

COMPOSITES TECHNICIAN TRAILBLAZER APPRENTICESHIP

Brian Thornton
TB Coordinator

COMPOSITES TECHNICIAN TRAILBLAZER APPRENTICESHIP

**Steering Group Chairman
Dean Jones**

**Lead Company
Rolls Royce**



STEERING GROUP MEMBERS



COMPOSITES TECHNICIAN TRAILBLAZER APPRENTICESHIP

Supported by



PROGRESS TO DATE

March 2015
Standard Approved

August 2016
Assessment Plan Approved

Funding Level Allocated
December 2016

PROGRESS TO DATE

January 2017

Assessment Plan Unconditional Approval

February 2017

Framework Published

Enrol for Sept. 17 Start

Initial Phase
Knowledge & Competence

Technical Certificate
Mandatory Units
(inc. Behaviours)



Recommended
Level 2 NVQ Composites Engineer
Core & Options



Recommended
Gateway to Progression
Pass/Progress or fail/retake

Level 2
Maths & English



Technical Certificate (Continued) Optional Units	Options dependent on the sector	Recommended Level 3 NVQ Composites Engineer Core + Options
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Level 3 Technical
Certification

Behaviours
Assessment

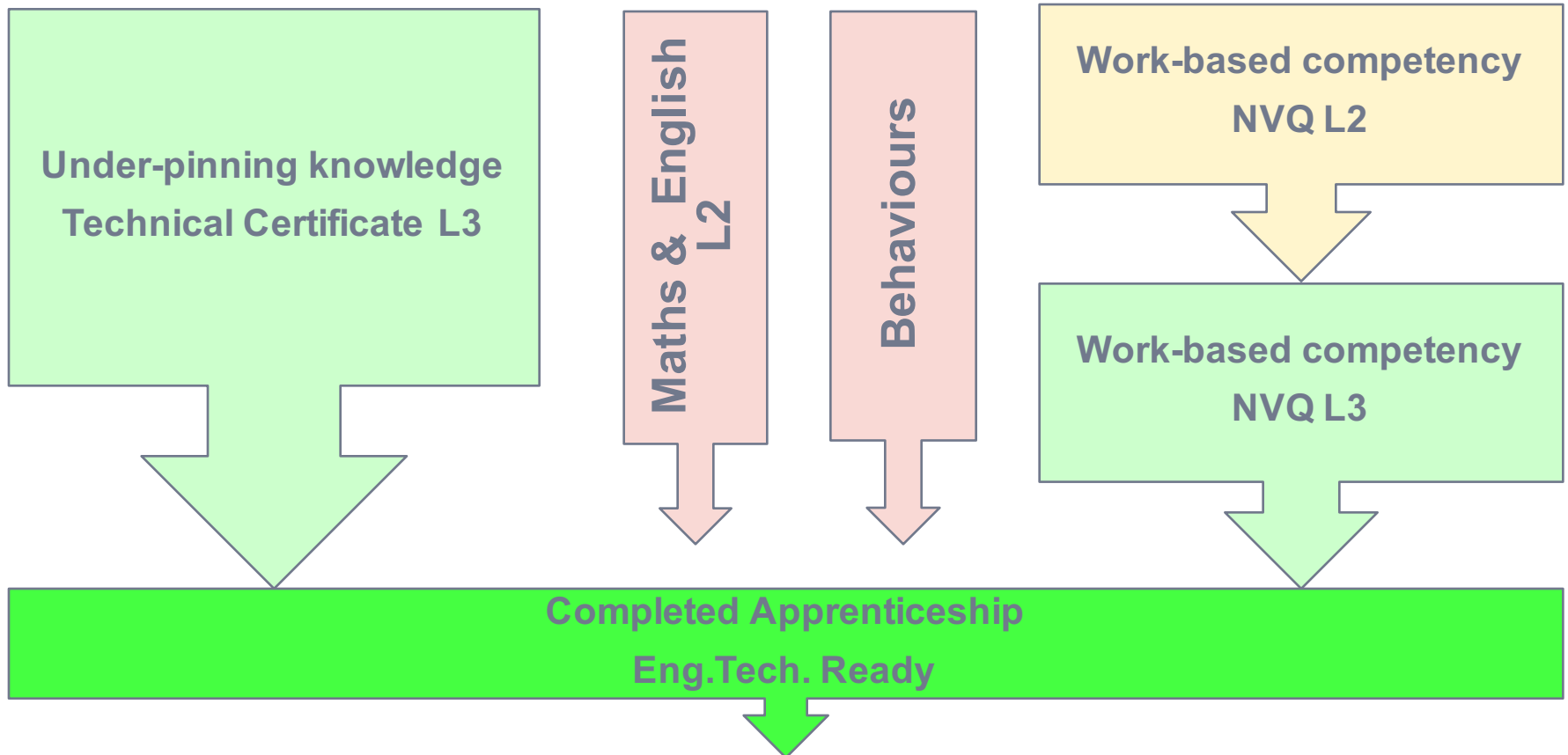
Level 3 NVQ
Certification

Mandatory Gateway 2
Framework Completion
Meets Eng. Tech membership Criteria

End Point Assessment
Includes a project review & viva,

PASS
APPRENTICESHIP COMPLETION AWARD

36-48 Month Program



Mandatory Units

1. Understand employer H & S Policy (Inc.Statutory Regs)
2. Interpret Eng.Data and Work instructions
3. Work Effectively and Efficiently – (inc. intro. to BIT)
4. Awareness of Materials
5. Awareness of Processes –(inc.Tooling)
6. Awareness of Product Design and Applications
7. Awareness of Defects and Detection in Composites
8. Production of a Part using a Hand-lay up Technique

Optional Units – Minimum 2 required

- An understanding of Prepregs
- An understanding of Wet layup
- An understanding of Spray Layup
- An understanding of RI/RTM
- An understanding of Automated Processes
