Datenportal Bus – Data points

06 March 2024

Edition 1 (English)

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1 Preamble

The accompanying research of the guideline for the funding of alternative drive systems for buses in passenger transport (Richtlinie zur Förderung alternativer Antriebe für Busse im Personenverkehr) of the Federal Ministry for Digital and Transport (Bundesministerium für Digitales und Verkehr – BMDV) aims to bundle and evaluate findings from the use of buses with alternative drive systems and to make the anonymized results available to the professional audience. It follows on from the accompanying research of past federal bus funding programs, the final report of which can be found here. To be able to create relevant and reliable evaluations, data is collected from the funded companies as part of the accompanying research.

In this document you will find all the base data and operating data requested as part of the accompanying research of above mentioned funding guideline. Base data must be entered once, while operating data is to be submitted at regular intervals using an Excel template. Both types of data are collected via the NOW GmbH bus data portal. An account is created for subsidized companies on request at datenportal-bus@now-gmbh.de or when subsidized buses are procured.

The requested base data is listed in Tables A1 to A4 and the operating data in Tables A5 to A8. Table A9 contains further information on selected data points of the base data and operating data.

The requested base data and operating data are based on the minimum data set. With regard to the bus companies the minimum data set was reduced and categorized into mandatory (A), desirable (B) and optional (C) data points. This means that limited data deliveries are possible and contribute to meaningful evaluations. However, we ask that the data points marked as desirable or optional

are always considered and, if possible, provided to ensure that the overall picture in the accompanying research is as complete as possible. Furthermore, only those data points that are relevant for the corresponding technology should be provided for a bus or a charging station/filling station. This is indicated in Tables A1 to A8 in the "Technology" column with the entries "All", "Biomethane", "BEV", "Charging station", "FCEV", "REX" and "H2 filling station". In the data delivery for an exemplary project in which battery buses and the associated charging infrastructure were funded, only the data points with the technology entries "All", "BEV" and "Charging station" are relevant.

Numerical values must generally be entered as integers (without decimal point or delimiters). Exceptions are: Substitution factor in the project base data and latitude and longitude in the charging/fueling base data.

The Excel templates for the operating data can be downloaded from the data portal and must be provided in unchanged format (column names, column sequence, header line) when uploading operating data.

Further instructions with details on data delivery and using the data portal can be found here (in German). If you have any questions or problems related to the data portal or data delivery, please email us at datenportal-bus@now-gmbh.de.

2 Attachment

A1 Project Base Data

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Funding code (without suffix)		A	03TB1234	see table A9
	Can an operational area of the buses be specified?		A	yes	see table A9
	Zip code of the main depot		A	10623	Only visible under the condition: Can an area of use for the buses be specified? answered with "yes"
	Supporting ministry		A	BMDV	
	Planned operating time of the buses in years	years	A	12	
	Substitution factor		A	1,1	see table A9
	Percentage of renewable energies in bus operation (at the start of the project)	%	A	0	see table A9
	Percentage of renewable energies in bus operations (end of 2030)	%	A	50	see table A9
	Planned construction of power plants		A	Yes	see table A9
	Which power plants are planned?		A	Roof solar system on e-bus parking garage	Only visible under the condition: Planned construction of energy generation plants answered with "yes"
	Buffer storage		A	Yes	see table A9
	Buffer storage capacity	kWh	B	1000	Only visible under the condition: Buffer storage answered with "yes"
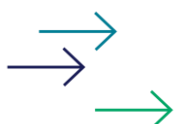
Technology	Data Point	Unit / Format	Category	Example	Remark
All	Type of access to bus operating data		A	Online dashboard of the OEM	see table A9
	Type of access to Charging/Fueling operating data		A	Charging management software	see table A9

