

Clean Vehicle Retrofit Accreditation Scheme (CVRAS)

Retrofit Emission Control (REC) Device or Technology Application Form

1. Contact information:

Please provide company and contact details

| | |
|-------------------------------|--|
| Company Name | |
| Address | |
| Primary contact name | |
| Position | |
| Telephone | |
| Email | |
| Secondary contact name | |
| Position | |
| Telephone | |
| Email | |

2. Vehicle category:

Please indicate the vehicle category to which the emission reduction system will be applied.
Please use a separate form for each vehicle category.

| Bus | Coach | HGV | Van | Taxi (Black Cab) | Passenger Car | Refuse Collection Vehicles (RCV) | Other Specialist Vehicle |
|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------|--------------------------|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- *Strike out what does not apply*

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3. Vehicle applications:

Please list the vehicle application details for which approval is sought

| Make | Model | Engine make | Engine cc | Engine Power (kW) | Revenue mass | Original Engine Euro Level |
|------|-------|-------------|-----------|-------------------|--------------|----------------------------|
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4. Worst case proposal/approval extension justification and evidence (if applicable)

| | |
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| Worst case test proposal description | |
| Approval extension justification | |

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| Additional evidence for approval extension | |
|--|--|

5. Product Details: General

| | |
|---|--|
| Type of REC | |
| Location and method of affixing of the approval mark: | |
| Address(es) of assembly plant(s): | |

6. Product Details: Description of the device

| | |
|---|---------|
| Class of REC (as defined by UN(ECE) Regulation 132 (if applicable): | |
| Make(s) (Commercial name), and manufacturer's type identification of the REC: | |
| Identifying part number(s) of the REC: | |
| Is the REC intended to be compatible with OBD requirements: | Yes/No* |

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7. Product Details: Description and drawings, schematics and photographs of the device

| | |
|---|--|
| Description: Please provide a brief description of the REC device or proposed retrofit system. | |
| Drawings, schematics, photographs: Please provide drawings of the REC device | |
| Maximum allowable exhaust back pressure of the REC (kPa): | |

8. Product Details: Characteristics of the NO_x and PM reduction REC and the NO_x and PM reduction REC family

| | |
|---|--|
| Dimensions, shape(s) and active volume(s) of the NO _x and PM reduction system: | |
| Maximum distance to the REC inlet from the outlet of the turbocharger (turbine) or the outlet plane of the exhaust manifold where no turbocharger is fitted): | |
| Description, drawings and part lists of the NO _x and Particulate Matter (PM) reduction REC: The description shall include a list of the main | |

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| components (stating the part numbers) that are assembled to a REC for each application. | |
| Type of retention of the active element(s) (for example, adhesive or mechanical fixing): | |
| Working principles of the NOx reduction active element (for example Selective Catalytic Reduction, NOx Storage and Reduction) and of the PM reduction active element (for example metallic or ceramic material and material type, barrier filtration or aerodynamic separation): | |
| Design and characteristics of the substrate(s) and active material(s) as defined in paragraph 14.1. (c) and 15.1. (d) and (e) of UN(ECE) Regulation 132: | |
| Type(s) of catalytically active material(s): | |
| Physical design of the substrate(s): | |
| Working principle of the PM reduction active element (for example metallic or ceramic material including material type, barrier filtration or aerodynamic | |

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| separation): | |
| Cell density, porosity, mean pore size and pore size distribution of the PM reduction active element: | |
| Location (upstream/downstream), function and working principle (e.g. oxidation) of any supplementary catalyst(s): | |
| Type(s) of catalytically active material(s): | |
| Physical design of the substrate: | |
| Cell density: | |
| Minimum volumetric concentration of catalytically active materials of each element of the NO _x and PM reduction system including supplementary catalysts (if fitted) (grams/m ³): | |
| Maximum volumetric concentration of catalytically active materials of each element of the NO _x and PM reduction system including supplementary catalysts (if fitted) (grams/m ³): | |
| The design characteristics of the canning or packaging: | |
| Volume of each active component: | |
| Method(s) or system(s) of | |

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| regeneration (if applicable) (comprehensive description and/or drawing): | |
| Type of PM reduction system regeneration (for example periodic or continuous): | |
| PM reduction system regeneration principle and regeneration strategy: | |
| Method and control strategy for introducing additives or reagents (if used): | |
| Type and concentration of reagent(s) or additive(s) (if used): | |
| Frequency of reagent(s) or additive(s) refill: | |
| Normal operational temperature range of NO _x reduction reagent(s) (K): | |
| Control strategy (for example delay periods, reagent dosing rates, positioning and characteristics of sensors, flow characteristics and reagent introduction location): | |
| Heated system: | Yes/No* |
| Temperature control method (catalytic, thermal or electro-thermal): | |
| Description of PM reduction system monitoring: | |
| Description of NO _x control | |

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| diagnostic system: | |
| Description of any modifications to the original engine or emissions control system as defined in paragraph 11. of UN(ECE) Regulation 132: | |
| Normal operating temperature (K): | |
| Normal operating pressure range (kPa): | |
| Use of insulation: | Yes/No* |
| Design and characteristics of the insulation: | |

9. Product Details: In Service Monitoring and Data Capture

| | |
|---|--|
| Description of in service monitoring and data capture system for REC: | |
|---|--|

10. Product Details: Maintenance & Service

| | |
|---|--|
| Description of Maintenance/Service Regime | |
| Service Interval/Frequency | |

11. Supporting Evidence:

For each REC system approval will require the following supporting documents:

- System schematic
- Back pressure monitor schematic
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- Installation schematics, layouts, system drawings or photographs
- Key dimensional/performance criteria relating to efficient operation of the REC
- Approval emission test reports/results obtained over the appropriate CVRAS test procedures/cycles at a test facility registered to conduct type approval.
- Operation manual
- Maintenance manual or service schedule

In addition the following documents are required for type specific systems

- Substrate Data Sheet (for SCR and DPF systems)
- Additives Data Sheet (for Fuel Borne Catalyst (FBC) additives)
- COSHH Data (for Fuel Borne Catalyst (FBC) additives)

12. Declaration

I confirm that the information given on this form and in any supporting documentation provided in connection with the application is true, accurate and complete. This application is made according to the terms of the CVRAS/NRMM contract.

| | |
|------------------|--|
| Name | |
| Signature | |
| Date | |
| Position | |

Please email application forms and associated supporting evidence to:

cvras@est.org.uk

Energy Saving Trust
30 North Colonnade
Canary Wharf
London
E14 5GP

Microsoft Word® version available on request.

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| | Name | Signature | Date |
|--------------|------|-----------|------|
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