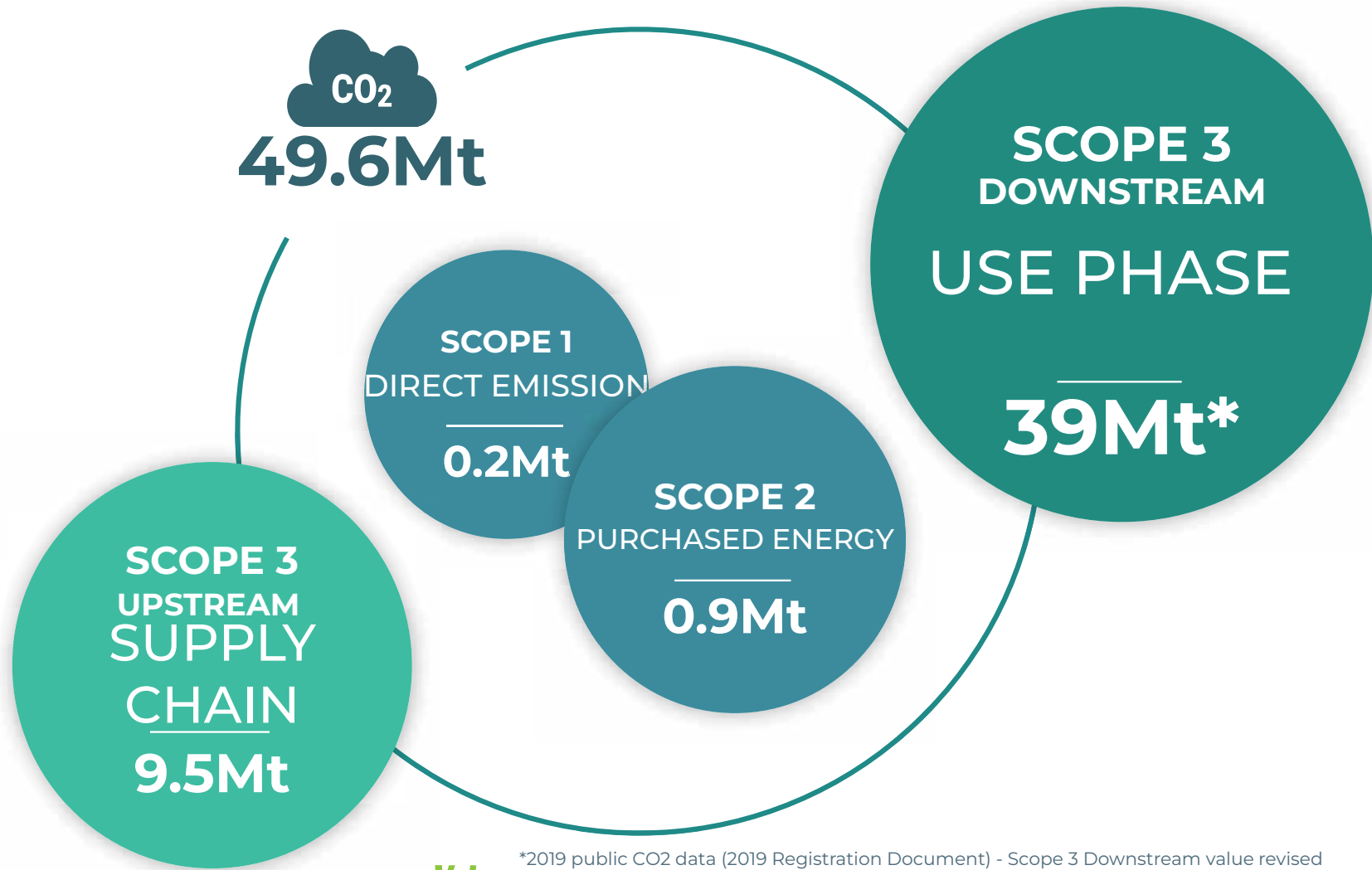


In Q1 2021, **Valeo** has disclosed **CAP 50**,
as **sustainable growth** is at the **core of our strategy**.