- An understanding of Assemblies, Jointing, Bonding
- An understanding of Repair Techniques
- An understanding of Curing Technique
- An understanding of Tooling and Tool Prep.

Awarding Body preference

Pearsons

- B-TEC- L3

+




• EAL NVQs

- Composites Engineer Level 2
- Composites Engineer Level 3

Training Provision

An Opportunity for FE

CLF – Market opportunity

2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY	2030 OPPORTUNITY
UPPER £3,590m 19%	UPPER £1,150m 8%	UPPER £3,490m 16%	UPPER £160m 7%	UPPER £1520m 10%	UPPER £370m 4%	UPPER £1,100m 33%	UPPER £1,100m 4%	UPPER £1,100m 4%
LOWER £1,250m	LOWER £910m	LOWER £1,430m	LOWER £130m	LOWER £1240m	LOWER £320m	LOWER £320m	LOWER £320m	LOWER £880m
2020 FORECAST	2020 FORECAST	2020 FORECAST	2020 FORECAST	2020 FORECAST	2020 FORECAST	2020 FORECAST	2020 FORECAST	2020 FORECAST
UPPER £1,160m 33%	UPPER £950m 20%	UPPER £530m 7%	UPPER £100m 12%	UPPER £640m 12%	UPPER £270m 4%	UPPER £340m 86%	UPPER £690m 3%	UPPER £690m 3%
LOWER £1,040m	LOWER £920m	LOWER £480m	LOWER £80m	LOWER £510m	LOWER £240m	LOWER £80m	LOWER £650m	LOWER £650m
								
AEROSPACE	DEFENCE	AUTOMOTIVE	RAIL	CONSTRUCTION	MARINE	OIL & GAS	RENEWABLES	RENEWABLES
£270m	£380m	£380m	£60m	£360m	£220m	£20m	£600m	£600m

2015
£2,290

2020
£4,670
15% CAGR

2030
£12,480
12% CAGR

UK Advanced Manufacturing Skills – Probable Market Failure

CURRENT AND FUTURE SHORTAGE OF SKILLED PEOPLE

UKCES Working Futures 2014-2024 - Evidence Report 100 April 2016

.... manufacturing growth will be driven by advanced (high-technology)

The availability of skilled labour will be an essential determinant of growth, and that skill shortages are a sizeable concern, and will be an important constraint on growth.

EEF Skills Report 2016 – An Up-skill Battle

73% of manufacturers experience highly skilled staff recruitment problems, particularly in the areas of engineering, design and production skills.