A2 Vehicle Base Data

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Vehicle ID		A	VEH_1	see table A9
	Technology		A	Battery bus	
	Conversion		A	no	
	Costs of acquisition/conversion	€	A	650000	
	Comment on acquisition costs		C		see table A9
	Reference bus: acquisition costs	€	B	250000	
	Delivery time of the bus in months		A	12	Only visible under the condition: Conversion answered with "no"
	Vehicle class		A	M3 CA	see table A9
	Operational area		A	several lines	see table A9
	Line number(s)		C	101, 102, 203	Only visible under the condition: Application area answered with "one line" or "several lines"
	Average stop distance	m	C	400	Only visible under the condition: Area of application answered with "one line"
	Notes on the vehicle		C		
	Model series name		A	[Selection list]	see table A9
	Construction year		A	2023	see table A9
	Chassis manufacturer		A	[Selection list]	see table A9
	Vehicle segment		A	Solobus (longer than 10,6 m)	
	Manufacturer Powertrain technology (motor)		A	[Selection list]	see table A9
	Bus lifetime expectancy	years	B	12	see table A9
	Heating technology		A	electric heat pump	
	Power input for heating	kW	A	50	Only visible under the condition: Heating technology answered with "electric - heat pump" or "electric - resistance/PTC heating"
	Tank size of the additional energy source for heating	l	A	10	Only visible under the condition: Technology Heating answered with "Auxiliary heater with biodiesel fuel", "Auxiliary heater with bioethanol fuel" or "Auxiliary heater with diesel fuel"
	Cooling technology		A	Electric roof-mounted driver air conditioning	
	power input for cooling	kW	A	50	
	Number of doors		A	3	
	max. number of passengers		A	85	Including standing area
	Passenger counting system or measuring system for vehicle loading available?		A	yes	
	Optional: measuring principle for H2 consumption		C		see table A9
	Optional: measuring principle for fuel cell power generator		C		see table A9

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Optional: measuring principle for energy storage		C		see table A9
	Optional: measuring principle for electric motor		C		see table A9
	Optional: measuring principle for HV generator		C		see table A9
	Optional: measuring principle for on-board electrical system		C		see table A9
	Optional: measuring principle for HVAC		C		see table A9
Biomethane	Gas tank capacity	kg	A	60	
BEV	Storage technology Battery		A	Lithium-Nickel-Mangan-Cobalt-Oxide	
	Battery manufacturer		A	[Selection list]	see table A9
	Battery storage capacity	kWh	A	500	
	Battery life expectancy	years	A	6	
	Usable battery energy content	kWh	B	460	
	Battery business model		A	Purchase	
	Warranty on the battery in years	years	A	12	Only visible under the condition: Business model battery answered with "Purchase"
	Charging technology		A	conductive connector	see table A9
	Charging coupler		A	CCS	Only visible under the condition: Charging technology with "inductive" or "conductive plug" answered
	max. charging power	kW	A	150	
	Max. charging voltage	V	A	450	
	Max. charging current	A	A	50	
	Charging strategy		A	Depot charger	
	Charging technology 2		C	Conductive Pantograph	
	Charging coupler 2		C		Only visible under the condition: Charging technology 2 answered with "inductive" or "conductive plug"
	max. charging capacity 2	kW	C	150	Only visible under the condition: Charging technology 2 answered with "inductive", "conductive plug" or "conductive pantograph"
	max. charging voltage 2	V	C	450	Only visible under the condition: Charging technology 2 answered with "inductive", "conductive plug" or "conductive pantograph"
	Max. charging current 2	A	C	50	Only visible under the condition: Charging technology 2 answered with "inductive", "conductive plug" or "conductive pantograph"
	Data provision for energy demand for electrical heating/air conditioning		A	2 channels	see table A9
FCEV	Fuel cell manufacturer		A	[Selection list]	see table A9
	Tank capacity H2	kg	A	35	
	Fuel cell operating life expectancy	years	A	10	
	Warranty on the fuel cell in years	years	A	10	
	Storage technology Battery		A	Lithium-Nickel-Mangan-Cobalt-Oxide	