VALEO 2019 CARBON FOOTPRINT



Valeo *2019 public CO₂ data (2019 Registration Document) - Scope 3 Downstream value revised in 2020 to align with sector-based calculation methodology **November 2022 | 18**



VALEO'S 2030 COMMITMENTS

SCOPES 1&2

1.1 Mt eq CO₂ *

-75%

0.28 Mt eq CO₂

SCOPE 3 UPSTREAM

9.5 Mt eq CO₂ *

-15%

8.1 Mt eq CO₂

SCOPE 3 DOWNSTREAM

39 Mt eq CO₂ *

-15%* SBTi

-50%** NET

33.1 Mt eq CO₂ SBTi

19.5 Mt eq CO₂ NET

* 2019 baseline

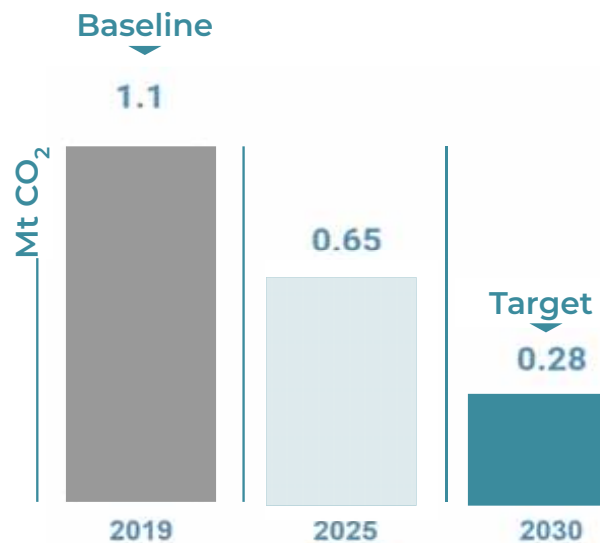
** -50%, NET 2030 Valeo target = SBTi 2030 absolute value
+ additional 2030 CO₂ reduction yearly realised
vs 2019 baseline thanks to Valeo electrification portfolio



BUSINESS AMBITION FOR **1.5°C**



SCOPE 1&2
OUR OPERATIONS
AS A ROLE MODEL
-75%



Impact:



Assembly at Valeo

400M€

Investment for
the next 10 years

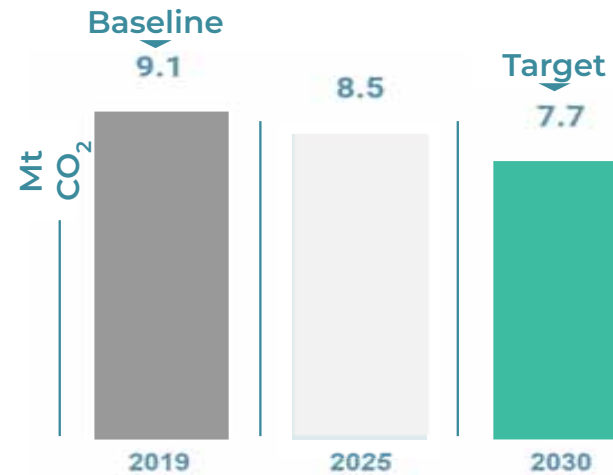
4 Key Levers		2019	2025	2030
Eradication of gas / fuel consumption	Number of ISO 50001 sites	27	67	100
Energy efficiency improvement on sites				
Low carbon energy procurement for our operations	% of low carbon electricity purchased	5.5%	50%	80%
Energy self production on sites				



**SCOPE 3
UPSTREAM**

DRIVING OUR
SUPPLIERS CARBON
FOOTPRINT REDUCTION

-15%



4 Key levers	
ACCURACY / TECHNICAL CREDITS	Improving our calculation method and tools, and using emission factors as precise as possible, WITHOUT ANY OTHER CHANGE (same design, same materials, same suppliers)
SUPPLIER RESOURCING @iso-design	Lower carbon footprint @ iso design thanks to choice of supplier (new supplier, new localisation, or process / energy mix / PCF calculation improvement at current supplier)
MATERIAL / ELECTRONICS SUBSTITUTION	Using materials / electronic components with a lower carbon footprint, i.e. that require less energy to produce.
LIGHT WEIGHTING	Developing lighter products means using less materials, hence decreasing scope 3 upstream.

