

The logo for ACT, consisting of the letters 'ACT' in a bold, white, sans-serif font, positioned within a white-outlined hexagonal shape. The background of the entire slide is a dark purple color with a pattern of lighter purple hexagons.

# ACT Automotive Manufacturer update Public consultation

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Tuesday 30<sup>th</sup> May to Friday 16<sup>th</sup> June 2023

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Formally launched in 2015, ACT (Assessing low-Carbon Transition) is an initiative that pioneered the concept of corporate climate transition plans, which analyses companies' climate governance, implementation and engagement strategies, metrics and GHG emissions reduction targets. Positioned as the accountability layer of climate action, the ACT initiative builds on measuring standards, supports reporting practices and aligns with relevant commitment initiatives. It includes sector-specific, free and publicly available methodologies, developed according to a standardised, multi-stakeholder process, and tested by companies. This assessment provides companies with the understanding of where they need to improve to contribute to limiting global emissions and demonstrates their readiness to transition to the low-carbon economy.

For more information, visit [www.actinitiative.org](http://www.actinitiative.org)

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- Please **read this document** and **complete the online consultation survey** in response to the proposed updates. Questions listed in this document (in red boxes) correspond to the questions in the online survey.
- The current [ACT Automotive Manufacturer methodology](#), published in 2020, is referred to as “**ACT AU V1**”
- The **updated methodology** that will be published after this consultation, as “**ACT AU V2**”
- **Sources** are listed at the end of the document.

## Statements related to current methodology ACT AU V1

*Explanation about why there is a proposal for update*

## Proposed updates for ACT AU V2

*Changes proposed to be made in ACT AU V2*

## Question to readers

*Expected feedback from readers during the online consultation.*

*Question number corresponds to the online survey.*



*This symbol indicates supporting elements/ documents to refer to*



**The online consultation survey can be found here:**

**[https://www.surveymonkey.co.uk/r/autos\\_update1](https://www.surveymonkey.co.uk/r/autos_update1)**

<b>Part 1</b>	<b><u>Definitions &amp; low-carbon scenarios</u></b>	
	1.1	<u>Definition of “low-carbon vehicle”</u>
	1.2	<u>Low-carbon scenarios</u>
<b>Part 2</b>	<b><u>Updates to ACT performance modules &amp; indicators</u></b>	
	2.1	<u>Overview of performance indicators</u>
	2.2	<u>Module 1 – Targets</u>
	2.3	<u>Module 3 – Intangible investment</u>
	2.4	<u>Module 4 – Sold product performance</u>
	2.5	<u>Modules 6 &amp; 7 – Supplier &amp; Client engagement</u>
	2.6	<u>Module 8 – Policy engagement</u>
<u>Sources</u>		

# Part 1 Definitions & low-carbon scenarios

# 1.1. Definition of “low-carbon vehicle” (1/3)

The ACT Auto methodology currently includes all plug-in hybrid vehicles within its definition of “low-carbon vehicles”, and “high-efficiency ICE vehicles” within its definition of “advanced vehicles”. Companies are rewarded for their production and marketing of these vehicles in several ACT indicators.

## As stated in ACT AU V1:

“Vehicles described as low-carbon (LCV) are defined as vehicles that have a drivetrain that has the potential to operate on non-fossil energy sources for at least > 50% of their common use phase. This includes: Plug-in hybrid vehicles (PHEV); Battery electric vehicles (BEV); Fuel cell electric vehicles (FCEV)”

“Advanced vehicles include: Plug-in hybrid vehicles (PHEV); Battery electric vehicles (BEV); Fuel cell electric vehicles (FCEV); Conventional hybrids; Other high-efficiency internal combustion engine (ICE) vehicles. Conventional hybrids and other high-efficiency ICE vehicles are advanced vehicles but they are not low-carbon vehicles.”



