HM Government

Industrial Strategy: government and industry in partnership

Offshore Wind Industrial Strategy Summary

Business and Government Action

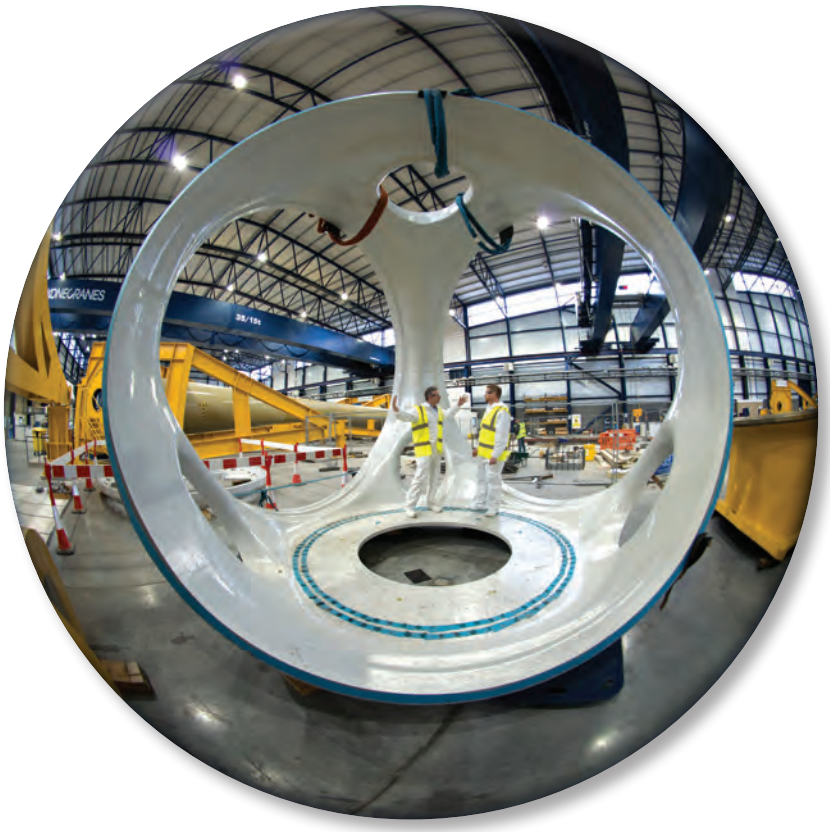
August 2013

Our Vision for the UK Offshore Wind Industry

Industry and Government work together to build a competitive and innovative UK supply chain that delivers and sustains jobs, exports and economic benefits for the UK, supporting offshore wind as a core and cost-effective part of the UK's long-term electricity mix:

The vision is to deliver:

- economic growth creating tens of thousands of long term UK jobs
- a clear and sustainable project pipeline
- major manufacturing facilities in the UK
- the development of a competitive UK-based supply chain
- a technology cost-competitive with other low carbon technologies



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Executive Summary

The UK is first in the world for installed offshore wind capacity and recognised as one of the most attractive locations in the world for offshore wind investment.[1] Electricity Market Reform, offering guaranteed price support through Contracts for Difference, subject to the Energy Bill, aims to give industry the certainty it needs to enable ongoing investment in offshore wind projects. As costs fall and the technology moves into the mainstream of the UK and European electricity generation mix, the UK has an unparalleled opportunity to develop an industrial supply chain, with the aim of supporting economic growth and long term employment. This sector has potential to become one of strategic economic importance to the UK, supporting a broad and deep supply chain and exporting technology and expertise all over the world.

The purpose of the offshore wind industrial strategy is to support the sector in delivering its economic potential by promoting innovation, investment and economic growth in the UK supply chain. By enabling development of a competitive supply chain, the strategy will help bring down costs to consumers through competition and innovation in the market.

The strategy identifies practical measures to develop and grow a competitive UK supply chain and attract inward investment from the top tier of the supply chain which will open up opportunities for the rest of the supply chain. UK companies must be able to compete globally, delivering cost competitive and high quality product, with the highest health and safety standards, to deliver our vision. The Strategy builds upon the measures set out in the *Cost Reduction Task Force Report*.[2]

The work will be led by the Offshore Wind Industry Council, a new partnership between Government and Industry, with support across Government through teams in DECC, BIS and UKTI as well as by the Governments in Wales, Scotland and Northern Ireland.