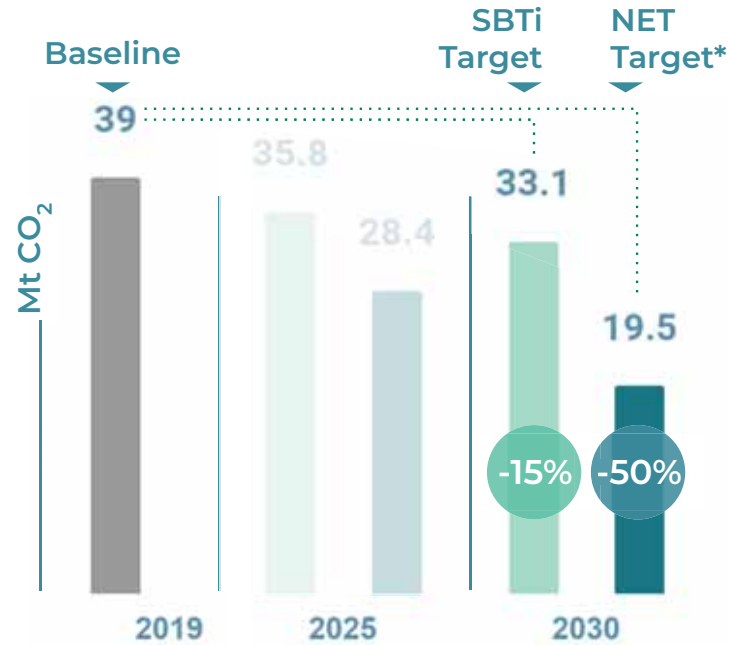
Purchasing teams use regular Self-Assessment Questionnaires to assess supplier maturity.



SCOPE 3 DOWNSTREAM

MOBILITY
DECARBONATION WITH
OUR PRODUCTS

-50%
in NET



Impact:

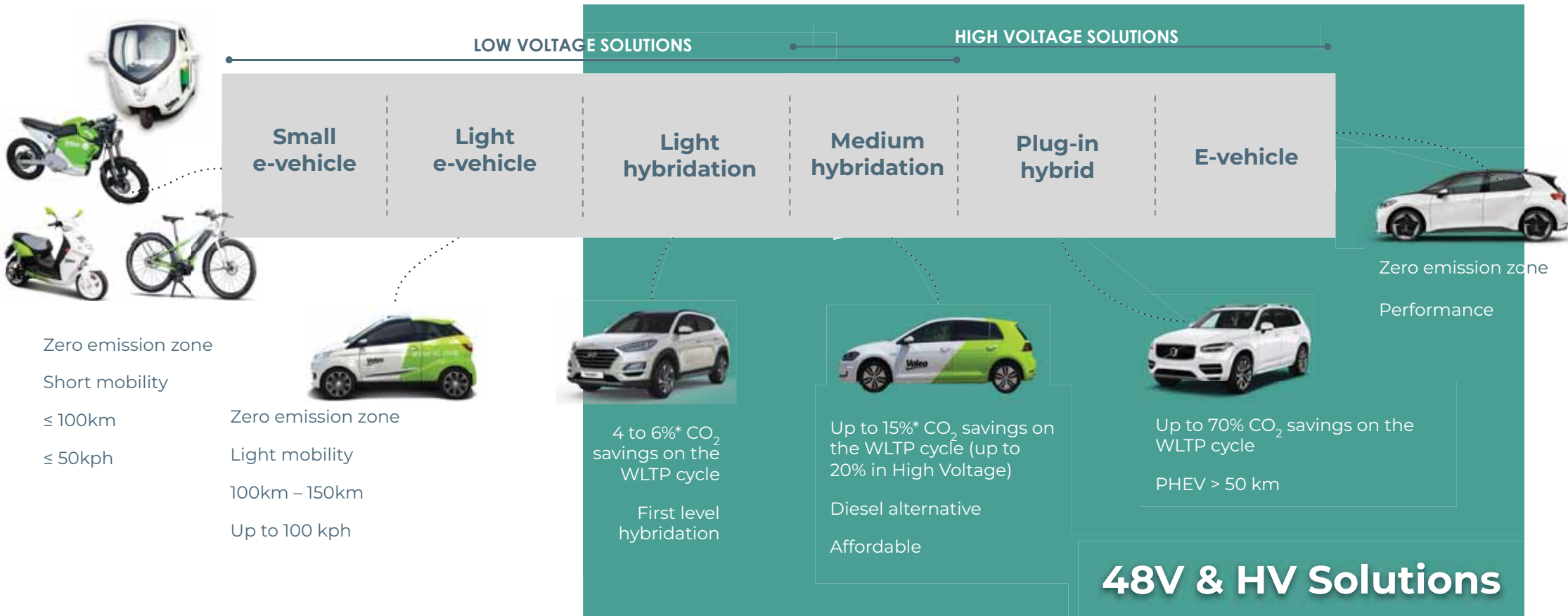


Use phase

4 Key Levers	
POWERTRAIN ELECTRIFICATION (NET)	Developing powertrain electrification technologies that allow 0 tailpipe emissions. Impacts NET value (including emissions avoided thanks to electrification).
LIGHTWEIGHT & ENERGY EFFICIENCY (SBTi)	Developing lightweight & energy efficient products that will require less energy (hence emit less CO2). Impacts SBTi value.
EV MIX 2030 - WEIGHT	Impact of fleet electrification on weight-related Scope 3 Downstream emissions.
EV MIX 2030 - POWER	Impact of fleet electrification on power-related Scope 3 Downstream emissions.

* NET 2030 Valeo target = SBTi 2030 absolute value + additional 2030 CO2 reduction yearly realised vs 2019 baseline thanks to Valeo electrification portfolio

AN EXAMPLE OF LOWER-CARBON TECHNOLOGY : 48V POWERTRAIN FOR AFFORDABLE MEDIUM SIZE HYBRID CARS & SMALL E-MOBILITY



48V & HV Solutions

**“R’S”
TO IMPROVE ON
CIRCULAR
ECONOMY**



Impact:



Scrap



Material ReUse

REDESIGN to allow...

Key Levers	
REMANUFACTURE	Ability to Remanufacture worn products: less waste → less CO2
REPAIRABILITY	Repairability of broken parts & designed-in from the beginning: less waste → less CO2
Increase % of RECYCLED materials	The use of Recycled materials in new and remanufactured products decreases CO2 footprint of materials (less energy to produce recycled materials than primary - no extraction...)
ROBUST DESIGN	Robust design, leading to longer product life: less change → less waste → less CO2





APPENDIX

SMART TECHNOLOGY FOR SMARTER MOBILITY

01

Around the world

Other initiatives worldwide

ZERO
EMISSIONS
during the vehicle use phase

REGULATORS AIM TO REACH THIS TARGET FOR NEW VEHICLES SOLD, BY 2035 IN EUROPE, 2040 IN THE UNITED STATES, CHINA, INDIA AND JAPAN, AND 2045 IN SOUTH KOREA.

700

REGULATIONS WORLDWIDE RESTRICT VEHICLE ACCESS TO CITIES. BEIJING HAS INTRODUCED AN ODD-EVEN LICENSE PLATE POLICY AND IMPOSED A TOTAL BAN ON THE MOST HIGH-EMISSION VEHICLES⁽¹⁾.

(1) Frost & Sullivan (December 2020).



