Guidance for responding companies: sector module guidance

Auto and Auto Component Manufacturing Sector Module 2017

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Version Control

Version Nr.	Revision Date	Released	Revision Summary
0.2	January 2017	January 2017	Version 0.2 of the 2017 CDP auto and auto component manufacturing sector module guidance has been prepared for the disclosure period commencing in February 2017. It is a re-release of the advance version of this guidance (version 0.1, released in December 2016).

Contents

Introduction to Auto and Auto Component Manufacturing Module Guidance

General Guidance

The auto module is based on a reporting framework produced by the Institutional Investors Group on Climate Change (IIGCC), Ceres, and the Investor Group on Climate Change Australia/New Zealand (IGCC).

It should be completed by manufacturers of non-commercial vehicles and non-commercial vehicle components. The scope encompasses all passenger cars, light trucks, Sports Utility Vehicles (SUVs) and Multi-Purpose Vehicles (MPVs, also known as minivans) to the extent that they can be sold and used for individual passenger transport, as well as components for these vehicles.

We suggest that companies use generally accepted nomenclatures of vehicle segmentation. Companies should provide an explanation if: a different vehicle segmentation system is used; data cannot be provided according to the proposed nomenclature; data is unavailable; and/or, data is commercially sensitive.

If you responded to the Auto module last year you can import your responses to selected questions in pages AU0, AU1, AU2 and AU3, from last year's questionnaire. For information on the specific questions that are eligible please see the general guidance for each of these pages, below. To use this option, click on the "Copy from last year" button at the bottom of the given page before entering any other data. Please ensure that you review your imported responses to determine whether they are still appropriate for the reporting year and edit them as necessary.

The auto module is not scored as part of the CDP 2017 scoring methodology with the exception of the following case: auto manufacturers may choose to refer to information on methodology given in answer to the auto module question AU2.2 in their answer to CC14.1 of the core climate change questionnaire for use of sold products. This information will be scored provided that the data-user is directed from the methodology column of CC14.1 to AU2.2.

AU0: Reference dates

General Guidance

If you completed AU0.1 last year, it is possible to pre-populate this year's table in AU0.1 with that data. The "Copy from last year" button must be clicked before you have completed any fields on this page. You should then add a new row to the table in order to specify the date range of the current reporting year.

Specific Question Guidance

AU0.1: Please enter the dates of the periods for which you will be providing data in subsequent tables. The years given as column headings in subsequent tables correspond to the year ending dates selected below

Year ending	Date range
Select from: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2021 *Note that data for 2020 is not requested and is therefore absent from this list.*	Calendar entry field

In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

In column 1 select from the drop-down menu of years. Specify the start and end dates of the year in column 2. For example, for the date November 3, 2015, enter as 03/11/2015. Note that the following forecasts are requested within the module: sales volumes (section AU1) for years ending 2017, 2018 and 2019; emissions data (section AU2) (in gCO2/km or gCO2/mile) for years ending 2017, 2019 and 2021; and provision of clean technologies (section AU3) for year ending 2021. **Data for 2020 is not requested and is therefore absent from the drop-down list**.

It may be useful for companies to review subsequent questions before deciding what dates to enter in the table above. Most of the following questions apply to auto-manufacturers only. Therefore, auto-equipment manufacturers should go to AU3.1g and AU3.5 to see what information they are being asked to provide and then return to this question (AU0.1) and supply dates for two periods (one year ending in 2016 and the other year ending in 2021). They should then complete AU3.1g and, if appropriate, AU3.5. Auto-manufacturers should review the whole module, return to this question (AU0.1), enter the dates, and then complete the relevant questions.

AU1: Sales volumes

General Guidance

Please give all sales figures throughout section AU1 in units of thousands of vehicles, rounded to the nearest hundred, e.g. 38,490 vehicles sold should be entered as "38.5". Auto manufacturers should provide an overview of their historic, current and planned sales volumes by fuel type/engine technology and if possible by region and segment type.