Technology	Data Point	Unit / Format	Category	Example	Remark
FCEV	Battery manufacturer		A	[Selection list]	see table A9
	Battery storage capacity	kWh	A	60	
	Battery life expectancy	years	A	6	
	Usable battery energy content	kWh	B	50	
	Warranty on the battery in years	years	A	12	Only visible under the condition: Business model battery answered with "Buy"
	Data provision for energy demand for electrical heating/air conditioning		A	2 channels	See table A9
REX	Fuel cell manufacturer		A	[Selection list]	see table A9
	Fuel cell operating life expectancy	years	A	10	
	Storage technology Battery		A	Lithium-Nickel-Mangan-Cobalt-Oxide	
	Battery manufacturer		A	[Selection list]	see table A9
	Battery storage capacity	kWh	A	100	
	Battery life expectancy	years	A	6	
	Usable battery energy content	kWh	B	90	
	Battery business model	1	A	Purchase	
	Warranty on the battery in years	years	A	12	Only visible under the condition: Business model battery answered with "Purchase"
	Charging technology		A	Conductive connector	
	Charging coupler		A	CCS	Only visible under the condition: Charging technology with "inductive" or "conductive plug" answered
	max. charging power	kW	A	150	
	Max. charging voltage	V	A	450	
	Max. charging current	A	A	50	
	Charging technology 2		C	Conductive pantograph	
	Charging coupler 2		C		Only visible under the condition: Charging technology 2 answered with "inductive" or "conductive plug"
	max. charging capacity 2	kW	C	150	Only visible under the condition: Charging technology 2 answered with "inductive", "conductive plug" or "conductive pantograph"
	max. charging voltage 2	V	C	450	Only visible under the condition: Charging technology 2 answered with "inductive", "conductive plug" or "conductive pantograph"
	Max. charging current 2	A	C	50	Only visible under the condition: Charging technology 2 answered with "inductive", "conductive plug" or "conductive pantograph"
	Datenbereitstellung Energiebedarf elektr. Heizung/Klimatisierung		A	2 channels	see table A9

A3 Charging/fueling Base Data

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Charging station/filling station ID		A	LS_1	see table A9

Technology	Data Point	Unit / Format	Category	Example	Remark
	Type of infrastructure		A	Charging station	
	Costs of the device	€	A	70000	see table A9
All	Installation costs	€	A	10000	see table A9
	Model name		A		
	Manufacturer		A	[Selection list]	see table A9
	Zip code Location		A	10623	
	Latitude	Decimal degree WGS84	A	52,507179	
	Longitude	Decimal degree WGS84	A	13,327792	
Charging station	Voltage level		B	Low voltage	
	installed power	kW	B	300	
	Is a charging protocol used?		A	yes	
	Which charging protocol is used?		A	OCPP	Only visitable under the condition: Is a charging protocol used? Answered with "yes"
Hydrogen station	Tank pressure	bar	A	350	
	Daily capacity	kg	A	450	
	Back-to-back filling capacity	kg	A	90	see table A9
	Flow rate	kg/min	A	10	
	Is a refueling protocol used?		A	Yes	see table A9
	Which refueling protocol is used?		A	CGH2	Only visible under the condition: Is a refueling protocol used? answered with "yes"
	Are other vehicles supplied via the hydrogen filling station?		A	yes	
	Which other vehicles are supplied via the hydrogen filling station?		A	3 refuse collection vehicles, 6 light commercial vehicles	Only visible under the condition: Are other vehicles supplied via the hydrogen filling station? answered with "yes", see table A9
	How is the hydrogen filling station supplied?		A	Delivery	
	Is it a stationary or a mobile hydrogen filling station?		A	stationary	
	Is the filling station on the premises of the bus company?		A	Yes	

A4 Charging Point Base Data

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Charging point ID		A	LP_1	see table A9
	Charging coupler		A	CCS	
	max. charging power	kW	A	150	

A5 Vehicle Operating Data

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Vehicle ID		A	VEH_1	As specified in base data
	Date	DD.MM.YYYY	A	01.01.2024	
	Remarks		C		
	Number of charging/refueling cycles between uses on a given day		A	0	see table A9
	Travel/operation time	s	A	28800	
	Driving distance/daily mileage	km	A	250	