02

**Green Deal applied to
the car industry**

TARGETS

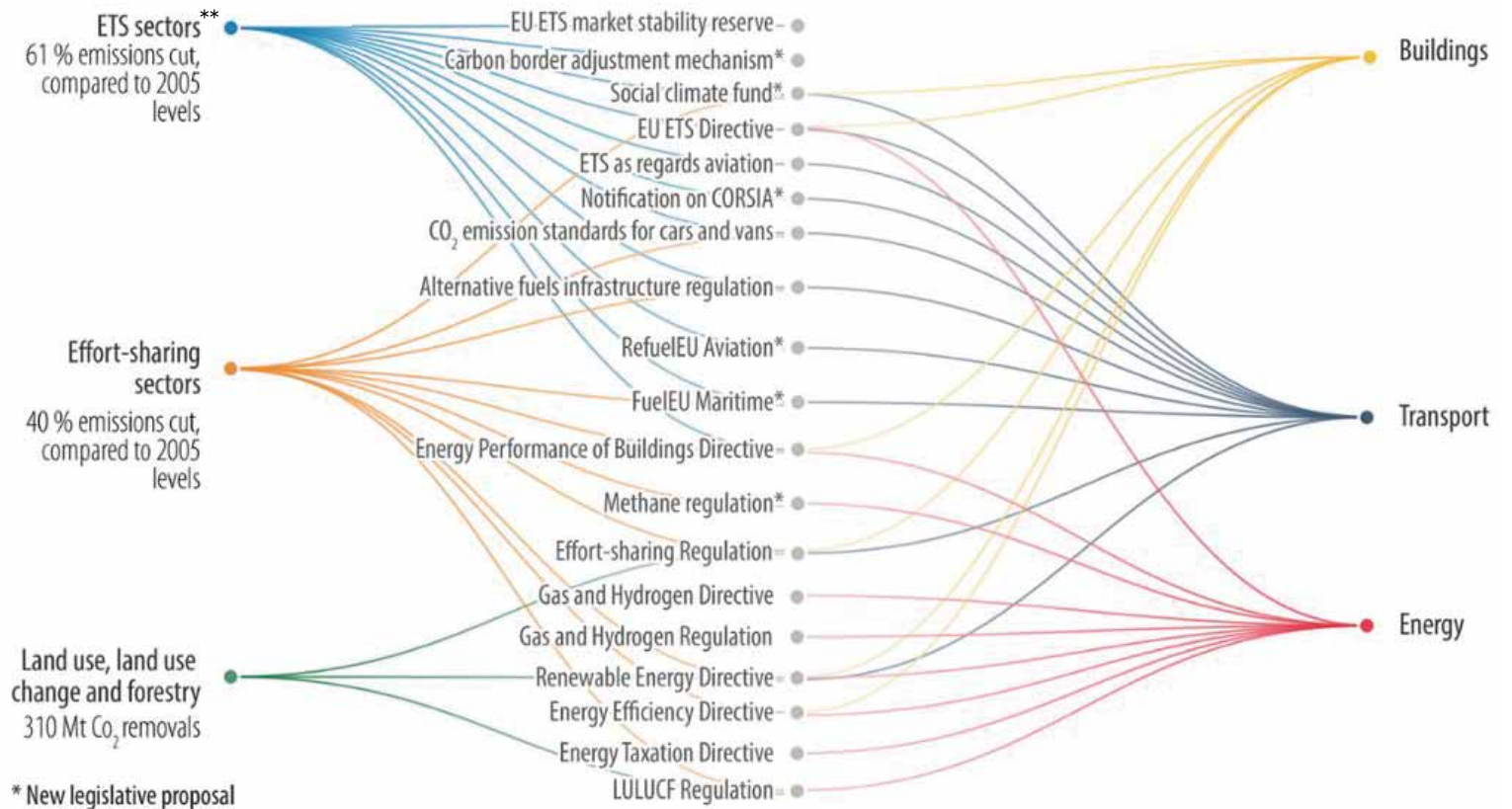
Fit for 55 Proposals

The **19 legislative proposals** ensure European law is aligned with the EU's climate goals.

They impact all sectors. 13 proposals are proposed revisions and amendments, 6 are new legislation proposals.

2 particularly impact road transport:

- **CO₂ emission standard for cars and vans**
- **Alternative Fuels Infrastructure Regulation (AFIR)**



Where are we in the lawmaking process ?



European parliament



European commission



Council of the European Union



14 Jul, 8 Dec 2021
presented its 1st & 2nd batches of drafts

Sent its proposals to



8 Jun 2022

EP vote on 8 proposals



Mar, Jun, Jul 2022

adopted its position on several proposals

- 0) Technical discussion between states representatives in working parties
- 1) Coreper (Permanent Representative Committee) continues discussions
- 2) Thematic ministers discuss in Council meetings to reach a joint position ('general approach') on each proposal