See [ACT AU V1](#) (p. 70, p. 75)

# 1.1. Definition of “low-carbon vehicle” (2/3)

Update proposal – ACT AU V2: Remove the term “advanced vehicle” from the methodology, and increase the stringency of the definition of “low-carbon vehicle”.

## New definition of “low-carbon vehicle”

“Low-carbon vehicles” (LCV) are defined in accordance with the EU Taxonomy, such that:

- Until 31 December 2025: vehicles that have tailpipe CO<sub>2</sub> emissions of less than 50gCO<sub>2</sub>/km. Practically, this includes:
  - Some plug-in hybrid vehicles (PHEV), as long as their CO<sub>2</sub> emissions are below the specified threshold
  - Battery electric vehicles (BEV)
  - Fuel cell electric vehicles (FCEV)
- From 1 January 2026: vehicles that have CO<sub>2</sub> emissions of 0gCO<sub>2</sub>/km (zero-emission vehicles). Practically, this includes:
  - Battery electric vehicles (BEV)
  - Fuel cell electric vehicles (FCEV)

Users of the ACT Automotive Manufacturer methodology should follow the definition of low-carbon vehicle in accordance with the date at which the methodology is used. For example, an assessment carried out before 31st December 2025 should use the appropriate definition of “low-carbon vehicle”.

# 1.1. Definition of “low-carbon vehicle” (3/3)

## Rationale

- The ACT methodology should no longer incentivise production of ICE vehicles, regardless of their efficiency, since they are not part of the long-term decarbonisation of the automotive sector.
- For the most part, PHEVs are a transition technology and are not compatible with the EU Taxonomy after 2025. In order to future-proof the ACT methodology and to comply with the ACT principle of conservativeness, we propose to align with the EU Taxonomy, since this allows for highly efficient PHEVs (<50gCO<sub>2</sub>/km) until 2026, at which point only zero tailpipe emission vehicles are considered low-carbon.

## Issue

- Analysis shows that PHEVs emit much higher CO<sub>2</sub> emissions in real life than official figures show (Transport & Environment). In many cases, official figures may be lower than the 50gCO<sub>2</sub>/km tailpipe emissions threshold, while actual figures may be higher than the threshold. This calls into question the validity of using the <50gCO<sub>2</sub>/km threshold for the ACT definition of a low-carbon vehicle.

Q1: In the light of analysis showing that PHEVs emit higher levels of CO<sub>2</sub> than officially reported figures, should the “<50gCO<sub>2</sub>/km tailpipe emissions until 2025” threshold be kept, or should this be reduced to 0gCO<sub>2</sub>/km tailpipe emissions (only zero-emission vehicles)?



## 1.2. Low-carbon scenarios (1/2)

Because no more ambitious scenario was available at this time, ACT AU V1 refers to the 2DS scenario from the International Energy Agency (IEA), which is 2°C-aligned



See [ACT AU V1](#) (p. 59)

ACT assessment methodologies assess how well companies' low-carbon strategies align with the **Paris Agreement temperature goal**:\*

*“Holding the increase in the global average temperature **to well below 2°C** above pre-industrial levels and **pursuing efforts** to limit the temperature increase **to 1.5°C** above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.”*

In line with the ACT principle of conservativeness, the most ambitious scenario available for a sector should be used for the ACT assessment.

(\*): See the [Glasgow Climate Pact](#) which reaffirms the Paris Agreement temperature goal – COP26, Glasgow, 2021

Update proposal – ACT AU V2: Define updated sources for reference data needed for low-carbon scenarios

## Rationale

Defining sufficiently ambitious low-carbon scenarios for the automotive sector is currently difficult since a number of inputs from various sources are required. These include:

- 1.5°C or well-below 2°C-aligned sector benchmark for scope 1 and 2 emissions
- 1.5°C or well-below 2°C-aligned sector benchmark for downstream scope 3 (fleet) emissions
- Global and geographically weighted average lifetime of cars in kilometers
- Sector benchmark for low-carbon vehicle sales
- Sector benchmark for ICE vehicle emissions intensity

Q2: Are there any publicly available sources for any of the inputs/scenarios listed? Please provide links.