59% expect to need more management, leadership and production-related skills in the next three years.

CURRENT AND FUTURE SHORTFALL OF THE MEANS TO GENERATE SKILLED PEOPLE

Engineering UK 2016 - The State of Engineering

....supply data shows an annual shortfall of 29,000 people with level 3 skills and **40,000 with level 4+ skills.**

.....the UK at all levels of education does not have the current capacity or the required rate of growth needed to meet the forecast demand for skilled engineers and technicians by 2022.

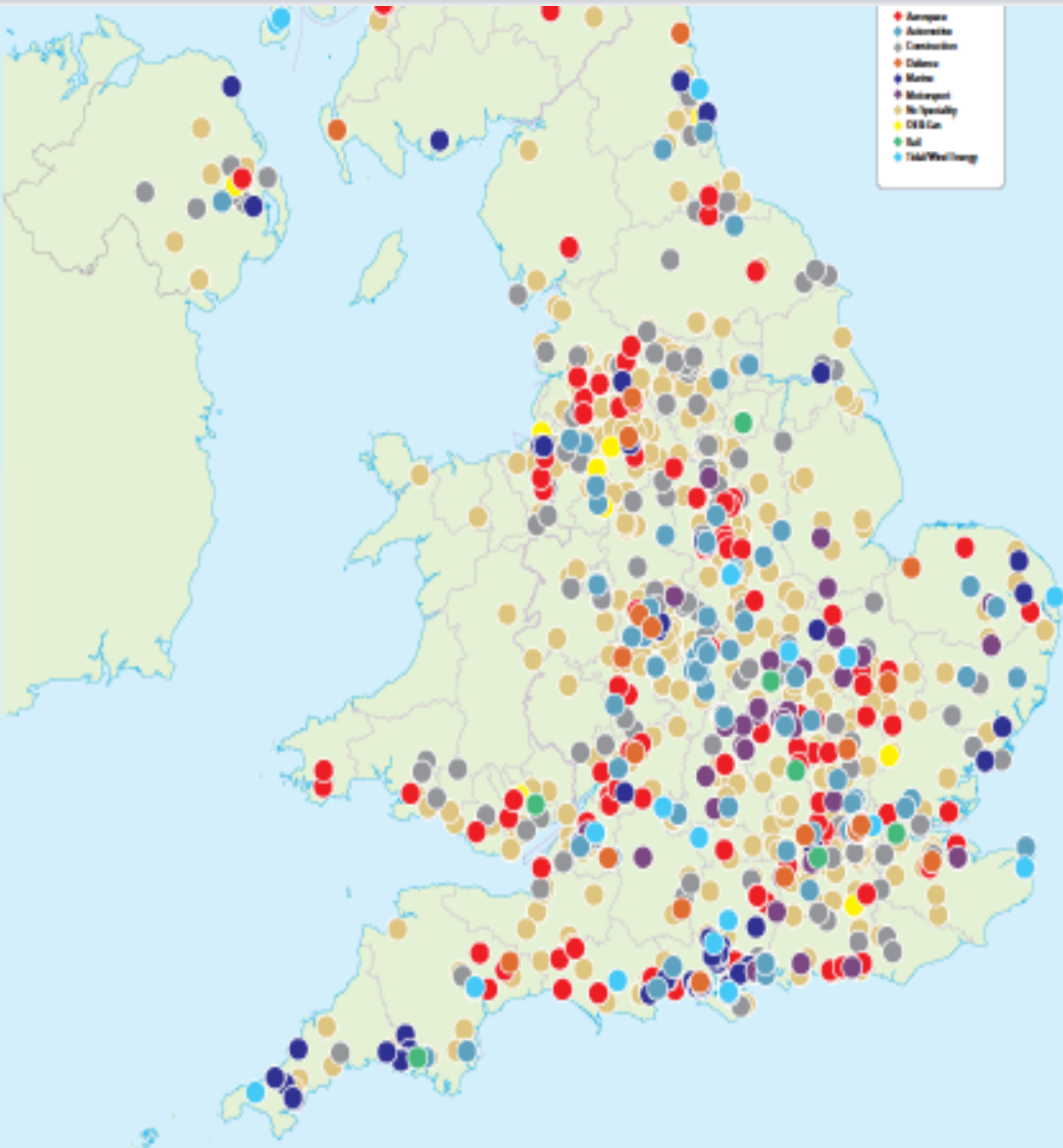
More than 80% of the workforce of 10 year's time is already in work. Apprenticeships / Graduates are essential, Up / Re – skilling is critical.