Success will be measured by significant long term growth in manufacturing and other facilities in the UK at the top tier of the supply chain – turbines, foundations, cables and substations – as well as in the deeper supply chain and in installation, operations and maintenance, and other services.

1 Ernst & Young (May 2013), *Renewable Energy Country Attractiveness Indices*

2 The Offshore Wind Cost Reduction Taskforce (2012), *Cost Reduction Task Force Report* https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66776/5584-offshore-wind-cost-reduction-task-force-report.pdf

Growth potential

The offshore wind sector has massive growth potential. Independent analysis forecasts 28GW of installed offshore wind capacity across the EU by 2020 and 55GW across the EU by 2030.

Under a strong growth scenario, the sector could deliver in the order of £7bn each year Gross Value Added (GVA) to the UK economy (excluding exports) and over 30,000 full time equivalent UK jobs by 2020, as well as £7–18bn in estimated net exports by 2030.[3]

The delivery bodies

The Offshore Wind Industry Council (OWIC) and the Offshore Wind Programme Board (OWPB), together with Government, identified the challenges facing the sector, developed the strategy and will oversee implementation.

The OWIC brings together developers investing in offshore wind projects in the UK, representatives of the UK-based supply chain, the UK Government, The Crown Estate and the Devolved Administrations. Its purpose is to provide a forum for dialogue between the different parts of the industry and to enable the UK offshore wind industry and Government to work together to remove barriers to offshore wind in the UK, reduce costs and build a competitive UK-based industry. As part of its remit, the Council will oversee delivery of the offshore wind industrial strategy, providing leadership and strategic direction.

The OWPB was established following the recommendations in the Offshore Wind Cost Reduction Task Force Report. It brings together representatives from developers and the supply chain, UK and Scottish Government, The Crown Estate and Statutory Nature Conservation Bodies. The OWPB's objective is to implement the Task Force's recommendations to drive cost reduction. The OWPB reports to the OWIC.

3 Sources provided in the Offshore Wind Industrial Strategy, August 2013 (full version)

Building on our strengths

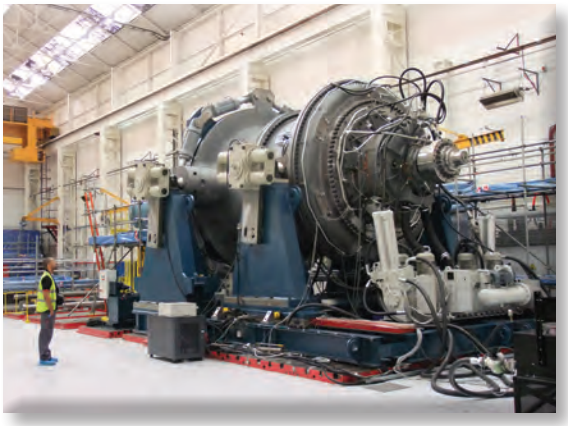
The UK is one of the most attractive locations in the world for offshore wind investment. We have:

- a large wind resource and favourable locations for offshore wind
- a robust regulatory regime, a solid planning framework and offshore leasing regime
- expertise in installation, operations and maintenance of large offshore infrastructure and advanced manufacturing and materials capability
- world-leading research and development capability

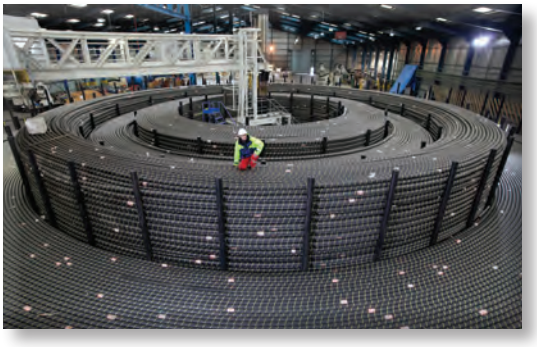
Tackling the challenges

There are challenges to ensuring that the UK supply chain benefits significantly from future offshore wind deployment and is able to fully capitalise on the opportunities this provides, including:

- increasing visibility of the likely size and timing of future market demand
- the presence of well-established competition in other countries
- attracting tier one equipment suppliers and other inward investment to the UK
- enabling UK supply chain companies to compete globally on cost and quality on a level playing field
- overcoming barriers to development and demonstration of the next generation of technology to drive down costs
- facilitating coastal and port infrastructure developments
- ensuring we can meet the future demand for highly skilled staff and that companies have access to reasonable cost finance



Market confidence and demand visibility



Long term market certainty is critical for investment decisions. Companies in the supply chain need confidence that there will be sufficient orders in the long term and visibility of the project pipeline, while developers need confidence that the new price support mechanism under Electricity Market Reform (EMR) will deliver.