Triggers the start of trilogues

2023-2024

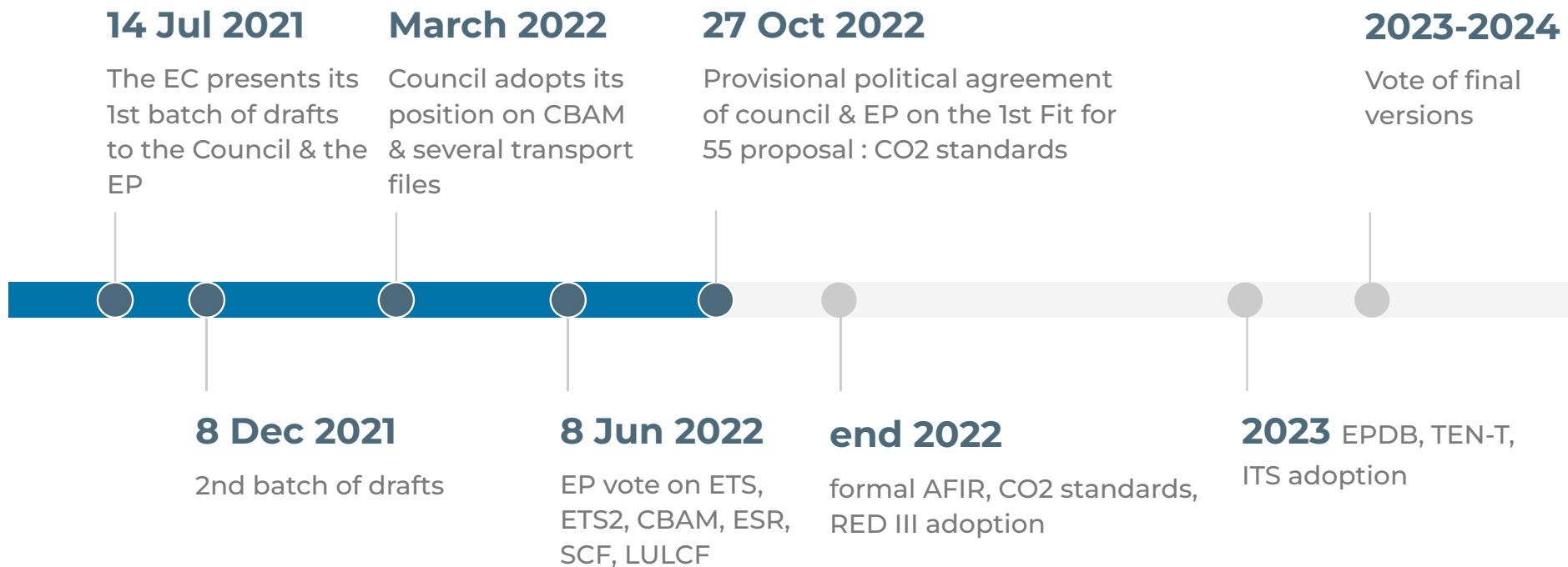
Vote of final versions



27 Oct 2022

Provisional political agreement of council & EP on the 1st proposal : CO2 standards

Fit for 55 adoption timeline



Transversal topics

1 EU ETS : Reforming the EU carbon market and setting a bloc-wide carbon border tax

What is it ?

The EU's **emission trading scheme** financially incentivises the reduction on GHG emissions.

- Directive adopted in 2003 ; system launched in 2005.
- Works on the principle of “cap-and-trade” :

The EU sets maximum limit on the total amount of GHG that can be emitted each year within the system.



Regulated entities buy or receive certain free emissions allowances annually, which they can then trade with one another on the “carbon market”.

- Covered sectors : energy-intensive industrial sectors, power and heat generation and aviation within Europe.

What's new ?

- include maritime transport
- phase out free allocation of allowances to aviation & CBAM-covered sectors
- implement the global carbon offsetting & reduction scheme for international aviation (CORSIA)
- increase funding from modernisation & innovation funds
- revise the market stability reserve (MSR)
- create a new, separate emissions trading system for distributors supplying fuels for consumption in the buildings and road transport sectors + create a **social climate fund** to address its social/ distributional impacts & support vulnerable users (households/micro-enterprises).
- add a **carbon border adjustment mechanism (CBAM)** to prevent efforts made within the EU from being annihilated by a global compensation effect.

=> 13 pp increase in GHG reduction from the current 48% target (-61% 2005-2030)

Transversal topics

2 EU ESR : Reinforcing Effort Sharing between Member States

What is it ?