If you completed the following tables last year, it is possible to pre-populate this year's tables AU1.1a-i, AU1.2a-h, and AU1.3a-c with that data. The "Copy from last year" button must be clicked before you have completed any fields on this page. You can then add data for further years. If you reported estimated sales volumes last year for forecast years, these will not be carried forwards into this year's tables in order to avoid confusion with actual sales volumes.

Pre-population is not available for AU1.1j, AU1.2i, AU1.3d as these request narrative answers that are more likely to change. If you do alter any data that has been copied over from the previous year, identify the information that has been amended in the "Further Information" field at the bottom of the page and notify CDP of the amendment by emailing respond@cdp.net

Definition of vehicle segments

US segmentation

PASSENGER CARS			
Class			**Passenger & cargo volume (Cu.Ft.)**
Two-seaters:			Any (cars designed to seat only two adults)
Sedans		Mini-compact	<85
		Sub-compact	85-99
		Compact	100-109
		Mid-size	110-119
		Large	120 or more
Station wagons		Small	<130
		Mid-size	130-159
		Large	160 or more
LIGHT TRUCKS			
Class		**Gross Vehicle Weight Rating (GVWR)**	
		Through model year 2007	**Beginning model year 2008**
Pick-up trucks	Small	<4,500 pounds	<6,000 pounds
	Standard	4,500-8,500 pounds	6,000-8,500 pounds
Vans	Passenger; Cargo; Minivans; Sport Utility Vehicles; Special Purpose Vehicles	<8,500 pounds	

European segmentation

The categories are derived from ACEA/AAA nomenclature:

- Segment A-B: Small cars
- Segment C (or M1): Lower medium
- Segment D (or M2): Upper medium
- Segment E-F: Executives

Japanese segmentation

Sales of passenger cars should be segmented on the basis of the Japanese Automotive Manufacturers Association (JAMA) nomenclature:

- Large
- Standard
- Small
- Mini

Chinese segmentation

The categories are derived from the China Association of Automobile Manufacturers (CAAM) nomenclature:

- Segment A
- Segment B
- Segment C
- Segment D
- Segment E
- MPV
- SUV

Indian segmentation

The categories are derived from the Society of Indian Automobile Manufacturers (SIAM) nomenclature:

- A1
- A2
- A3
- A4
- A5
- A6
- B1
- B2
- SUV

Geographical Definitions

EU (EU-28): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. Plus, EFTA: Iceland, Norway, and Switzerland.

Specific Question Guidance

AU1.1a: Sales (in thousands) of gas/petrol vehicles - Country totals

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China – imports										
China – domestic production										
India										
Brazil										
Russia										
Other										
Total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop “.” to indicate the decimal point. Do not use a comma “,”. The “Other” row is the aggregate of sales in countries/regions that have not been individually listed. The “Total” row is the aggregate of the figures in preceding rows.

AU1.1b: Sales (in thousands) of gas/petrol vehicles - USA - Passenger vehicles

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Two-seaters Sedans mini-compact Sedans sub-compact Sedans compact Sedans mid-size Sedans large Station wagons small Station wagons mid-size Station wagons large Passenger car total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries. The "Passenger car total" row is the aggregate of the figures in preceding rows.

AU1.1c: Sales (in thousands) of gas/petrol vehicles - USA - Light Trucks & SUVs

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Pick-up Van SUV Others Light trucks & SUVs total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries. The "Others" row is the aggregate of segment types in "Light trucks & SUVs" category that have not been listed. The "Light trucks & SUV total" row is the aggregate of the figures in preceding rows.

AU1.1d: Sales (in thousands) of gas/petrol vehicles - EU

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Segment A-B Segment C Segment D Segment E-F Others										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries. "Others" should be used to provide aggregate figures for segment types that are not listed.

AU1.1e: Sales (in thousands) of gas/petrol vehicles – Japan

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Large Standard Small Mini										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.1f: Sales (in thousands) of gas/petrol vehicles – China – imports

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Segment A Segment B Segment C Segment D Segment E MPV SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.1g: Sales (in thousands) of gas/petrol vehicles – China – domestic production

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Segment A Segment B Segment C Segment D Segment E MPV SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.1h: Sales (in thousands) of gas/petrol vehicles – India

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: A1 A2 A3 A4 A5 A6 B1 B2 SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.1i: Sales (in thousands) of gas/petrol vehicles – Brazil

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Small Medium Large MPV SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.1j: Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

If you have not been able to provide information in answer to AU1.1a-i, please provide an explanation in the text box provided in the ORS using no more than 5,000 characters.