## Part 2

# Updates to ACT performance modules & indicators

# 2.1. Overview of performance indicators (1/2)

Update proposal – ACT AU V2: List of performance modules and indicators

*Indicator not included in ACT AU V1 / proposed for ACT AU V2*

ACT Modules		Performance indicators	
1	Targets	AU 1.1	Alignment of scope 1+2 emissions reduction targets
		AU 1.2	Alignment of downstream scope 3 (fleet) emissions reduction targets
		AU 1.3	Alignment of upstream scope 3 (materials) emissions reduction targets
		AU 1.4	Time horizon of targets
		AU 1.5	Achievement of previous targets
2	Material investment	AU 2.1	Trend in past emissions intensity
3	Intangible investment	AU 3.1	R&D for low-carbon transition
		AU 3.2	Low-carbon patenting activity
4	Sold product performance	AU 4.1	Downstream scope 3 (fleet) emissions pathway
		AU 4.2	Fleet emissions lock-in
		AU 4.3	Low-carbon vehicle share
		AU 4.4	Upstream scope 3 (materials) emissions pathway OR Purchased product interventions
		AU 4.5	Vehicle efficiency performance

# 2.1. Overview of performance indicators (2/2)

ACT Modules		Performance indicators	
5	Management	AU 5.1	Oversight of climate change issues
		AU 5.2	Climate change oversight capability
		AU 5.3	Low-carbon transition plan
		AU 5.4	Climate change management incentives
		AU 5.5	Climate change scenario testing
6	Supplier engagement	AU 6.1	Strategy to influence suppliers to reduce their GHG emissions
		AU 6.2	Activities to influence suppliers to reduce their GHG emissions
7	Client engagement	AU 7.1	Efforts to promote sales of low-carbon vehicles
		AU 7.2	Strategy to influence clients to reduce their GHG emissions
		AU 7.3	Activities to influence clients to reduce their GHG emissions
8	Policy engagement	AU 8.1	Company policy on engagement with associations, alliances, coalitions or thinktanks
		AU 8.2	Associations, alliances, coalitions and thinktanks supported do not have climate-negative activities or positions
		AU 8.3	Position on significant climate policies
		AU 8.4	Collaboration with local public authorities
9	Business model	AU 9.1	Business models that reduce barriers to low-carbon vehicles
		AU 9.2	Business models that enable more efficient use of cars than personal ownership
		AU 9.3	Business models that develop mass transit vehicles or alternative personal vehicles

## 2.2. Module 1 – Targets (1/2)

Currently, ACT AU V1 includes indicators relating to scope 1+2 and downstream scope 3 (fleet) emissions reduction targets. It does not include upstream scope 3 (materials) targets.

Update proposal – ACT AU V2: Add an indicator “Alignment of upstream scope 3 (materials) emissions reduction targets” that is dedicated to targets to reduce embedded emissions from materials production.

### Rationale

- The emissions from materials production are a significant share of the total life-cycle emissions for autos (currently around 18%), and this will increase to 35% in 2030 and 60% in 2040 with ambitious rollout of EVs, due both to the reduced in-use emissions from EVs, and increased emissions from producing materials, especially batteries (World Economic Forum).
- It is therefore increasingly important for automotive manufacturers to set targets for, and begin reducing, their upstream scope 3 emissions related to materials production.

