Manufacturer/Supplier Guidance For BSOG Zero Emission Bus 22p/km Claims

Document prepared by Zemo Partnershi



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Guidance for ZEB Manufacturers /Suppliers



This slide deck sets out the steps required of ZEB OEMs/ suppliers to achieve the ZEB accreditation for vehicles and enable operators to claim the 22p/km of Zero Emission Bus incentive

Vehicle Manufacturers/ Suppliers will need to provide operators with the following documentation to enable a successful BSOG ZEB claim:

- 1. A Zero Emission Bus Test Certificate specific to ZEB model
- 2. A ZEB Vehicle Summary Sheet specific to each individual bus

Accreditation of a Zero Emission Bus



- To achieve ZEB accreditation and certification, vehicles must:
 - have no combustion engines on-board (including diesel heaters),
 - produce no regulated emissions from the tailpipe(s),
 - achieve a 50% well-to-wheel greenhouse gas saving compared to a conventional Euro VI diesel over the UK Bus Cycle.
- ZEB test procedure is exactly the same as ULEB test procedure
- Models that are certified as ULEBs and meet the ZEB definition above automatically issued with ZEB Certificates following consultation with vehicle supplier.
- If you are seeking ZEB accreditation, please engage with Zemo ahead of test date to ensure all test parameters are agreed.

Zero Emission Bus Test Certificate

OEMs will provide operators with ZEB certificate

- Certificates are awarded on a model by model basis e.g. E200EV, StreetDeck Electroliner, BZL, eCity Gold etc.
- Demonstrates energy efficiency and GHG performance over UK Bus Cycle including Inner Urban, Outer Urban & Rural phases
- Details total & useable battery capacity, hydrogen fuel storage, AC/DC charging, top speed and more.
- Published on Zemo website signed by Zemo and Manufacturer
- ZEB Certificates also used to support bids for capital grant schemes like ZEBRA and ScotZEB.

2 Zemo Partnership		Zero Emis	sion Bus Certif	floation ID:	ZEB-AD	L-E200-2022	Approved Test facilit		VILLBROOK
			Ze	ro Emis	sion B	us Certif	icate		
Sustanee	Alexander D	unaite					DVNA	MOMETER SET	114270
Customer Address		e, Priorawood PI, Skeim	eradale, Lanca	Telematica	Capability	Yes	Test Weight		ka
Test Purpose.		on Bus Testing		Maximum Sp	ored (AmAh)	50 km/h	F*		N
Vehicle Manufacturer:	Alexander D			Sealed C	apacity	34	F*	-5.3817	Nikmh
Vehicle Model Name:	E200 EV Ger	n 3		Pessanger	Capacity	65	P	0.32413	Nikmh *
Powertrain Technology		tric		Declared Unlad		12248	P*		N/kmh *
Powetrain Configuration				Gross We	night (kg)	19500	Equivalent test passeng	20/2	17
Cero Emission Heating		pecification			ing and Refuelling	OK	Measured Unladen Weigt	rogen Specifica	11793
Battery Manufe		BYD		Plug		AC Type 2 / CCS 2	Fuel Cell Manufactur		N/A
Battery Chemi		LFP		Max Charge C	apability (kW)	Up to 102kW	Fuel Cell Power Rating	0.00	NIA
Battery Installed Cap		345		Charper Co	monthilty	AC or DC	Hydrogen Storage Capac	ity (kg)	NA
Battery Usable Capa	ecity (kWh)	330		Charge time fro	m 20-80% SOC	2-6 hours	Hydrogen Storage Pressu	are (bar)	NA
		Dealgrad	l fuel pr	on ortion of	nd course		n conversion fra	tore	
Weldo-Tenk Fector		BO.92	a CO2e / MJ			UK market standard	n conversion fac	tors	00000
Well-to-Tenk Pactor: Well-to-Tenk Factor:	Electricity Hydrogen	80.92 N/A	g CO2e / MJ g CO2e / MJ	Fuel Pr Cepecity of		N/A	WTT evidence Fuel Type / Pathwa	~	DBEIS Conversion 2021 UK Grid Electricity
Energy Density	Hydrogen	120	MJ / kg	Transport Distance	of Hydrogen (km)	NA	Hydrogen Production Energy	y Source	UK Grid
EI	missior	ns and Ene	rgy cons	sumption r	results fro	m approve	d test facility - Av	verage 4	tests
Test Phase	HC (g/km)	CO (g/km)	NOx (gilon)	PM (g/km)	CO ₂ (gikm)	CH _s (g/km)*	N ₂ O (g/km)*	Vehicle Energy Consumption	Grid Electrical Energy Consumption (kWh/ 100km
								(kWh)	contemption (kning rookin)
Outer Urben	NA	NA	NA	NA	NA	NA	NA	7.78	153.84
Inner Urban	NA	NA	NA	NA	NA	N/A	N/A	4.12	211.25
Rund	N/A	NA	NA						
				NA	NA	NA	N/A	8.52	111.69
LBC Average	N/A	NA	NIA	NA	NIA	NA	N/A	11.90	169.82
LBC Average UK BUS Average	N/A N/A	N/A N/A	N/A N/A	NA NA	NIA NIA			11.90 18.42	169.62 143.40
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n behalf of DfT / Zemo Partnership



ZEB Vehicle Summary Sheet

OEMs will also need to fill out a vehicle summary sheet specific to each bus registered.