AU1.2a: Sales (in thousands) of diesel vehicles - Country totals

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China – imports										
China – domestic production										
India										
Brazil										
Russia										
Other										
Total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". The "Other" row is the aggregate of sales in countries/regions that have not been individually listed. The "Total" row is the aggregate of the figures in preceding rows.

AU1.2b: Sales (in thousands) of diesel vehicles – USA

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Passenger car total										
Light trucks & SUVs total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

AU1.2c: Sales (in thousands) of diesel vehicles – EU

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Segment A-B Segment C Segment D Segment E-F Others										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries. "Others" should be used to provide aggregate figures for segment types that are not listed.

AU1.2d: Sales (in thousands) of diesel vehicles – Japan

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Large Standard Small Mini										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.2e: Sales (in thousands) of diesel vehicles – China – imports

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Segment A Segment B Segment C Segment D Segment E MPV SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.2f: Sales (in thousands) of diesel vehicles – China – domestic production

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Segment A Segment B Segment C Segment D Segment E MPV SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.2g: Sales (in thousands) of diesel vehicles – India

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: A1 A2 A3 A4 A5 A6 B1 B2 SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.2h: Sales (in thousands) of diesel vehicles – Brazil

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Select from: Small Medium Large MPV SUV										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU1.2i: Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

If you have not been able to provide information in answer to AU1.2a-h, please provide an explanation in the text box provided in the ORS using no more than 5,000 characters.

AU1.3a: Sales (in thousands) of battery electric vehicles (BEV) by region

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China – imports										
China – domestic production										
India										
Brazil										
Russia										
Other										
Total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". The "Other" row is the aggregate of sales in countries/regions that have not been individually listed. The "Total" row is the aggregate of the figures in preceding rows.

AU1.3b: Sales (in thousands) of plug-in hybrid electric vehicles (PHEV) by region

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China – imports										
China – domestic production										
India										
Brazil										
Russia										
Other										
Total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". The "Other" row is the aggregate of sales in countries/regions that have not been individually listed. The "Total" row is the aggregate of the figures in preceding rows.

AU1.3c: Sales (in thousands) of other alternatively-powered vehicles - Country totals

This category includes vehicles powered by Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), fuel cells and compressed air.

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China – imports										
China – domestic production										
India										
Brazil										
Russia										
Other										
Total										

Please give sales figures in thousands of vehicles, rounded to the nearest hundred. Columns 2 to 11 will accept numbers with up to one decimal place, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". The "Other" row is the aggregate of sales in countries/regions that have not been individually listed. The "Total" row is the aggregate of the figures in preceding rows.

AU1.3d: Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

If you have not been able to provide information in answer to AU1.3a-c, please provide an explanation in the text box provided in the ORS using no more than 5,000 characters.

AU2: Regulatory compliance

General guidance

This set of questions covers the CO_2 emissions from vehicles you have sold and anticipate selling, before and after credits received, and sales-weighted regulatory parameters. This applies to auto manufacturers only.

Data reported to CDP should be the same as that reported to regulators when applicable.

Investors realize that emission indicators may vary from country to country, but they expect auto manufacturers to provide historical and projected CO_2 emissions (in gCO_2/km or gCO_2/mile).

Conversion factors

The conversion factors used for converting fuel economy into CO_2 emissions per unit are detailed in the table below.

Fuel used	Units	Kg CO2 per unit
Gas/petrol	Liters	2.3154
	Gallons	8.8741
Diesel	Liters	2.6304
	Gallons	10.153
Compressed Natural Gas (CNG)	Kg	2.7278
Liquefied Petroleum Gas (LPG)	Liters	1.4975
	Gallons	5.8082

Sources: UK Defra (2007), US Energy Information Administration – DOE (2008). Companies using different conversion factors should list those factors and provide an explanation together with sources/references.