### Options

1. Assess upstream scope 3 (materials) targets based on emissions intensity, using individual benchmarks for key materials (see “Challenges” section on next slide).
2. Assess upstream scope 3 (materials) targets using the Absolute Contraction Approach (i.e., based on a generic absolute emissions reduction pathway that does not require specific benchmarks for different materials)

### Challenges

- In order to assess targets based on emissions intensity, a company benchmark must be derived from a decarbonisation pathway for the relevant sector/activities. In this case, decarbonisation pathways for several key materials would be needed in order to assess companies. These should be based on the materials that contribute most towards companies' upstream scope 3 emissions.
  - For example, for ICE vehicles, the largest contributor of upstream scope 3 emissions from materials production is steel, followed by aluminium, electrics & electronics, and polymers. For BEVs, battery cells are the largest contributor, followed by electrics & electronics, steel, aluminium, and polymers (Hirz & Nguyen)
- If upstream scope 3 (materials) targets are to be assessed in this way, it will have to be validated which of these materials have decarbonisation pathways, in order to understand how many materials can be assessed. This adds significantly to the complexity of the indicator.
- By contrast, the second approach (Absolute Contraction) does not require any specific sectoral decarbonisation pathways, and is much simpler to assess.

Q3: Do you agree with the proposal to add an indicator “Alignment of upstream scope 3 (materials) emissions reduction targets” to Module 1?

Q4: Which approach should be used to assess upstream scope 3 (materials) targets?

Currently, ACT AU V1 indicator 3.1 “R&D for low-carbon transition” is based on a benchmark (for the share of R&D to be spent on low-carbon technologies) that is outdated (WWF & Ecofys).

Update proposal – ACT AU V2: Since no up-to-date benchmark figure can be found for the required share of R&D that companies in the sector should spend on low-carbon technologies to align with a below 2° or 1.5° scenario, the generic ACT approach to calculating this indicator should be used.

Q5: Do you agree with the proposal to use the generic ACT approach to calculating indicator 3.1 “R&D for low-carbon transition”?

Q6: Are there any sources that could be referred to in order to derive a benchmark sectoral value for low-carbon R&D investments? Please provide links.



See [\*ACT Iron & Steel\*](#) (p. 76) as an example.

### Description

- The approach used to assess companies in sectors for which a benchmark figure for the ratio of low-carbon R&D investment cannot be found, is to use a maturity matrix that sets a high figure (80%) as the required share for R&D investment into mature technologies, and 65% for non-mature technologies.
- See the following slide for an example of the maturity matrix used (from ACT Iron & Steel).



## 2.3. Module 3 – Intangible investment (2/3)

The assessment is based on the share of the company's R&D costs and/or investments in climate change mitigation-related technologies. The company's share will be compared to the maturity matrix developed to guide the scoring and a greater number of points will be allocated for companies indicating a higher level of maturity, which means a higher share in R&D costs/investments in these technologies.

Questions	Basic	Standard	Advanced	Next practice	Low-carbon aligned	Weighting
What is the share of R&D costs/investments in climate change mitigation technologies compared to the total R&D costs/investments?	Below 20%	Between 21% and 40%	Between 41% and 60%	Between 61% and 80%	Above 80%	50%

Currently, ACT AU V1 does not include the complementary indicator relating to low-carbon patenting activity (which is included in more recent ACT methodologies), entitled: “Company low-carbon patenting activity”

Q7: Do you agree with the proposal to add the indicator related to patenting activity into the Autos methodology?

Update proposal – ACT AU V2: Add the indicator “Company low-carbon patenting activity” into the Autos methodology



See [ACT Generic](#) (p. 52) as an example.

### Rationale

- We propose to include the indicator “Company low-carbon patenting activity” into the Autos methodology, since we consider companies’ low-carbon patenting activity to be complementary to their expenditure on R&D in low-carbon technologies. Assessing patenting activity monitors technology diffusion, whereas R&D expenditures monitors technology development.
- Patenting is certainly important for the sector to decarbonise: electric vehicle technology, innovation in materials, and efficient manufacturing processes are some examples where patents have been used by automotive manufacturers in the past and can still be used to reduce the life-cycle emissions from vehicles (IEA).