Government has brought forward the key announcements on EMR that are intended to allow industry to plan major capital investment in the UK and its supply chain.[4] In June 2013, Government published the draft strike prices for renewables technologies, including offshore wind, up to 2018/19 and the limits on annual spending on low carbon generation, as agreed in the Levy Control Framework, up to 2020/21.

In the second update on Final Investment Decision Enabling for Renewables (FID Enabling), published in June 2013, Government set out the process and evaluation criteria for applicants for an Investment Contract. The evaluation criteria include the project's impact on industry development, focusing on whether it is likely to support the long term growth and economic viability of associated industries.[5] This will help the development of a broad, competitive and sustainable supply chain.

In order to support sustainable supply chain development and competitiveness, Government is minded to require developers of projects above a certain size to produce a supply chain plan before they can apply for a Contract for Difference (CfD), informed by the approach taken in the FID Enabling process. The supply chain plan will be expected to set out how the project and procurement approaches will support sustainable supply chain development, encourage a wider, more diverse supply chain and support innovation and development of skills. Government will develop the process and criteria over the coming months and will publish details later this year, working with the Offshore Wind Industry Council and key stakeholders to ensure that industry views are taken into account during this process.

To help ensure that the supply chain 'sees' the scale of the UK opportunity, developers are providing a project-by-project pipeline of demand showing key project

4 DECC (June 2013), *Electricity Market Reform: Delivering UK Investment* https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209276/EMR_Spending_Review_Announcement_-_FINAL_PDF.pdf

5 DECC (June 2013), *Final Investment Decision Enabling for Renewables Update 2: Investment Contract Allocation* https://www.gov.uk/government/publications/increasing-certainty-for-investors-in-renewable-electricity-final-investment-decision-enabling-for-renewables

milestones, invitations to tender and contracting decision points. Developers have also agreed to participate in 'Share Fairs' to share information on procurement strategies, timescales and any pre-qualification requirements with the supply chain.

In addition, the Manufacturing Advisory Service Offshore Wind Supply Chain Growth Programme (GROW: Offshore Wind) will provide an assessment of future markets for individual elements of an offshore wind farm, including contracting decision points relevant to companies deeper in the supply chain.

Full list of actions

No.	Detailed action	Responsible	By when
1	Publish further detail on Electricity Market Reform (EMR) implementation, including: i. further detail on CfD contract terms ii. final strike prices	DECC	 Aug 13 Dec 13
2	Develop process and criteria for a supply chain plan to be submitted before applying for a Contract for Difference (CfD)	DECC	2013
3	Provide open and realistic build timescales to show 'project pipelines' detailing tendering and contracting decision points to allow the supply chain to align expansion plans to market needs. The data will be published by RenewableUK.	OWIC/RUK/ Scotland Offshore Wind Industry Group (OWIG)	2013 onwards
4	Organise and run regular 'Share Fair' events where supply chain companies can learn about projects and forthcoming opportunities	OWIC/RUK	2013 onwards
5	Provide an assessment of future markets for individual elements of an offshore wind farm, including contracting decision points, through the MAS Offshore Wind Supply Chain Growth Programme (GROW: Offshore Wind), with funding from the Regional Growth Fund	MAS, with RUK, AMRC and Grant Thornton	2013 – 2016
6	Communicate benefits of offshore renewable energy across Europe and globally (Norstec) and promote local benefits (CORES), with a finalised engagement plan in the Autumn	Norstec and COREs	Autumn 2013 onwards

Competitive supply chains

For UK companies in the supply chain to compete effectively, they need to be cost competitive, provide reliable, quality products and have the capacity to bid for and win contracts. Moreover, new entrants are needed to increase capacity, introduce innovations, drive down costs and help prevent bottlenecks. To achieve this we will support UK companies to become more competitive and win contracts, exploiting synergies with other sectors – such as oil and gas – and promoting good practice in procurement approaches. We will also improve the support for inward investment through the new Offshore Wind Investment Organisation.