**“WE HAVE A SKILLS CHALLENGE IN GERMANY, YOU HAVE A SKILLS CRISIS IN THE UK”
(Wright Report 2014)**

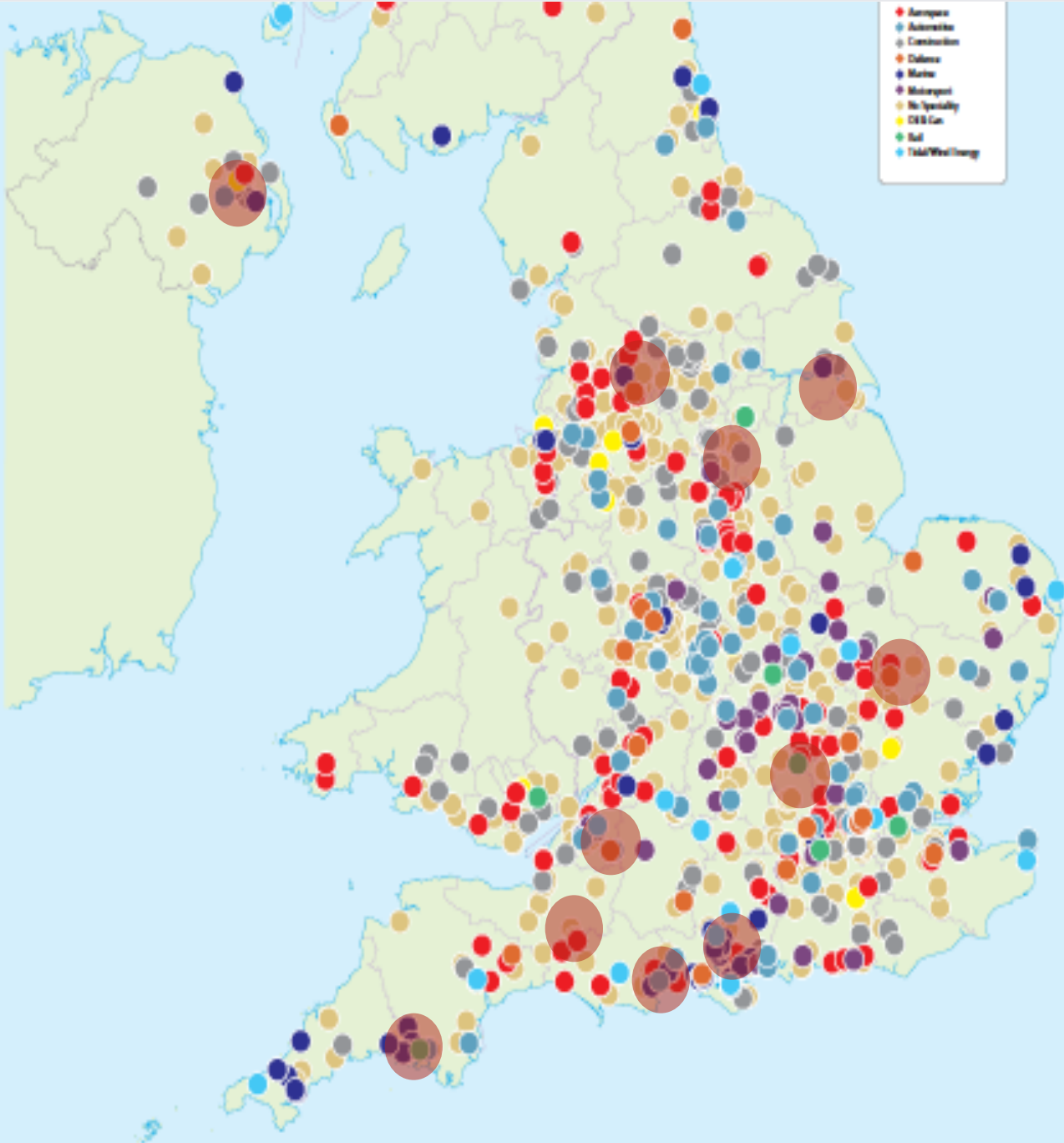
Circa 1300 companies

Primary Markets

- Aerospace
- Automotive
- Construction
- Defence
- Marine
- Motorsport
- No Speciality
- Oil & Gas
- Rail
- Tidal/Wind Energy