Currently, ACT AU V1 includes four indicators in Module 4, covering the company's downstream scope 3 (fleet) emissions performance, fleet emissions lock-in, low-carbon vehicle share and conventional ICE vehicle efficiency performance. There is no assessment of upstream scope 3 emissions from materials production.

Update proposal – ACT AU V2: Add indicator to assess upstream scope 3 emissions from materials production.

ACT Module 4 “Sold product performance”, assesses action to reduce emissions from companies' value chains, contributing to the overall decarbonisation of their products and/or services.

### **Rationale**

- The emissions from materials production are a significant share of the total life-cycle emissions for autos (currently around 18%), and this will increase to 35% in 2030 and 60% in 2040 with ambitious rollout of EVs, due both to the reduced in-use emissions from EVs, and increased emissions from producing materials, especially batteries (World Economic Forum).
- It is therefore increasingly important for automotive manufacturers to set targets for, and begin reducing, their upstream scope 3 emissions related to materials production.

### Options

1. Assess past and future upstream scope 3 (materials) emissions performance based on emissions intensity, using individual benchmarks for key materials.
2. Assess past and future upstream scope 3 (materials) emissions performance using the Absolute Contraction Approach (i.e., based on a generic absolute emissions reduction pathway that does not require specific benchmarks for different materials)
3. Assess action to reduce upstream scope 3 (materials) emissions qualitatively using the “Purchased product interventions” indicator.

More detail on each of the three options is given on the following slides.



See [\*ACT Iron & Steel\*](#) as an example of the “Upstream scope 3 emissions pathway” indicator (pp. 82-84), and the “Purchased product interventions” indicator (pp. 84-88)

### Option 1: Assess upstream emissions performance based on emissions intensity

- Rationale: Past and future performance indicators are found in some ACT methodologies (when relevant). They measure the alignment of a company's past and future (projected) emissions intensity respectively, with its low-carbon benchmark pathway.
- Challenges: In order to assess performance based on emissions intensity, a company benchmark must be derived from a decarbonisation pathway for the relevant sector/activities. In this case, decarbonisation pathways for several key materials would be needed in order to assess companies. These should be based on the materials that contribute most towards companies' upstream scope 3 emissions.
  - For example, for ICE vehicles, the largest contributor of upstream scope 3 emissions from materials production is steel, followed by aluminium, electrics & electronics, and polymers. For BEVs, battery cells are the largest contributor, followed by electrics & electronics, steel, aluminium, and polymers (Hirz & Nguyen)
  - If upstream scope 3 (materials) targets are to be assessed in this way, it will have to be validated which of these materials have decarbonisation pathways, in order to understand how many materials can be assessed. This adds significantly to the complexity of the indicator.

### Option 2: Assess upstream emissions performance using ACA

- Rationale: For sectors/activities for which it is overly complex to derive a sectoral benchmark, the Absolute Contraction Approach developed by the SBTi can be used (SBTi). This is based on a generic absolute emissions reduction pathway that does not require specific benchmarks for different materials.
- Challenges: The benchmark is not sector-specific, meaning it may be less accurate than a sector-specific emissions intensity pathway.

### Option 3: Assess action to reduce upstream emissions qualitatively using the “Purchased product interventions” indicator

- Rationale: For sectors/activities for which it is overly complex to derive a sectoral benchmark, another option is to assess the company’s actions towards reducing its upstream scope 3 emissions qualitatively by measuring the company's "interventions" on its purchased materials, i.e. the actions taken to reduce the carbon impact of its products / services. In the case of the automotive sector, these will be the main materials used to manufacture a vehicle, such as steel, aluminium, battery cells, etc.
- Challenges: The indicator does not have the strength of quantitatively assessing emissions performance, rather relying on actions or interventions as proxies for scope 3 emissions reductions. Nonetheless, companies should describe the rationale for emissions reduction connected to the intervention so that it is clear this potential exists.