Technology	Data Point	Unit / Format	Category	Example	Remark
	Maximum power output Battery	kW	C	250	
All	Fuel consumption auxiliary heating	l	B	3	Only visitable if technology additional heater answered with "additional heater with biodiesel fuel", "additional heater with bioethanol fuel" or "additional heater with diesel fuel"
Biomethane	Gas consumption	kg	A	40	
BEV	Amount of energy drawn from battery	kWh	A	350	
	SOC at the start of operation	%	A	95	
	SOC at the end of operation	%	A	35	
	SOC minimum	%	A	20	
	SOC maximum	%	A	95	
	Positive energy flow	kWh	A	150	see table A9
	Negative energy flow	kWh	B	420	see table A9
	Indoor temperature average value	°C	B	20	
	Outdoor temperature average value	°C	B	16	
	Battery temperature average value	°C	C	25	
	Energy consumption of auxiliary consumers (excl. heating and air conditioning)	kWh	B	20	
	Energy consumption for electric heating	kWh	B	50	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "2 channels"
	Energy consumption for air conditioning	kWh	B	0	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "2 channels"
	Energy consumption electric heating / air conditioning	kWh	B	50	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "1 channel"
	Number of stops		B	250	see table A9
	Stopping time at stops	s	B	5760	
	Duration in speed range 0-3 km/h	s	B	7142	
	Duration in speed range 3-10 km/h	s	B	2765	
	Duration in speed range 10-20 km/h	s	B	3226	
	Duration in speed range 20-30 km/h	s	B	4378	
	Duration in speed range 30-40 km/h	s	B	4147	
	Duration in speed range 40-50 km/h	s	B	3456	
	Duration in speed range 50-60 km/h	s	B	922	
	Duration in speed range 60-70 km/h	s	B	1382	
	Duration in speed range 70-80 km/h	s	B	922	
	Duration in speed range >80 km/h	s	B	460	
	Number of changes between the speed classes		C	6000	
	Meters of altitude climbed	m	B	250	
	Meters of altitude covered downhill	m	B	250	
FCEV	Hydrogen consumption	kg	A	21	
	Positive energy flow	kWh	A	150	see table A9
	Negative energy flow	kWh	B	420	see table A9
	Electrical energy generated by fuel cell	kWh	A	340	
	operating time of fuel cell system	s	C	28800	
	Indoor temperature average value	°C	B	20	
	Outdoor temperature average value	°C	B	16	
	Battery temperature average value	°C	C	25	

Technology	Data Point	Unit / Format	Category	Example	Remark
	Energy consumption of auxiliary consumers (excl. heating and air conditioning)	kWh	B	20	
FCEV	Energy consumption for electric heating	kWh	B	50	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "2 channels"
	Energy consumption for air conditioning	kWh	B	0	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "2 channels"
	Energy consumption electric heating / air conditioning	kWh	B	50	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "1 channel"
	Number of stops		B	250	see table A9
	Stopping time at stops	s	B	5760	
	Duration in speed range 0-3 km/h	s	B	7142	
	Duration in speed range 3-10 km/h	s	B	2765	
	Duration in speed range 10-20 km/h	s	B	3226	
	Duration in speed range 20-30 km/h	s	B	4378	
	Duration in speed range 30-40 km/h	s	B	4147	
	Duration in speed range 40-50 km/h	s	B	3456	
	Duration in speed range 50-60 km/h	s	B	922	
	Duration in speed range 60-70 km/h	s	B	1382	
	Duration in speed range 70-80 km/h	s	B	922	
	Duration in speed range >80 km/h	s	B	460	
	Number of changes between the speed classes		C	6000	
	Meters of altitude climbed	m	B	250	
	Meters of altitude covered downhill	m	B	250	
REX	Amount of energy drawn from battery	kWh	A	350	
	Hydrogen consumption	kg	A	21	
	SOC at the start of operation	%	A	95	
	SOC at the end of operation	%	A	35	
	SOC minimum	%	A	20	
	SOC maximum	%	A	95	
	Positive energy flow	kWh	A	150	see table A9
	Negative energy flow	kWh	B	420	see table A9
	Electrical energy generated by fuel cell	kWh	A	340	
	operating time of fuel cell system	s	C	28800	
	Indoor temperature average value	°C	B	20	
	Outdoor temperature average value	°C	B	16	
	Battery temperature average value	°C	C	25	
	Energy consumption of auxiliary consumers (excl. heating and air conditioning)	kWh	B	20	
	Energy consumption for electric heating	kWh	B	50	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "2 channels"
	Energy consumption for air conditioning	kWh	B	0	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "2 channels"
	Energy consumption electric heating / air conditioning	kWh	B	50	Only relevant if: Data provision for energy demand for electrical heating/air conditioning answered with "1 channel"
	Number of stops		B	250	see table A9

