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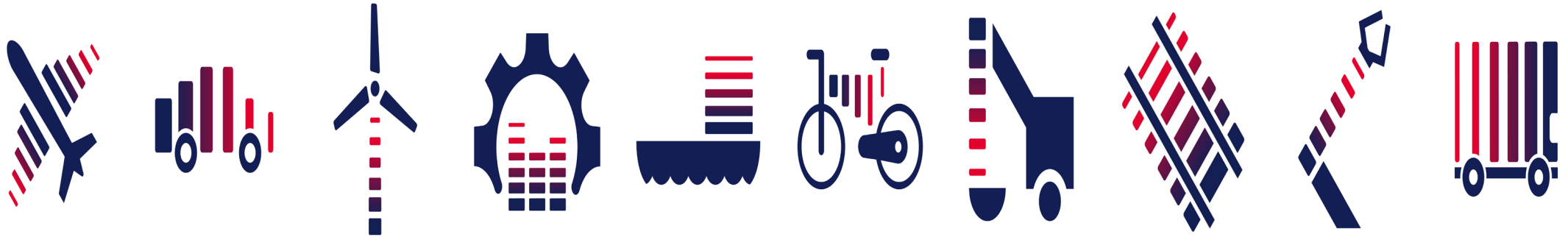
**The UK and its regions have an opportunity of a size which may not happen again.**

**Electrification could put many thousands of existing jobs at risk but over the medium term it will also create many thousands of jobs.**

**There will be a cost to this transition with challenges such as the re-skilling of possible numbers running into millions of people.**

**Electrification will require training of many people such as mechanics, the fire service, construction industry, factory staff, lecturers, and policy makers.**

# Without electrification, Net Zero Cannot be achieved



- All UK cars to be zero carbon by 2035 (no 100% internal combustion engine from 2030)
- New aircraft to be electric/hybrid to meet next phase emissions and noise legislation by 2040
- Renewables (Wind, Wave, Tidal) to form an increasing % of energy generation (80% CO<sub>2</sub> reduction by 2050)
- High speed rail network to grow, no new diesels after 2040
- Marine transport's target to be 50% CO<sub>2</sub> reduction by 2050