Government recently announced a £20m three year programme to build the competitiveness of the supply chain in England: the MAS Offshore Wind Supply Chain Growth Programme (GROW: Offshore Wind) is a new service delivered by the Manufacturing Advisory Service (MAS), with Grant Thornton, RenewableUK and the Advanced Manufacturing Research Centre (AMRC), supported by the Regional Growth Fund. The programme will focus on SMEs already in the sector looking to increase capacity, as well as those with the capability to enter the offshore wind manufacturing supply chain, and will provide a comprehensive package of support tailored to the individual company.

To support inward investment, UKTI will form the Offshore Wind Investment Organisation (OWIO) to promote investment in the UK by the offshore wind sector. Informed by assessment of the market demand and UK supply chain capability, the OWIO will focus on the areas of the supply chain where there is potential for inward investment, identify specific foreign-owned companies to target and work with developers to follow up on their supply chain plans.

As offshore turbines increase in size, the main components will need to be produced at coastal locations. Facilitating infrastructure developments at coastal and port locations in the UK will therefore be critical to investment in offshore wind manufacturing facilities. To date there has been some port development for manufacturing in the UK, although more is needed. To help unlock the significant port land available, DECC is expanding the scope of its offshore wind manufacturing funding scheme to allow ports/landowners at coastal locations to apply to support infrastructure development in assisted areas of England. Any grants offered will be conditional on sites securing manufacturing investment.

Developers have agreed to measure UK content for capital and operating expenditure which will help to identify where the UK is delivering a strong competitive supply chain and where further interventions are needed.

No.	Detailed action	Responsible	By when
7	Deliver the MAS Offshore Wind Supply Chain Growth Programme (GROW: Offshore Wind), supported by £19.9m from the Regional Growth Fund	MAS, with RUK, AMRC and Grant Thornton	2013 – 2016
8	Ensure companies investing in the sector in England understand and can access the support on offer locally	COREs	2013 onwards
9	Establish a new Offshore Wind Investment Organisation to deliver inward investment into the UK	UKTI	Autumn 2013
10	Explore contracting models and approaches, including approaches to increasing collaboration, framework agreements between developers and suppliers, and approaches to facilitating new entrants to the market	OWPB	2013 onwards
11	Undertake a supply chain gap analysis, supplemented by a complementary high level assessment of the UK supply chain capability	The Crown Estate/BIS	Autumn 2013
12	Promote export opportunities through the High Value Opportunities Programme, promotion of strategic collaborations and practical support to companies	UKTI and SDI	2013 onwards
13	Expand the scope of the offshore wind manufacturing funding scheme for England	DECC	2013
14	Measure and share information on UK content in offshore wind developments for both CAPEX and OPEX, using the methodology being developed by the OWPB, and review progress on increasing UK content	OWIC (developers)/ OWPB	2013 onwards
15	Promote knowledge sharing with the oil and gas sector, including through joint liaison officers in the trade associations to foster closer ties	RenewableUK/ Oil & Gas UK/ OWPB	2013 onwards

Innovation

By 2050, offshore wind innovation has the potential to deliver cost savings of £45bn and business creation for the UK worth £18bn.[6] It could also accelerate deployment and boost economic growth and jobs by building the UK supply chain, as well as enabling UK firms to develop products, skills and services for export worldwide.

To facilitate this, the Technology Strategy Board has confirmed £46.1m of funding for the Offshore Renewable Energy (ORE) Catapult over its first 5 years of operation. ORE Catapult will integrate the key players in the sector, strengthening collaboration between industry, academia and the public sector in offshore renewable innovation in the UK. This funding is in addition to the over £100m being provided by the members of the Low Carbon Innovation Coordination Group (LCICG) between 2011 and 2015 to develop innovative offshore wind technologies.

The LCICG will publish a Low Carbon Innovation Strategy in late 2013, setting out a shared vision to 2020 outlining the aims, principles, approach and technologies, including offshore wind, identified as important to the UK. The strategy will improve the consistency and coherence of support so that companies developing technologies have the confidence to take innovation projects through to market.

