

External Evaluation Partner (EP) Brief

UKRI is seeking to commission an independent process to evaluate the impact of *Driving the Electric Revolution*, an Industrial Strategy Challenge Fund Wave 3 Challenge (hereafter referred to as “the Challenge”). The Challenge will be running a range of benefits management activities targeting beneficiaries of the Challenge's funding, which can be used to support the wider reach expected from this evaluation activity. This will include direct beneficiaries as well as those not directly involved in the Challenge’s activities.

The role of the successful evaluation partner will be to undertake an independent benefits evaluation. We therefore invite prospective evaluation partners to join a pre-procurement market engagement event to gain insight into the evaluation requirements before the tender goes live.

This event is scheduled for **Monday 28 September 2020**, from 9:30am.

The purpose of the Challenge is to grow UK supply chains and increase manufacturing capability in Power Electronics, Machines and Drives (PEMD)* technologies and significantly impact the delivery of Net Zero policy while simultaneously stimulating growth in the UK economy. The Challenge scope is cross-sectoral, including aerospace, automotive, energy, industrial drives, maritime, personal mobility, off-highway, rail and robotics.

Due to the breadth and depth of the scope and subject matter, a collaborative approach to evaluation, from business and PEMD industrial technology perspectives, is encouraged by the Challenge team. As an embedded / underpinning technology area, the impact of PEMD capability on larger systems is important to appreciate.

*PEMD is a set of cross sectoral technologies without which Net Zero cannot be achieved. It enables transformative technologies in electrification across all sectors, including industrial controls, energy, transport, and personal mobility, all underpinned by PEMD technologies. **PEMD is inside everything** electrical we touch, hold and use and is fundamentally sector agnostic, thus enabling a resilient investment opportunity.

- Power Electronics refers to the control and manipulation of electrical power using semiconductor (e.g. Silicon, Silicon Carbide, Gallium Nitride) switching devices and circuits and their packaging which efficiently control electric power flow.
- Electric Machines (motors and generators) are electromechanical devices which convert between electrical and kinetic energy, and require optimised electromagnetic, mechanical and thermal design.
- Drives are systems that combine power electronics, electrical machines and intelligent control, and incorporate passive components, sensors, thermal management and mechanical design. This is not limited to “industrial drives” but includes all elements of intelligence in power electronic control. Examples include, but are not limited to, dc/dc converters, EV chargers, power generation rectifiers/controllers and electrical power management and conditioning.

The Challenge will support existing areas of PEMD where the UK has global strength, and accelerate the UK's ability to capitalise on new, rapidly growing markets. Focus will include, but not be limited to decarbonisation opportunities in renewable energy generation, hybrid aircraft, electrical energy storage, smart grids, industrial drives, electric vehicles, consumer products, low carbon off-highway vehicles (construction and agriculture), maritime vehicles and energy distributions systems. Driving the Electric Revolution will impact the entire supply chain from fundamental materials and components through to complex systems integration in addition to how the circular economy will benefit these industries.