Technology	Data Point	Unit / Format	Category	Example	Remark
	Stopping time at stops	s	B	5760	
	Duration in speed range 0-3 km/h	s	B	7142	
	Duration in speed range 3-10 km/h	s	B	2765	
	Duration in speed range 10-20 km/h	s	B	3226	
	Duration in speed range 20-30 km/h	s	B	4378	
	Duration in speed range 30-40 km/h	s	B	4147	
	Duration in speed range 40-50 km/h	s	B	3456	
REX	Duration in speed range 50-60 km/h	s	B	922	
	Duration in speed range 60-70 km/h	s	B	1382	
	Duration in speed range 70-80 km/h	s	B	922	
	Duration in speed range >80 km/h	s	B	460	
	Number of changes between the speed classes		C	6000	
	Meters of altitude climbed	m	B	250	
	Meters of altitude covered downhill	m	B	250	

A6 Charging/fueling Operating Data

Technology	Data Point	Unit / Format	Category	Example	Remark
	Charging station/filling station ID		A	LS_1	As specified in base data
	Vehicle ID		A	VEH_1	As specified in base data
	Remarks		C		
All	Charging/refueling start time	DD.MM.YYYY hh:mm:ss	A	01.01.2024 22:12:20	
	End time charging/refueling process	DD.MM.YYYY hh:mm:ss	A	02.01.2024 00:41:57	
	Charging point ID		A	LP_1	As specified in base data
Charging station	Energy consumed Charging station from the grid	kWh	A	380	
	Energy absorbed at the bus	kWh	C	350	
	Max. current during charging	A	B	50	
	Average current during charging	A	B	50	
Hydrogen station	Refueled quantity of hydrogen	kg	A	31	

A7 Vehicle Reliability Data

Technology	Data Point	Unit / Format	Category	Example	Remark
	Vehicle ID		A	VEH_1	As specified in base data
	Month	MM.YYYY	A	01.2024	Reference month and year
	Remarks		C		
	Defect in the drivetrain	Days	A	1	Days with downtime due to defects in the drivetrain
	Maintenance	Days	A	1	Days with downtime due to unscheduled maintenance
All	Accident/vandalism	Days	A	1	Days with downtime due to accidents/vandalism
	Defect battery-specific	Days	A	1	Days with downtime due to battery-specific defects
	Defect fuel cell specific	Days	A	1	Days with downtime due to fuel cell-specific defects
	Defect gas actuator-specific	Days	A	1	Days with downtime due to gas engine-specific defects

Technology	Data Point	Unit / Format	Category	Example	Remark
	Other defects	Days	A	1	Days with downtime due to other defects

A8 Charging/fueling Reliability Data

Technology	Data Point	Unit / Format	Category	Example	Remark
All	Charging stations/filling station ID		A	LS_1	As specified in base data
	Month	MM.YYYY	A	01.2024	Reference month and year
	Remarks		C		
	Technical defect	Days	A	1	Days with downtime due to technical defects
	Maintenance	Days	A	1	Days with downtime due to unscheduled maintenance
	Accident/vandalism	Days	A	1	Days with downtime due to accidents/vandalism
	Problem with power connection or hydrogen supply	Days	A	1	Days with an downtime due to problems with the power connection or hydrogen supply
	Other defects	Days	A	1	Days with downtime due to other defects