If you responded last year, it is possible to pre-populate question AU2.2 and AU2.3a-c with that data. The “Copy from last year” button must be clicked before you have completed any fields on this page. Pre-population is not available on AU2.1 and AU2.3d as these request narrative answers that are more likely to change.

Specific Question Guidance

AU2.1: Please explain any historic and anticipated changes in the CO_2 emissions profile of vehicles sold (e.g. introduction of clean technologies, changes to sales mix) for the time period 2010-2021

Please respond to this question in the text box provided in the ORS using no more than 5,000 characters.

AU2.2: Please explain the methodology used to calculate CO_2 emissions from sold vehicles and any differences with data published by industry associations or governmental agencies or the methodologies they have used

As the US Environmental Protection Agency adapted its driving cycles after 2007, companies should indicate if and when historical data for average Corporate Average Fuel Economy (CAFE) have been recalculated using the new driving cycles (Reformed CAFE). More generally, companies are encouraged to provide comparable data over time and indicate changing methods.

Please respond to this question in the text box provided in the ORS using no more than 5,000 characters.

AU2.3a: Sales-weighted fleet average CO_2 emissions for all vehicles sold, before credits received

This category includes vehicles powered by internal combustion engines as well as alternatively powered vehicles.

Country	Units	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2019 estimated	2021 estimated
USA	Select from: gCO_2/km $gCO_2/mile$										
EU											
Japan											
China – imports											
China – domestic production											
India											
Brazil											
Russia											
Other											

Select the units that you will be using in column 2. Columns 3 to 12 will accept numbers with up to two decimal places, up to and including 10000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". The "Other" row is the average emissions intensity for countries/regions that have not been individually listed.

AU2.3b: Sales-weighted fleet average CO_2 emissions for all vehicles sold, after credits received

This category includes vehicles powered by internal combustion engines as well as alternatively powered vehicles.

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2019 estimated	2021 estimated	Comment
USA											
EU											
Japan											
China – imports											
China – domestic production											
India											
Brazil											
Russia											
Other											

Please report figures in AU2.3b using the same units selected for the given regions reported in the preceding question, AU2.3a. Columns 2 to 11 will accept numbers with up to two decimal places, up to and including 10000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". Please add any relevant comments in column 12, which will accept up to 2400 characters. The "Other" row is the average emissions intensity for countries/regions that have not been individually listed.

AU2.3c: Sales-weighted regulatory parameters

Country and parameter	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2019 estimated	2021 estimated
USA: Sales-weighted average vehicle footprint (square feet)										
EU: Sales-weighted average running order mass (kg)										
Japan: Sales-weighted average vehicle curb weight (kg)										
China – imports: Sales-weighted average curb mass (kg)										
China – domestic production: Sales-weighted average curb mass (kg)										

Sales-weighted average vehicle footprint is the sum of the footprint of each vehicle sold divided by the total number of vehicles sold, and sales-weighted average mass (sometimes called 'weight') is the sum of the mass of each vehicle sold divided by the total number of vehicles sold. Columns 2 to 11 will accept numbers with up to two decimal places, up to and including 10000. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

AU2.3d: Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

If you have not been able to provide information in answer to AU2.3a-c, please provide an explanation in the text box provided in the ORS using no more than 5,000 characters.

AU3: Clean technologies

General Guidance

There are two sets of questions under AU3.1: one for auto-manufacturers (AU3.1a-f) and one for auto-equipment manufacturers (AU3.1g). In AU3.1a-f, auto-manufacturers are asked to give the percentage of their range of vehicles for which various technologies are available. So, if four out of the eight models of vehicle that you make have the technology in question, then the percentage to enter would be 50%. The scope encompasses all passenger cars, as well as light trucks and Sports Utility Vehicles (SUVs) to the extent that they can be sold and used for individual passenger transport. In AU3.1g-gvi, auto-equipment manufacturers are asked if they currently provide, and anticipate providing, the technologies that are listed.

Questions AU3.2-3.4 apply only to auto-manufacturers. Question AU3.5 applies to both auto-manufacturers and auto-equipment manufacturers.