## The Vision

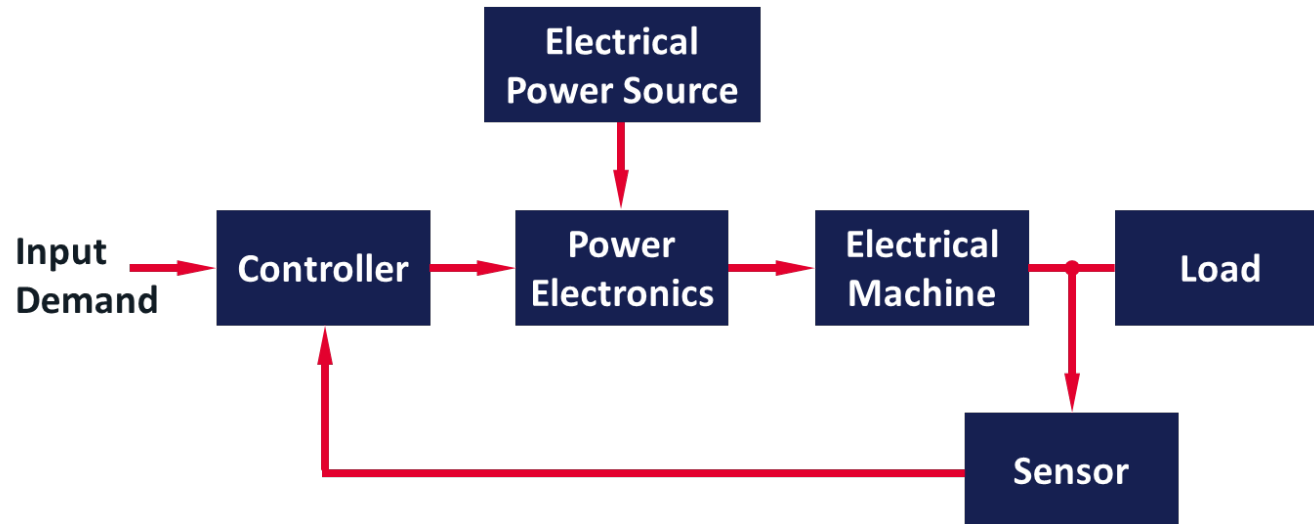
To make the UK globally recognised as a

*Centre of Excellence in*

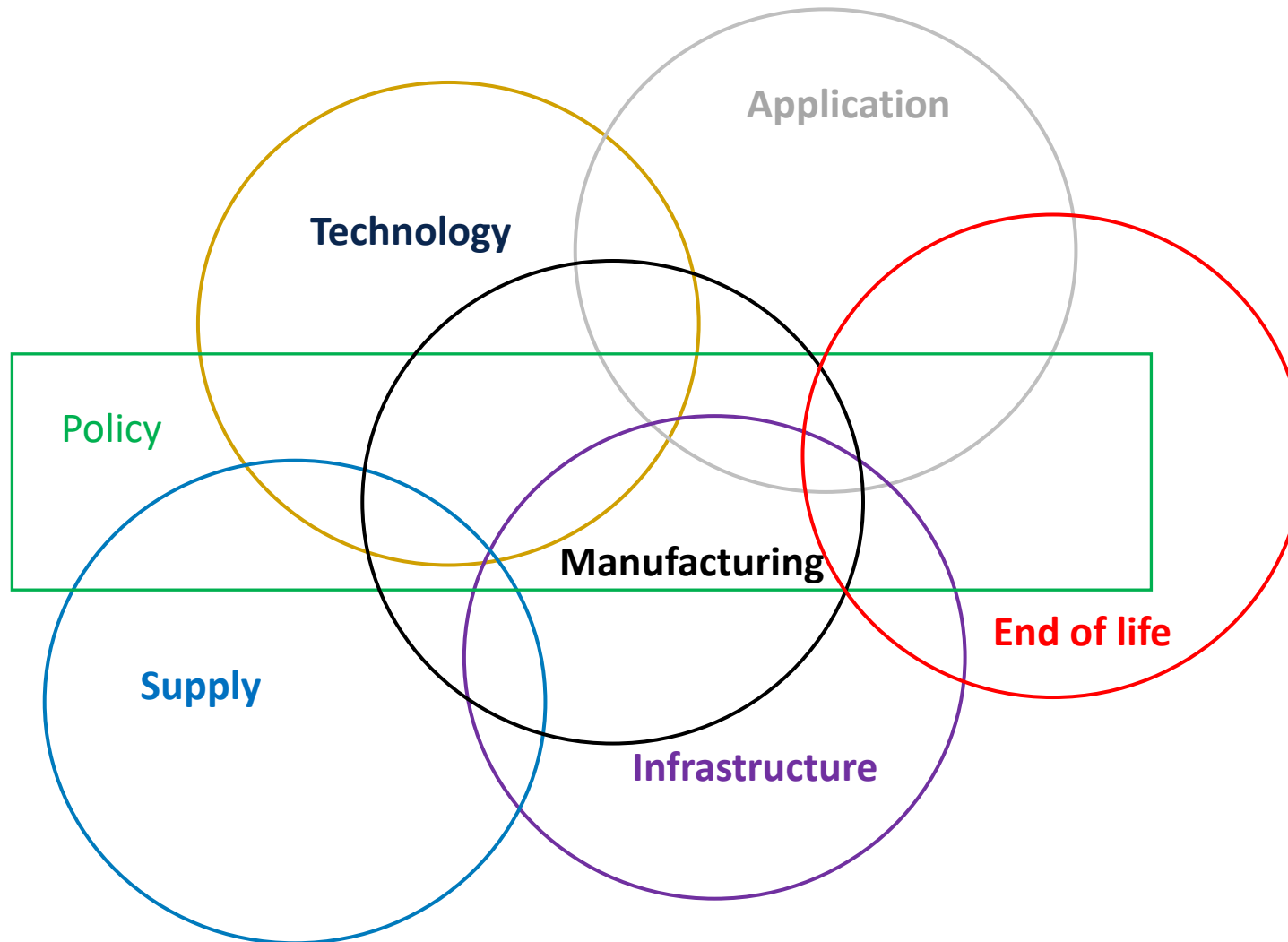
*Batteries, Power Electronics, Machines and Drives manufacturing processes, performance and end of life for batteries.*

## What is an Electrical Drive?

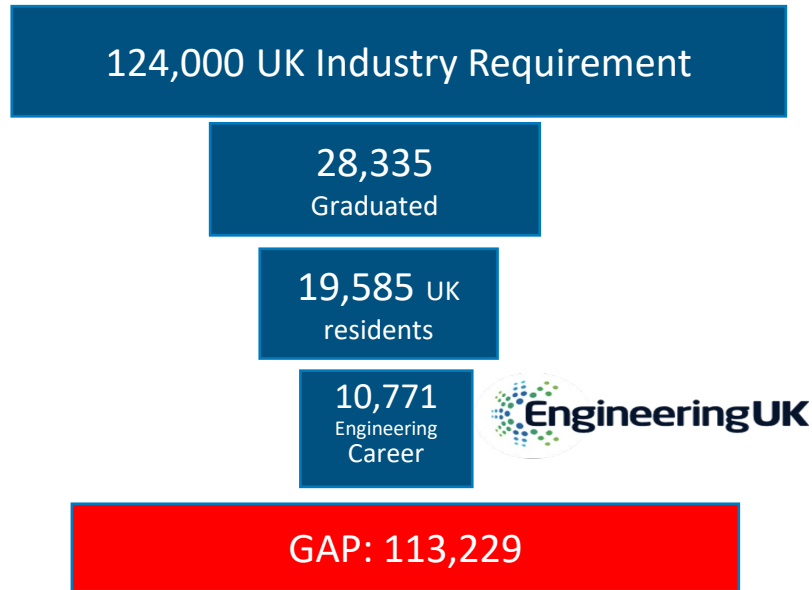
- A combination of power electronics, electrical machine and control system
- Enables accurate control of motor parameters, such as speed