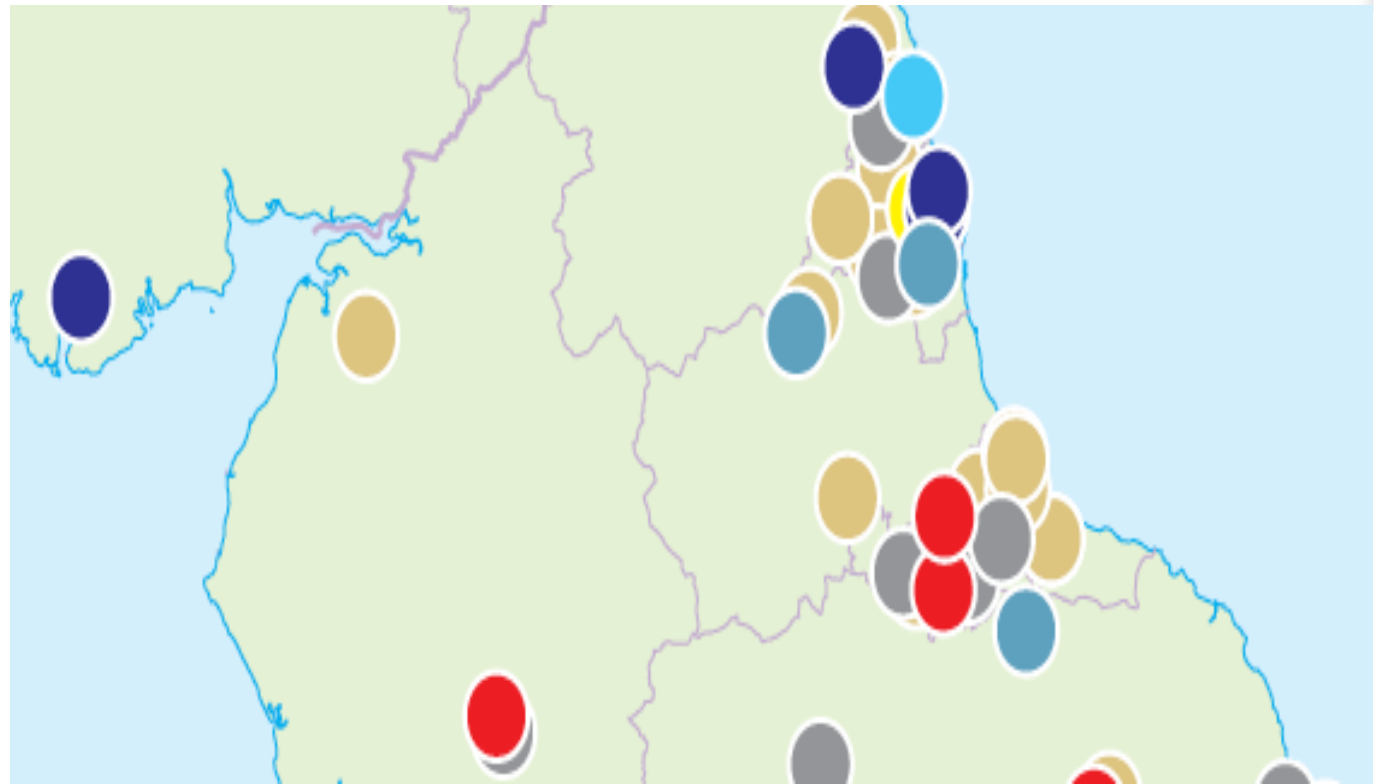
Current Provision (Limited) ●



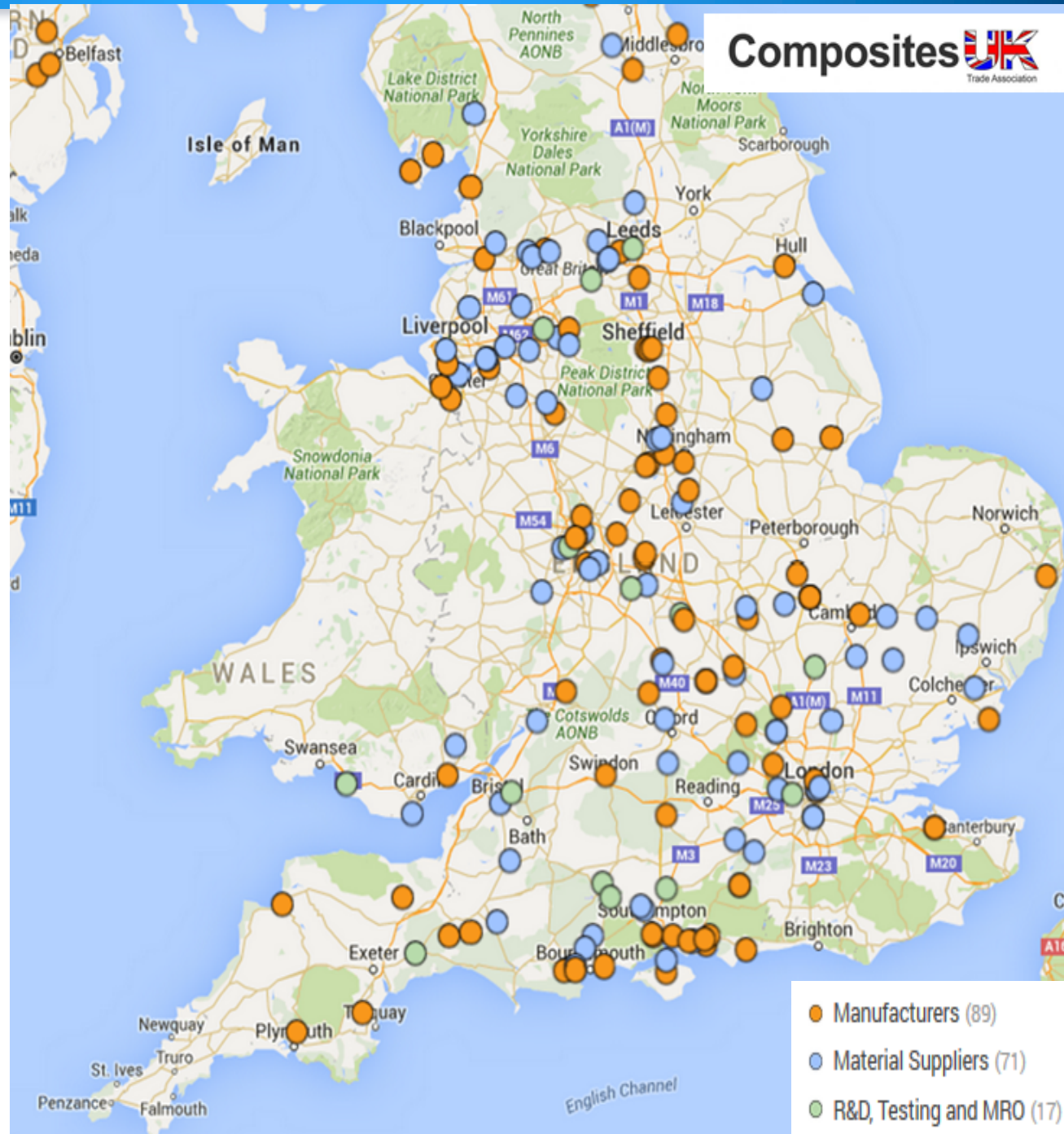
NE Cluster

Primary Markets

- Aerospace
- Automotive
- Construction
- Defence
- Marine
- Motorsport
- No Speciality
- Oil & Gas
- Rail
- Tidal/Wind Energy