Q8: Do you agree with the proposal to add an indicator to assess upstream scope 3 emissions from materials production to Module 4?

Q9: Which approach should be used to assess upstream scope 3 (materials) emissions?

Currently, ACT AU V1 Module 4 assesses the efficiency performance of ICE vehicles, but not of low-carbon vehicles.

Update proposal – ACT AU V2: Add a dimension to the efficiency indicator assessing the efficiency of low-carbon vehicles.

### Rationale

- The emissions reductions resulting from the transition to EVs are significantly lessened by the global trend towards heavier, larger cars, which are less efficient (in 2010, 17% of vehicles sold were SUVs, while in 2021 that value increased to 46%) (IEA).
- Energy efficiency is key to achieving the decarbonisation of the transport sector (IEA, ICCT). While much of this efficiency gain can be achieved just by switching away from ICE vehicles, the relative efficiency of EVs will become an increasingly important factor.
- While large, inefficient electric SUVs are still favourable to ICE vehicles, they have significantly higher lifecycle emissions than smaller, more efficient EVs. ACT analysis using the [calculator](#) tool (PSI) estimated that as there is a global shift from ICE vehicles to EVs in the coming decades, there could be around 20% more emissions savings from switching to smaller, efficient EVs compared to larger, inefficient electric SUVs.

## 2.4. Module 4 – Sold product performance (6/6)

### Description

- The proposed new indicator assesses the sales-weighted average efficiency of low-carbon vehicles sold in the reporting year, as well as the trend in average efficiency over the last three years.
- Efficiency is measured in miles per kWh.
- The thresholds for the first subdimension are based on the current best-in-class and worst-in-class efficiencies of EVs available today (Electric Vehicle Database).

Q10: Do you agree with the proposal to add an indicator assessing efficiency of low-carbon vehicles?

Q11: Do you agree with the thresholds and weightings proposed in the maturity matrix?

Q12: Are there any sources available to provide benchmark values for the thresholds in the maturity matrix?

Question	Basic	Standard	Advanced	Next practice	Low-carbon aligned	Weighting
Sales-weighted average power consumption of low-carbon vehicles sold in RY	Less than 3 miles per kWh	3-3.66	3.66-4.33	4.33-5	Greater than 5 miles per kWh	50%?
Trend over time (RY-3 to RY)	Average efficiency of low-carbon vehicles produced is decreasing over time	Average efficiency of low-carbon vehicles produced is increasing over time (0%-2% average change per year) (RY-3 to RY)	Average efficiency of low-carbon vehicles produced is increasing over time (2%-4% average change per year) (RY-3 to RY)	Average efficiency of low-carbon vehicles produced is increasing over time (4%-6% average change per year) (RY-3 to RY)	Average efficiency of low-carbon vehicles produced is increasing over time (>6% average change per year) (RY-3 to RY)	50%?



## 2.5. Modules 6 & 7 – Supplier & Client engagement ACT

Currently, ACT AU V1 includes only one indicator in Module 6: Supplier engagement, and Module 7: Client engagement.

Update proposal – ACT AU V2: Introduce standard Module 6 and 7 indicators while retaining the existing Module 7 indicator, “Efforts to promote sales of low-carbon vehicles”.

Q13: Should the standard Module 7 indicators be included in addition to the existing indicator “Efforts to promote sales of low-carbon vehicles”?



See [\*New qualitative indicators – actinative.org\*](#) to view the standard supplier and client engagement modules (pp. 13-25)

### Rationale

- Module 6 in AU V1 is similar to the current standard Module 6 which is used across sectors. In the interests of harmonisation, the standard Module 6 indicators will replace the current Module 6.
- Module 7 in AU V1 addresses an important lever for automotive manufacturers, promoting low-carbon vehicles, so the existing Module 7 indicator (“Efforts to promote sales of low-carbon vehicles”) will be kept.
- However, automotive manufacturers have various levers to engage with their clients (who may not only be end consumers, but others such as dealerships). As such, the standard Module 7 indicators may be included additionally. The disadvantage of this option is that the relative importance of each indicator will be low, since the overall module retains the same weighting.