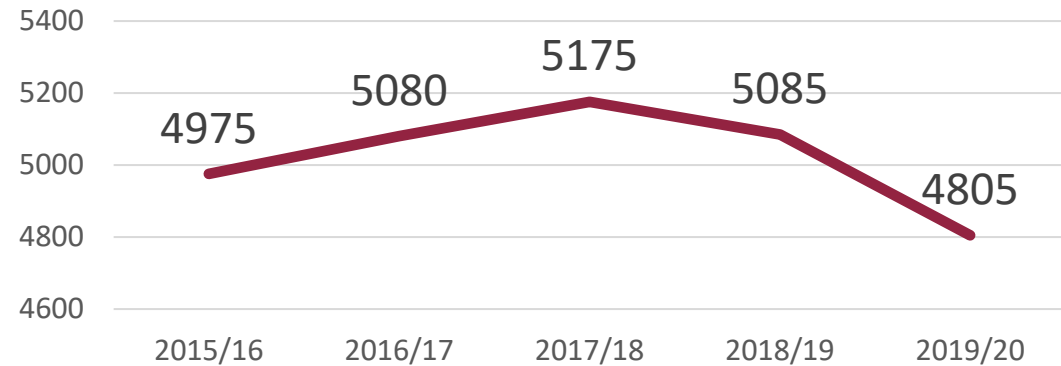
# Interconnectivity



2. Electrical/electronic engineering undergraduate **qualifiers has flatlined** in the last 5 years despite strong increase in demand



Electrical/Electronic Engineering First Degree Qualifiers 2015/16 - 2019/20



The pipeline of UK resident graduate engineers is **less than 10%** of annual industry need up to 2025.

**Nissan Motor Manufacturing UK graduate salary: £30,000**

**Filling vacancies is currently difficult in manufacturing and this challenge will increase if we do not engage and align businesses, educators, local authorities, and sector bodies to work together collaboratively to develop a Skills strategy focused on inspiring people of all ages to pursue employment and a career in manufacturing and engineering. This includes: attracting and retaining graduates in the region; providing opportunities for the unemployed to engage with programmes and activities to encourage and support their entry into the manufacturing & engineering workforce; increased STEM engagement activity in schools (both primary and secondary) with the purpose of inspiring children and young people into STEM based FE and careers, and relevant, sufficient and innovative technical education provision i.e. T-Levels and apprenticeships.**

**Nissan**

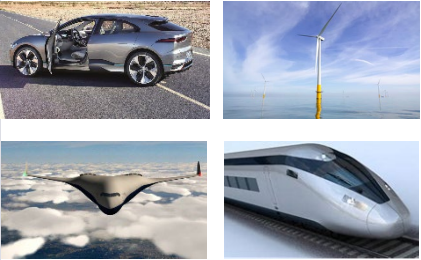


**The Skills challenge for manufacturing and engineering (OEM and supply chain) is real and is happening now and without swift action, given plans for the region to evolve manufacturing activity, will significantly increase in the future. A strategic and collaborative approach is required to build a strong, robust pipeline of skilled workers; people with the right skills, at the right time for employment by established manufacturers/ the local supply chain and emerging sectors/ businesses.**

**Nissan**

**Mission** To provide a UK network of open access facilities, growing world class design, manufacturing, test and validation capabilities.

Focused across all Sectors

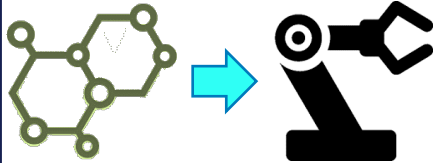


Maximise productivity

Enable cross fertilisation

Secure sufficient capacity

Materials to Manufacturing



Covering full system lifecycle from new materials to manufacturing

Driving innovation beyond our international competitors

Supply Chain Development



Build new supply chain to support increase in electrification demand

Build UK SME's into credible Tier 1s and Tier 2s

Developing World Leading Facilities



Prototyping and Scale-Up as well as scale down and recycle

Consolidating international leadership in UK academic base

Training and Skills



Meeting industry requirements for specialists

Retraining, technical and dedicated degree programmes

# Q & A