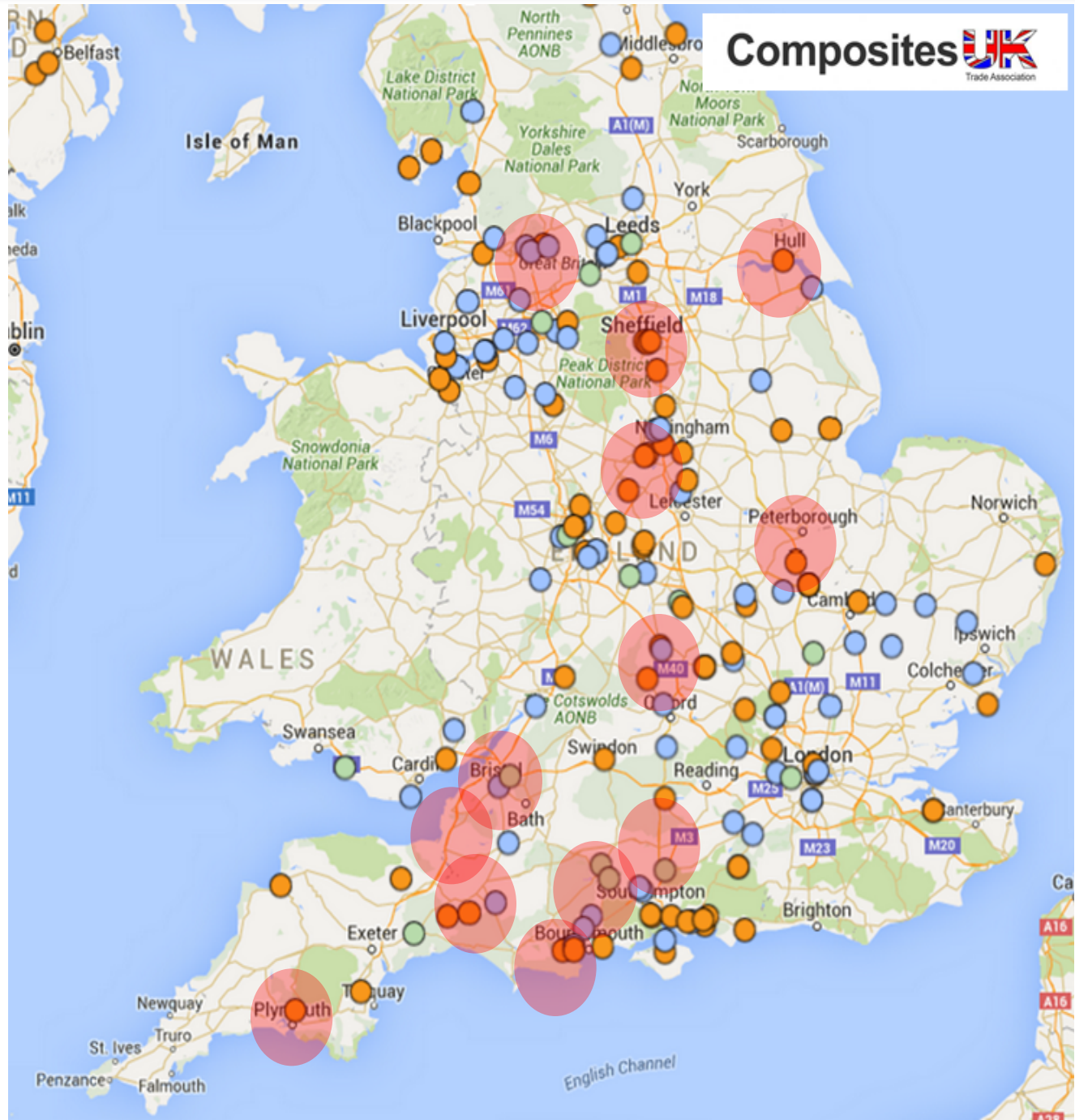


CUK Membership





Current Provision
(Limited)



INCREASING THE PROVISION

NCC-Train the Trainer Program

INCREASING THE PROVISION

**Modular 8 Day Program
Delivered at NCC or Regional centres**

Turn-Key Solution
(To include training moulds and manuals)

Flexible Delivery ?

8 x 1 day

4 x 2 day

2 x 4 day

Supported Delivery

Facilitate & Support

Coordinate & Aggregate Demand

Summary

Identified Skills shortage

Supported Delivery

Deliver from 2017

Level 5 Funding (£27k)



Contact info.

brian.thornton@nccuk.com

07770633488