Currently, ACT AU V1 does not include ACT indicator 8.4 “Collaboration with local public authorities”, which is included as an indicator in many newer methodologies.

Q14: Do you agree with the proposal to add the indicator “Collaboration with local public authorities”?

Update proposal – ACT AU V2: Include Indicator 8.4 “Collaboration with local public authorities” in the updated Autos methodology.



See [\*New qualitative indicators – actinative.org\*](#) to view the indicator 8.4 “Collaboration with local public authorities” (pp. 31-33)

### Rationale

- We propose to add indicator 8.4 “Collaboration with local public authorities” into the updated Autos methodology. This indicator evaluates the extent to which the company collaborates with local public authorities and local actors to achieve local emissions reductions. Since this indicator is one of the standard qualitative indicators used across many newer methodologies, it is considered relevant to include in AU V2.

## **Slide 7:**

- European Commission. “EU taxonomy for sustainable activities”. [https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities\\_en](https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en)

## **Slide 8:**

- Transport & Environment. 2023 “Plug-in hybrids pollute more than claimed in cities and on commutes, new tests show”. <https://www.transportenvironment.org/discover/plug-in-hybrids-pollute-more-than-claimed-in-cities-and-on-commutes-new-tests-show/>

## **Slide 14:**

- World Economic Forum, McKinsey & Company. 2021 “Forging Ahead: A materials roadmap for the zero-carbon car”. <https://www.weforum.org/reports/forging-ahead-a-materials-roadmap-for-the-zero-carbon-car/>

## **Slide 15**

- Hirz, M., & Nguyen, T. 2022. “Life-Cycle CO<sub>2</sub>-Equivalent Emissions of Cars Driven by Conventional and Electric Propulsion Systems”. [https://www.researchgate.net/publication/359618965\\_Life-Cycle\\_CO2-Equivalent\\_Emissions\\_of\\_Cars\\_Driven\\_by\\_Conventional\\_and\\_Electric\\_Propulsion\\_Systems](https://www.researchgate.net/publication/359618965_Life-Cycle_CO2-Equivalent_Emissions_of_Cars_Driven_by_Conventional_and_Electric_Propulsion_Systems)

## **Slide 16:**

- WWF & Ecofys. 2011 “The Energy Report”. <https://www.worldwildlife.org/publications/the-energy-report>

## **Slide 18**

- IEA. 2021. “Patents and the energy transition”. <https://www.iea.org/reports/patents-and-the-energy-transition>

## **Slide 22:**

- ICCT. 2020 “Vision 2050: a strategy to decarbonize the global transport sector by mid-century”. <https://theicct.org/publication/vision-2050-a-strategy-to-decarbonize-the-global-transport-sector-by-mid-century/>
- IEA. 2021 “Net Zero by 2050: A Roadmap for the Global Energy Sector”. <https://www.iea.org/reports/net-zero-by-2050>
- IEA. 2022 “Cars and Vans”. <https://www.iea.org/reports/cars-and-vans>
- IEA. 2023 “Global EV Outlook 2023”. <https://www.iea.org/reports/global-ev-outlook-2023>
- PSI. “calculator online 1.3.0”. <https://calculator.psi.ch/>
- SBTi. 2019 “Foundations of Science-based Target Setting”. <https://sciencebasedtargets.org/resources/?tab=background>

## **Slide 23:**

- Electric Vehicle Database. “Energy consumption of electric vehicles”. <https://ev-database.org/uk/cheatsheet/energy-consumption-electric-car>

# Thank you for your feedback!

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Any questions? Please reach out to Jacob Buckton at [jacob.buckton@cdp.net](mailto:jacob.buckton@cdp.net).