- Vehicle Suppliers must fill out Vehicle Summary Sheet for each individual bus sold e.g. Vehicle Registration No., Chassis number, Year of Registration.
- Zemo will generate ZEB Vehicle Summary Sheet once model has been certified.
- Vehicle Summary Sheet will be published on Zemo website for easy access alongside ZEB test certificate.
- Vehicle Summary Sheet requires two signatures from two different Supplier/OEM representatives to ensure validity of claim.
- This process follows similar process to BSOG LCEB claims

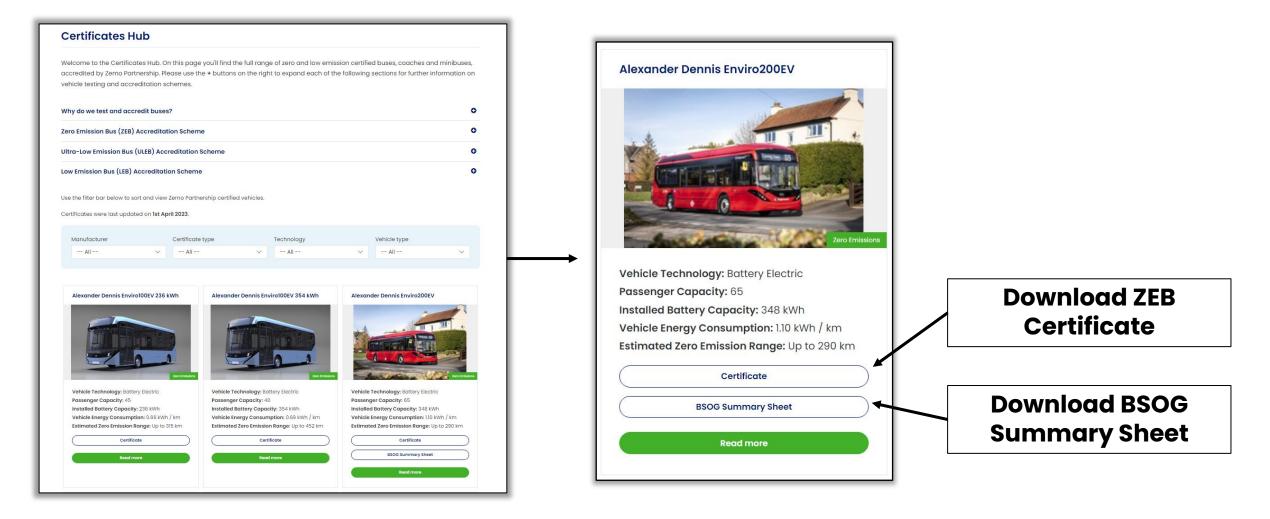


	Zero Emission Bus Ve	hicle Summary Sheet		
This is to certify that:				
Vehicle Registration		Year of Registration		
Vehicle Chassis Number		Propulsion Technology	Battery Electric	
Vehicle Manufacturer	Alexander-Dennis	Euro Standard	N/A	
Vehicle Model	E200 EV Gen. 3	Total Passenger Capacity	65	
Certificate ID	ZEB-ADL-E200-2022	Maximum Theoretical Zero Emission Range (kn		
Certificate ID Well-to-Wheel greenhouse gas emissions (g CO2e /km)	2EB-ADL-E200-2022 417.7 g CO2e/km		1) 290 km	
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Download documents from Zemo website

Download documents here - <u>Certificates Hub (zemo.org.uk)</u>





Outline Process for Vehicle Suppliers/OEMs



- 1. Engage with Zemo Partnership about ZEB certification <u>secretariat@zemo.org.uk</u>
- 2. Test ZEB model over UK Bus Cycle
- 3. ZEB Test Certificate generated, signed and published on Zemo website.
- 4. ZEB Vehicle Summary Sheet published on Zemo website.
- 5. Vehicle Supplier/OEM fills out ZEB Vehicle Summary Sheets for individual buses sold.
- 6. OEM supplies ZEB Test Certificate and ZEB Vehicle Summary Sheets to operator.
- 7. Operator follows DfT procedure for ZEB BSOG 22p/km claim based on vkms operated.