The EU's **Effort Sharing Regulation** sets binding national targets for emission reductions in sectors that are not covered by the ETS or the LULUCF.

- Effort Sharing Decision (ESD) adopted in 2012 for the 2013-2020 period, Effort Sharing Regulation (ESR) adopted in 2018 for 2021-2030 period.
- Sharing calculation method based on GDP per capita

- Covered sectors : agriculture, road transport, small industrial installations, heating of buildings, waste management.

What's new ?

- EU-level GHG reduction target increase from 29% to 40% (ref. 2005)



Transversal energy topics

1 RED : Renewable Energy Directive

What is it ?

-

- Covered sectors :

What's new ?

-

Transversal energy topics

② Energy Taxation Directive

What is it ?

-

- Covered sectors :

What's new ?

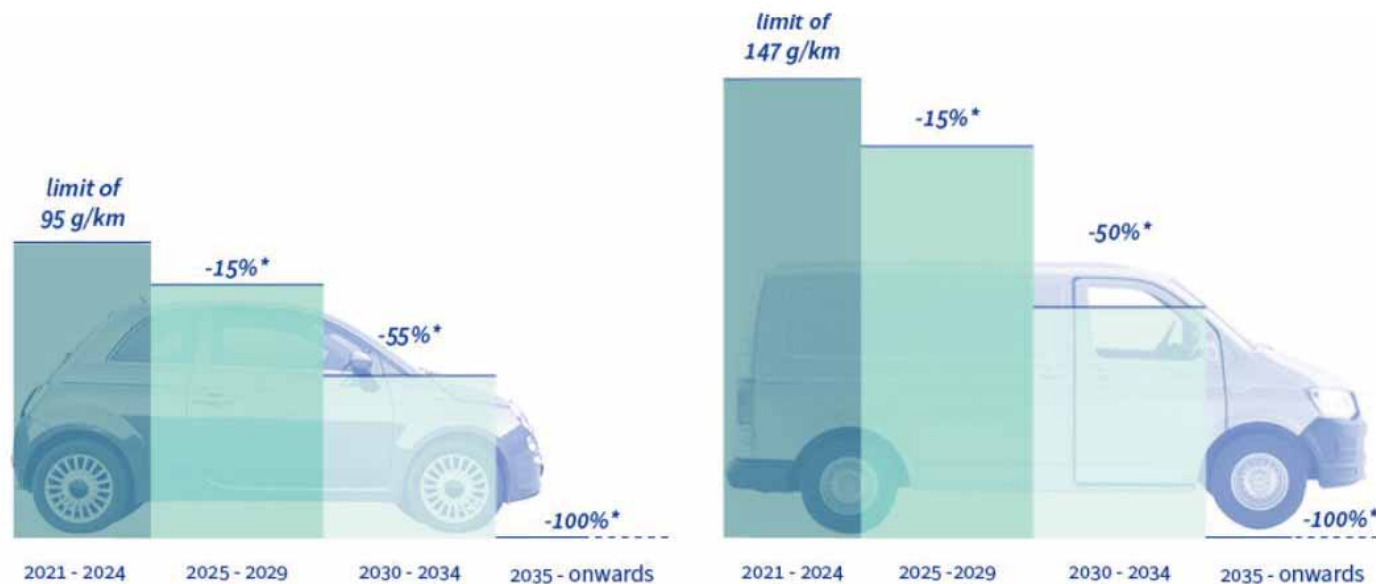
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Zoom on the car sector

1 CO2 emission standard for cars and vans

What is it ?

- 100% Zero-emission vehicles on the market in 2035 (ICE ban)
- -55 / 50% in 2030 for cars / vans
- ZEV incentive: phase out by 2029
- Recital for e-fuels (non-binding, the Commission has created the possibility of assessing the contribution to e-fuels in the 2035 targets)



Benefits

- **for citizens** : Less polluted air, better public health
- **for consumers** : lower energy expenditure, more affordable ZEVs due to mass production
- **for the EU's automotive industry** : technological leadership, competitiveness

Next steps

- a common EU methodology for a full CO₂ **Life Cycle Assessment** of cars and vans placed on the EU market, as well as for the fuels and energy consumed by these vehicles is expected by 2025 (initially meant for end 2023)
- **Euro7** (pollutants regulation) proposal to come for Nov. 9th 2022

Zoom on the car sector

2 AFIR : charging and refueling infrastructure to support decarbonization ambitions

The **alternative fuels infrastructure regulation** replaces the 2014 directive and aims to support user-friendly charging and refueling of ZEVs in all transport sectors.