Test and demonstration sites are essential to support the commercialisation and deployment of innovative turbines and foundations. The UK has a large proportion of all European offshore demonstration sites under development, most significantly the European Offshore Wind Deployment Centre at Aberdeen Bay and the National Renewable Energy Centre (Narec) demonstrator at Blyth, which also has world class facilities for testing components. Government and industry will continue to work to bring forward the development of offshore wind testing facilities in the UK. The Crown Estate is also developing a new leasing programme to facilitate demonstration of technology breakthroughs on new and existing offshore project sites. As part of this programme, The Crown Estate will launch a Cost Reduction Monitoring Framework, designed to monitor cost reductions and share best practice across industry.

In Scotland, two new Renewable Obligation Certificate bandings are to be introduced to support offshore test and demonstration sites deploying innovative turbines and for projects piloting non-fixed generation such as floating turbines; these are 2.5 ROCs

6 Offshore Wind Technology Innovation Needs Assessment (TINA): http://www.lowcarboninnovation.co.uk/working_together/technology_focus_areas/offshore_wind/

and 3.5 ROCs respectively for projects that have generating stations with preliminary accreditation by end March 2017.

No.	Detailed action	Responsible	By when
16	Publish a Low Carbon Innovation Strategy setting out the Government's vision for low carbon innovation support, including offshore wind, to the end of the decade	LCICG	Late 2013
17	Provide £46.1m of funding over 5 years for the new Offshore Renewable Energy (ORE) Catapult to galvanise all UK innovation work streams and test assets	Technology Strategy Board	2013 -2018
18	Build on the work by the Offshore Wind Accelerator and continue to work to bring forward the development of offshore wind testing facilities in the UK	Government, developers and manufacturers	2013 onwards
19	Deliver a test and demonstration leasing programme to facilitate successful demonstration of technology breakthroughs, through extensions to existing sites, new sites and non-grid connected sites and implementation of improved contracting to help lower costs	The Crown Estate	2013 onwards
20	Launch a Cost Reduction Monitoring Framework, designed to track progress in achieving levelised cost reductions and share best practice	The Crown Estate	2014
21	Explore options to streamline the consenting process for testing and demonstration of offshore technologies	The Marine Management Organisation, The Crown Estate and partners	2013
22	Progress a suitable test and demonstration site in the Highlands and Islands for technology from 2016 onwards	Scottish Enterprise and Highlands & Islands Enterprise	From 2016

Finance

The ability of companies to access finance at reasonable cost is a key driver for building a competitive industry. This is particularly important for the offshore wind sector because of the high upfront capital costs generally required to enter the market. The development of offshore wind farms requires two distinct types of finance – while developers need to finance the capital expenditure of a project, the supply chain requires financial investment in facilities and equipment.

With the move to larger, deeper and further from shore sites, coupled with the general economic climate, developers will need to access billions of pounds from external finance sources to build offshore wind farms. Electricity Market Reform (EMR) aims to give the necessary long term certainty for investors but there is still more that Government can do to support access to finance. The Green Investment Bank, a Government financed £3.8bn commercial bank, has an ambition to invest over £1bn in the offshore wind sector, in the period to March 2015, co-investing in projects with commercial parties.

For the UK supply chain, accessing finance at a reasonable cost can be particularly difficult for companies bringing new innovative technology to market, companies setting up new facilities and SMEs. In addition, project developers often require a 'performance bond' or guarantee to underwrite the contract and ensure delivery. These can be difficult or expensive for small companies to obtain.

The new Business Bank, expected to be fully operational in 2014, will remove significant barriers to growth by tackling long standing structural problems in the supply of finance to UK SMEs and mid-sized corporates.[7] It will bring together £2.9bn of existing commitments with £1bn of new Government capital to leverage private sector investment and enable more lending to SMEs and mid sized companies. The Business Bank will look at the feasibility of improving affordability of the bonds and guarantees required by supply chain companies' customers. In doing so, it will draw on the experience of an existing scheme, the Tees Valley Catalyst Fund, and will examine the common issues across offshore wind and other sectors.