A9 Further Information on Data Points

Data Point	Note
Funding ID (without suffix)	A project is viewed in the portal as a summary of your funded projects. For example, if you have received funding for vehicles under the funding ID 03TB1234E and infrastructure under 03TB1234I, please enter 03TB1234 as the funding ID in the portal and thus create only one project in which both buses and the charging infrastructure are created.
Can an operational area of the buses be specified?	If 'yes' is selected, the zip code of the main depot is also queried. It is of interest here whether your supported buses are used in the immediate vicinity of this depot or whether this information does not allow any conclusions to be drawn about the location of the buses, for example in the case of leasing agreements.
Substitution factor	Please indicate how many diesel buses each of the subsidized buses will replace. Please calculate this factor as follows: Substitution factor = subsidized e-buses / replaced diesel buses.
Percentage of renewable energies in bus operation (at the start of the project)	Please provide an estimate of the percentage of the energy used for charging / hydrogen refueling of your battery or fuel cell buses that you obtain from renewable sources. The time for this estimate is immediately after the subsidized buses go into operation.
Percentage of renewable energies in bus operations (end of 2030)	Please enter your target value for the aforementioned percentage by the end of 2030.
Planned construction of power plants	Are you planning to install renewable power plants (e.g. wind turbines, PV systems) at your site, either to provide electricity for charging your battery buses or to carry out on-site electrolysis to produce green hydrogen? If yes, please explain your plans in a few words.
Buffer storage tank / Buffer storage tank capacity	Please enter here whether the depot where you have installed your subsidized charging infrastructure has a buffer storage tank. If so, please enter the capacity of the storage tank below.
Type of access to bus operating data	How do you record or obtain the operating data for the accompanying research on the buses? For example, through the OEM's online dashboards, the OEM's local software or fleet management software.
Type of access to charging/fueling operating data	How do you collect or receive the operating data for the accompanying research on the charging or refueling processes? For example, through the OEM's online dashboards, the OEM's local software or charging management software.

Data Point	Note
Vehicle ID	You can make any entry here. It is important to note that you must enter the same vehicle IDs when uploading operating data later. It is therefore advisable to enter the name that you have assigned to this vehicle in your fleet management software (or the software from which you extract the data for the operating data upload) as the vehicle ID. The vehicle ID must be uniquely assigned to a bus.
Comment on acquisition costs	Of interest here would be, for example, specific costs of important assemblies, any price reductions (e.g. due to order volume).
Vehicle class	You can find the vehicle class in the vehicle registration document of your bus. The old vehicle codes can also be selected here if they are still in use.
Operational area	To be able to establish comparability between the buses funded as part of the accompanying research of the guideline for the funding of alternative drive systems for buses in passenger transport, it is important to specify an area of operation in which the funded buses operate. Therefore, please indicate whether you plan to use your subsidized buses *primarily* for a specific route, for several routes or for your entire route network. Please also state the line or route numbers of these lines, if applicable.
Construction year	Please enter the construction year of the subsidized buses. If your subsidized buses are converted diesel buses, please enter the year of manufacture of the original bus.
Model series name	Please check whether the bus model you have procured is in the selection list. Please note that the technology (battery, fuel cell, biomethane bus) is not decisive for the vehicle model, but only the generic term of the bus model. For example, if you have procured e-[series] buses, please select '[series]' for the vehicle model. If the vehicle model you have procured is not in the selection list, please select 'Other' and enter the name of the vehicle model in the new input field that appears below.
Manufacturer [Component]	Please check whether the manufacturer of the component installed in your subsidized bus is in the selection list. If this is not the case, please select 'Other' and enter the name of the manufacturer of the relevant component in the new input field below.
Bus lifetime expectancy (years)	Please enter the life expectancy that you expect from your subsidized buses. Do not include the expected service life of the battery. For example, if you expect the battery to last seven years and the bus to last twelve years, please enter '12' here.
Charging technology	Please enter the data for the (first) usable charging technology of your subsidized battery bus in the following queries. Below you will find the option to enter data for a second charging technology. If your subsidized battery buses do not have a second charging technology, please select 'not available' here.
Data provision for energy demand for electrical heating/air conditioning	Can the energy requirement of the electric heating be read out separately from the energy requirement of the air conditioning (2 channels) or can only the energy requirement of the electric heating be read out together with the energy consumption of the air conditioning (1 channel)?
Charging station/filling station ID	You can make any entry here. It is important to note that you must enter the same charging station/filling station IDs when uploading operating data later. It is therefore advisable to enter the name that you have assigned to this charging station/filling station in your charging management software (or the software from which you extract the data for the operating data upload) as the charging station/filling station ID.
Cost of the device (€) / installation costs (€)	Please break down the total costs of your subsidized charging station / H2 filling station into total equipment costs and installation costs and enter these in the 'Acquisition costs' and 'Installation costs' fields.
Back-to-back filling capacity (kilograms)	Please indicate how many kilograms of hydrogen your subsidized H2 filling station can provide before the pressure in the intermediate storage tank becomes too low.