On roads

E-charging stations



For vehicles below 3.5 tonnes :

- at least **1 station every 60 km** on main roads by end 2025
- The total output power capacity should grow with the number of registered cars (1 kW/EV, 0.66 kW/plug-in hybrid vehicle)



For trucks above 3.5 tonnes

- at least **1 station every 60 km** on main roads and in each safe and secure **parking area** by end 2030

Hydrogen refuelling stations



at least **1 station every 200 km** on main roads by end 2030

Liquefied methane refuelling points



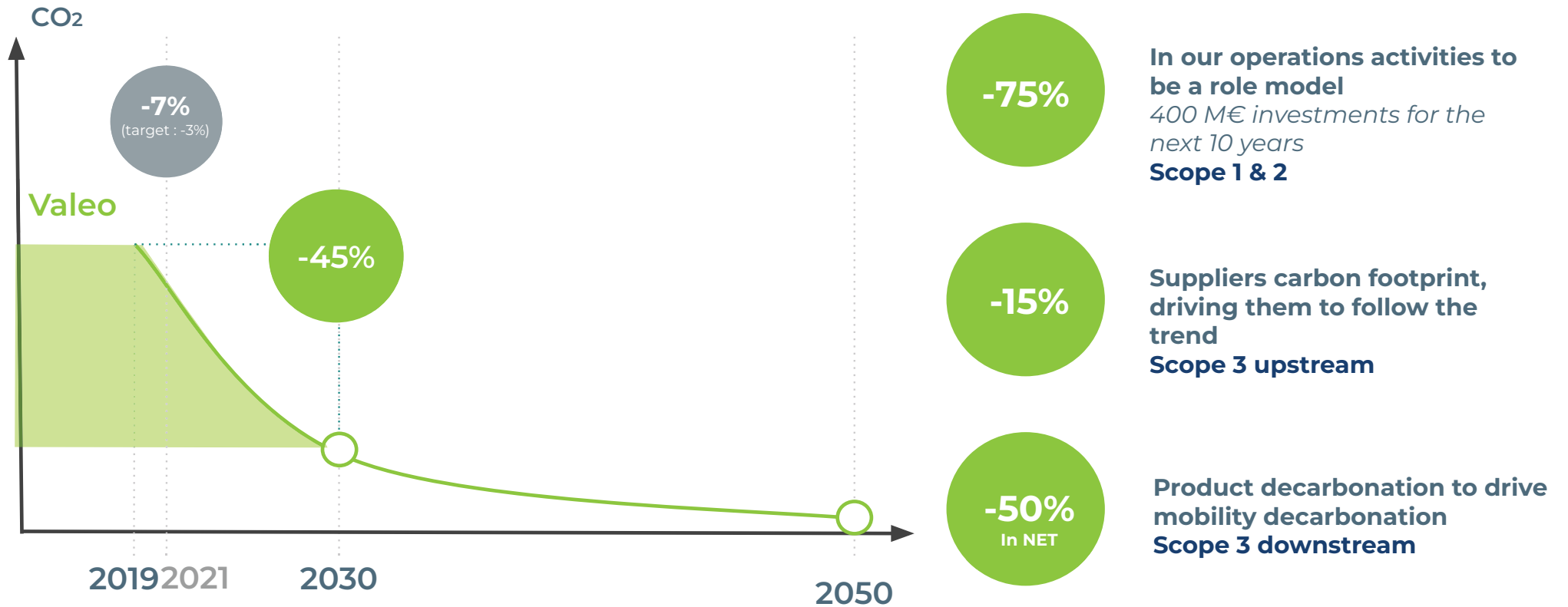
at least along main roads to **allow CH4-vehicles to circulate throughout the EU**

03

Valeo's action plan

Valeo proactively contributes to achieving these goals

CO2 reduction targets of Valeo Cap50 plan



Valeo will have achieved almost half of its *carbon neutrality objective* by 2030

Valeo proactively contributes to achieving these goals

