

**Name of the organization**

European Commission DG-JRC, Institute for Energy and Transport

Name of the infrastructure / laboratory

Environmental Test Chamber (ETC)

Address and country of the infrastructure / laboratory

Westerduinweg 3, 1755 LE Petten, The Netherlands

Person responsible of the access / Contact person

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Main field of activity of the infrastructure / laboratory

- ▶ Stationary and Fuel Cells for Power and Heat Generation
- ▶ Transportation and Refueling Infrastructure
- ▶ Cross-cutting issues

Short description of the infrastructure / laboratory

The Environmental Test Chamber (ETC) comprises a unique combination of a walk-in environmental chamber housing a six-degrees-of-freedom (6DoF) computerized vibration test system with provisions foreseen to test up to 100 kW fuel cells or other test items. The environmental conditions include the simultaneous application of multi-axial shocks & vibration at frequencies of up to 250 Hz (i.e. field test data), ambient temperatures in the range of -40°C to +60°C and 15-95% relative humidity of the ambient. Such environmental conditions are most relevant for hydrogen and fuel cells in transport application including the use of portable and mobile devices as well as the safe transport of stationary devices to and from the installation site. The design and the safe, reliable and durable operation of such devices in these applications require the definition and experimental validation of test protocols and the testing (e.g. structural integrity) under a variety of environmental conditions (ambient temperature & humidity, vibrations & shocks). Moreover, this chamber is equipped with safety features such as gas sensors and ex-proof surveillance cameras linked to a video recording device.

Main research area(s) of the infrastructure / laboratory

Environmental testing