Data Point	Note
Is a refueling protocol used? / Which refueling protocol is used?	If you use a refueling protocol for the hydrogen refueling of your subsidized fuel cell buses, please select 'yes' in the query and name the protocol used (e.g. CGH2, sLH2, CcH2).
Which other vehicles are supplied via the hydrogen filling station?	If you use your subsidized H2 filling station to supply hydrogen to other vehicles in your company or other companies in addition to fuel cell buses, please enter these in the text field, including the number.
Is a charging protocol used? / Which charging protocol is used?	If you use a charging protocol for the hydrogen refueling of your subsidized fuel cell buses, please select 'yes' in the query and name the protocol used (e.g. CGH2, sLH2, CcH2).
Measuring principle for H2 consumption	How is H2 consumption measured? For example: Changing the fill level of the tank or subsequently via the refueling quantity.
Measuring principle for fuel cell power generator	How is the electricity generated by the fuel cell measured or calculated? For example: Calculation via power * operating time or measurement at the connection line of the fuel cell.
Measuring principle for energy storage	How is the energy consumption at the energy storage system determined? For example: Measurement at the energy storage system, calculation of the sum of all consumers.
Measuring principle for electric motor	How is the energy consumption of the traction motors determined? For example: Measurement at the motor, calculation via (total consumption) - (consumption of all auxiliary consumers).
Measuring principle for HV generator	How is the recuperation energy determined? For example: Measurement on the engine, measurement of the level change on the battery.
Measuring principle for on-board electrical system	How is the energy consumption of the consumers excluding traction drive and air conditioning/heating determined? For example: Measurements at all consumers, measurement at a central point for all these consumers, calculation via (total consumption) - (energy consumption of the traction drive and air conditioning/heating).
Measuring principle for HVAC	How is the energy consumption of air conditioning determined? For example: Measurement at the appliance, calculation via (total energy consumption) - (energy consumption of the drive and other auxiliary consumers).
Charging point ID	You can assign any charging point IDs to the charging points of this charging station. It is important to note that you must enter the same charging point IDs when uploading operating data later. It is therefore advisable to enter the name that you have assigned to this charging point in your charging management software (or the software from which you extract the data for the operating data upload) as the charging point ID. The charging point IDs assigned to a charging station must be uniquely assignable. However, two charging stations (each with unique charging station IDs) can have charging points with the same charging point IDs.
Number of charging/refueling cycles between uses on a given day	Only relevant if individual journeys cannot be recorded and only one line per operating day is specified in the vehicle operating data. If not available or if individual journeys are specified, please enter 0.
Positive energy flow [kilowatt hours]	Energy gained through recuperation during the journey or day of use.
Negative energy flow [kilowatt hours]	Energy conversion at the electric motor.
Number of stops	Number of stops at stops (e.g. by door opening signal).