Government will work to ensure that the financial industry understands the real risk of investing in offshore wind and other energy sectors by facilitating discussion and engagement between the financial services sector and the main energy trade

7 BIS Policy Paper (March 2013), *Building the Business Bank: Strategy Update* https://www.gov.uk/government/publications/building-the-business-bank-strategy-update

associations (including oil and gas) to understand fully the scale of the issues for companies seeking to access finance and to explore solutions.[8]

No.	Detailed action	Responsible	By when
23	Look to invest over £1 billion in offshore wind, co-investing in projects with commercial parties	Green Investment Bank	Ongoing
24	Address gaps in the supply of finance to small and mid-sized companies through current schemes and the new Business Bank	BIS	Fully operational 2014
25	Consider applications for finance guarantees for offshore wind supply chain infrastructure projects under the UK Guarantees Scheme	Infrastructure UK	Ongoing
26	Investigate the feasibility of improving the affordability of bonds and guarantees required by supply chain companies by utilising Business Bank support	BIS	2014
27	Facilitate discussion and engagement between the financial services sector and the main energy trade associations (including oil and gas) to enable better understanding of the risks and issues surrounding energy investments offshore	BIS	2013 onwards

8 BIS/DECC (March 2013), *UK Oil and Gas Industrial Strategy: Business and Government Action Plan* https://www.gov.uk/government/publications/uk-oil-and-gas-industrial-strategy-business-and-government-action-plan

Skills

The number of jobs in the offshore wind sector is predicted to grow significantly as the operating capacity and build rate increases, increasing the demand for skilled professionals and trained individuals. Feedback from industry is that lack of skills is a significant issue for the sector and reported to be most acute in engineering and technician roles, offshore specialisms and specific offshore wind roles. The industry also reports a high percentage of hard to fill vacancies in managerial and professional roles and must compete directly with other energy industries for the most skilled and experienced employees.

Action now will ensure that companies have the skilled staff they need in future, support recruitment from the UK labour market and minimise the risk that UK suppliers cannot bid for new contracts because they are unable to recruit.

There are a number of Government and industry-led programmes to develop and retain skills, such as the Talent Retention Solution led by industry to retrain and redeploy engineers, the Talent Bank introduced by Energy & Utility Skills to enable employers to share the cost and risks of funding training and the Renewables Training Network run by RenewableUK. There is also an employer-led National Skills Academy for Power and Government funding for apprenticeships, with additional support for smaller employers. However, more could be done to raise awareness of existing funding streams and support work to tailor them to the specific needs of the offshore wind sector, which BIS, local Centres for Offshore Renewable Engineering (COREs) and industry will take forward. Energy & Utility Skills will support delivery of apprenticeship programmes including the Wind Turbine Engineering Apprenticeship across the UK.

Government and industry will also take forward work to increase awareness of the offshore wind sector as a career option and to ensure that higher education and professional institutes understand and address the needs of the offshore wind industry. For example, the Energy & Utility Skills higher skills group will introduce specialised units in the ‘Power Masters’ degree programme later this year to deliver specialised offshore wind skills.

No.	Detailed action	Responsible	By when
28	Raise awareness of skills interventions and funding available for the industry and explore whether these could be tailored to meet the needs of the offshore wind sector. Work at a local level to raise awareness of skills interventions and explore how existing interventions could be tailored to address specific needs	BIS/COREs/ industry	2013 onwards
29	Support employers in recruiting and training their workforce, for example using Talent Bank to pool demand and broker collaborative arrangements between employers, enabling them to share the cost and risks of funding training	EU Skills	2013 onwards
30	Identify the skills needed in the offshore wind sector and provide training to support the movement between industries in the wider energy sector and beyond, through the Renewables Training Network	RUK	2013 onwards
31	Support the delivery of apprenticeship programmes, including the Wind Turbine Engineering Apprenticeship across the UK	EU Skills	2013 onwards
32	Develop an industry-led Skills Investment Plan for Energy, to support the development of skills solutions for the energy sector, including the offshore wind sector	ESAG (Scotland)	2014
33	Engage with higher education and professional institutions to include more offshore wind specific content in engineering courses, including introducing specialised wind units in the 'Power Masters' programme	EU Skills and RUK	2013 onwards
34	Raise awareness of career opportunities in the sector, for example through the BIS "See inside Manufacturing" project which arranges for students to visit behind the scenes of key manufacturing sectors and the STEM Ambassadors programme	OWIC/RUK/ EU Skills	2013 onwards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