Pre-population is available for questions AU3.2 and AU3.3, though you should remove rows copied over for any vehicle models no longer available during the current reporting period.

Specific Question Guidance

AU3.1a: Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

Technology category – ICE

Type	2016	2021 estimated
Select from: Improving direct injection Downsizing with turbo charge Optimized / Advanced cooling circuit Exhaust heat recovery Flexfuel (>B20: > E30) Other (please specify)		

Select the technology type in column 1. In Columns 2 and 3 enter the percentage of your range for which the technology type is available. Enter a figure from 0 to 100. They will take up to two decimal places. Use a full stop “.” to indicate the decimal point. Do not use a comma “,”. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.1b: Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

Technology category – Hybrids

Type	2016	2021 estimated
Select from: Start & stop Start & stop regenerative braking Mild hybrid (motor assisted) Full hybrid (electric drive) Plug-in hybrid Other (please specify)		

Select the technology type in column 1. In Columns 2 and 3 enter the percentage of your range for which the technology type is available. Enter a figure from 0 to 100. They will take up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.1c: Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

Technology category – Zero emissions

Type	2016	2021 estimated
Select from: Full electric Hydrogen fuel cell Compressed air Other (please specify)		

Select the technology type in column 1. In Columns 2 and 3 enter the percentage of your range for which the technology type is available. Enter a figure from 0 to 100. They will take up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.1d: Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

Technology category – Transmission

Type	2016	2021 estimated
Select from: Optimized gearbox ratios Piloted gearbox Dual-clutch Other (please specify)		

Select the technology type in column 1. In Columns 2 and 3 enter the percentage of your range for which the technology type is available. Enter a figure from 0 to 100. They will take up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.1e: Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

Technology category – Body

Type	2016	2021 estimated
Select from: Improved aerodynamic efficiency Weight reduction Other (please specify)		

Select the technology type in column 1. In Columns 2 and 3 enter the percentage of your range for which the technology type is available. Enter a figure from 0 to 100. They will take up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.1f: Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

Technology category – Others

Type	2016	2021 estimated
Select from: Low-rolling resistance tires Advanced after-treatment Other (please specify)		

Select the technology type in column 1. In Columns 2 and 3 enter the percentage of your range for which the technology type is available. Enter a figure from 0 to 100. They will take up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",". In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.1g: Auto-equipment manufacturers only – please select the technology categories that are relevant to your business:

- ICE
- Hybrids
- Zero emissions
- Transmission
- Body
- Others

The selection above will trigger tables AU3.1gi through AUG3.1gvi as appropriate.

AU3.1gi: Technology category – ICE – please state if you provide the following technologies:

Type	2016	2021 estimated
Select from: Improving direct injection Downsizing with turbo charge Optimized / Advanced cooling circuit Exhaust heat recovery Flexfuel (>B20: > E30) Other (please specify)	Select from: Yes No	Select from: Yes No

Select a technology type in column 1 and in columns 2 and 3 state your current and anticipated positions using the drop down menus. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.1gii: Technology category – Hybrids – please state if you provide the following technologies:

Type	2016	2021 estimated
Select from: Start & stop Start & stop regenerative braking Mild hybrid (motor assisted) Full hybrid (electric drive) Plug-in hybrid Other (please specify)	Select from: Yes No	Select from: Yes No

Select a technology type in column 1 and in columns 2 and 3 state your current and anticipated positions using the drop down menus. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.1giii: Technology category – Zero emissions – please state if you provide the following technologies:

Type	2016	2021 estimated
Select from: Full electric Hydrogen fuel cell Compressed air Other (please specify)	Select from: Yes No	Select from: Yes No

Select a technology type in column 1 and in columns 2 and 3 state your current and anticipated positions using the drop down menus. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.1giv: Technology category – Transmission – please state if you provide the following technologies:

Type	2016	2021 estimated
Select from: Optimized gearbox ratios Piloted gearbox Dual-clutch Other (please specify)	Select from: Yes No	Select from: Yes No

Select a technology type in column 1 and in columns 2 and 3 state your current and anticipated positions using the drop down menus. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.1gv: Technology category – Body – please state if you provide the following technologies:

Type	2016	2021 estimated
Select from: Improved aerodynamic efficiency Weight reduction Other (please specify)	Select from: Yes No	Select from: Yes No

Select a technology type in column 1 and in columns 2 and 3 state your current and anticipated positions using the drop down menus. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.1gvi: Technology category – Others – please state if you provide the following technologies:

Type	2016	2021 estimated
Select from: Low-rolling resistance tires Advanced after-treatment Other (please specify)	Select from: Yes No	Select from: Yes No

Select a technology type in column 1 and in columns 2 and 3 state your current and anticipated positions using the drop down menus. In the ORS, use the “Add Row” button to the bottom right of the table to make multiple entries.

AU3.2: Auto-manufacturers only – Please provide the following details for existing and new BEV and FCV models available during the current reporting period

Model name	Technology	Market	Retail price currency	Market retail price	Range units	Urban electric range	Extra-urban electric range	Combined electric range	Minimum electric charge time (hours)	Maximum electric charge time (hours)
	Select from: BEV FCV				*Select from:* km miles					

Report the model name in column 1, which will accept up to 1000 characters. Indicate the model technology by selecting either BEV or FCV from the drop-down options in column 2. Report the market of the given vehicle model in column 3, which will accept up to 1000 characters. Select the retail price currency from the drop-down options in column 4, and report the market retail price in column 5, which will accept numbers up to and including 1000000000000000 with up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

In column 6, select the range units that you will be using to report model ranges, in columns 7-9. In columns 10 and 11 report minimum and maximum charge times, in hours. Columns 7 to 11 will accept numbers with up to two decimal places, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.3: Auto-manufacturers only – Please provide the following details for existing and new PHEV models available during the current reporting period

Model name	Market	Retail price currency	Market retail price	Emissions units	Urban emissions	Extra-urban emissions	Combined emissions	Fuel consumption units	Urban fuel consumption	Extra-urban fuel consumption	Combined fuel consumption	Range units	Urban electric range	Extra-urban electric range	Combined electric range	Minimum electric charge time (hours)	Maximum electric charge time (hours)
				Select from: gCO2/km gCO2/mile				Select from: L/100km MPG				Select from: km miles					

Report the model name in column 1, and the market of the given vehicle model in column 2, which will both accept up to 1000 characters. Select the retail price currency from the drop-down options in column 3, and report the market retail price in column 4, which will accept numbers up to and including 1000000000000000 with up to two decimal places. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

In column 5, select the emissions units that you will be using to report model emissions, in columns 6-8, which will accept numbers with up to two decimal places, up to and including 10000. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

In column 9, select the fuel consumption units that you will be using to report model fuel consumption, in columns 10-12, which will accept numbers with up to two decimal places, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

In column 13, select the range units that you will be using to report model ranges, in columns 14-16. In columns 17 and 18 report minimum and maximum charge times, in hours. Columns 14 to 18 will accept numbers with up to two decimal places, up to and including 100000. Use a full stop "." to indicate the decimal point. Do not use a comma ",".

In the ORS, use the "Add Row" button to the bottom right of the table to make multiple entries.

AU3.4: Auto manufacturers only – Please indicate your spend in the following research and development (R&D) categories for the reporting year

Type	R&D spend (currency in CC0.4)	Comment
Optimizing combustion engine vehicles		
Traditional hybrids		
Advanced vehicles (BEV, PHEV, FCV)		
Autonomous vehicles		
Other		

Please report you research and development spend in column 2, which will accept numbers with up to two decimal places, up to and including 1000000000000000. Use a full stop "." to indicate the decimal point. Do not use a comma ",". The currency is the same as that selected in question CC0.4 in the introduction of the climate change questionnaire. Please add any relevant comments in column 3, which will accept up to 2400 characters.

AU3.5: For both auto manufacturers and auto-equipment manufacturers: please provide an explanation if data cannot be provided according to the proposed nomenclature or if it is unavailable or commercially sensitive

If you have not been able to provide information in answer to AU3.1-3.4, please provide an explanation in the text box provided in the ORS using no more than 5,000 characters.