Nuclear Energy Skills Alliance Annual Review 2012/13






This review sets out the Alliance's key achievements over the past year and the challenges for 2013/14

Nuclear Energy Skills Alliance

Foreword from the Board

This is a key time for the UK civil nuclear industry and its supply chain. As we move ever closer towards a nuclear renaissance in this country, it is vital that employers have the skilled workforce they need to deliver the new nuclear programme to time and to budget, alongside existing operations and decommissioning activities.

The members of the Nuclear Energy Skills Alliance[1] each represent an important aspect of that programme: from construction to research and development, operations to manufacturing. We are working closely with employers to identify skills demand and take action to ensure that the UK workforce is in the right place, at the right time with the right skills to meet this demand.

2012/13 has been an important year for the Skills Alliance: we held a joint workshop with industry to sense-check the skills areas we are focussing on and the actions being taken; based on industry comments received we published our first, detailed skills delivery plan; we expanded to include the Higher Education and R&D community (represented by the University of Manchester's Dalton Nuclear Institute) and the Welsh Government; and we have moved on to a sound programme management footing to ensure that cross cutting skills issues (such as Apprenticeships, common labour market intelligence and funding) can be addressed for the good of the civil nuclear industry and its supply chain.

The common thread running through all this activity is the need for close and on-going engagement with employers. We all need to work together to define skills requirements and develop actions to address areas of concern. To facilitate this process, Skills Alliance members are developing a Nuclear Workforce Model that will highlight skills gaps over the course of the New Nuclear Programme.

We know that there will be many challenges over the next year, but experience overseas demonstrates the importance of having a workforce with the skills to deliver. To this end, it is vital that we continue to work in partnership with industry over 2013/14.

[1] Nuclear Energy Skills Alliance members: Cogent SSC, CITB, ECITB, National Skills Academy for Nuclear, Semta SSC, Dalton Nuclear Institute, Department for Business, Innovation and Skills, Department of Energy and Climate Change, Welsh Government

Table of Contents

Introduction

Background

- The Nuclear Energy Skills Alliance's mission is to ensure that the UK nuclear industry and its supply chain are supported by a workforce with the skills, capability and capacity to successfully deliver the current and future UK Nuclear programme with the highest standards of professionalism, safety and competitiveness.
- The Alliance brings together Government, skills bodies and the higher education and research and development communities in a strategic alliance to:
- Build up a clear picture of anticipated future demand for skills for nuclear operations, decommissioning and new build.
- Avoid duplication of effort by co-ordinating activities.
- Align standards to underpin the quality of training delivery.
- Highlighting areas where additional action is required by Government or Industry to address skills issues.

Purpose of the Annual Review

- This annual review provides an opportunity to share the successes and highlight the progress that the Alliance is making, as well as to consider the challenges in the year ahead.
- Each skills body in the Alliance produces separate, detailed reports on their activities. This review does not attempt to replace those, but instead seeks to highlight where collaboration between Industry, skills bodies and Government is adding real value for the industry.

Key achievements in 2012/13

a) Identified skills priorities

- In December 2012, the members of the Nuclear Energy Skills Alliance published a common skills delivery plan. The plan sets out the 22 priority skills areas for the delivery of the UK civil nuclear programme, and key deliverables against each skill. These have been identified through regular engagement with employers and were checked with nuclear industry and supply chain representatives at an Alliance workshop in September 2012.

- The delivery plan is a 'live' document and will be updated as industry priorities evolve over the course of the programme, with progress monitored by the Skills Alliance Board.

b) Labour Market Intelligence: the Nuclear Workforce Model

- In addition to the qualitative analysis currently used to identify skills priorities, members of the Skills Alliance are also working to develop a quantitative nuclear skills evidence base. The Nuclear Workforce Model, which was commissioned and funded by DECC and the UKCES, will build on the workforce analysis contained in the Nuclear Industry Association's (NIA) capability report. The Skills Alliance and the NIA had been working to develop a common assessment of the demand profile for the 16GW new build programme.

- The outputs from the model will identify gaps in the supply and demand of specific jobs across the industry, to ensure that skills investment is focused on the areas of most critical importance to the delivery of the UK civil nuclear programme.

c) Expanded membership of the Skills Alliance

- In 2012, the Skills Alliance membership was broadened to include both the University of Manchester's Dalton Nuclear Institute, and the Welsh Government. The Dalton Nuclear Institute represents the views of the UK's research and development and higher education communities. The Welsh Government ensures that the separate Welsh skills system is reflected in Skills Alliance actions.

- In addition, 2012 also saw the Alliance move on to a strong, programme management footing to help drive forward progress on the range of

workstreams that members are undertaking. Full details on the Alliance's structure can be found in Annex 2.

Challenges for 2013/14

The table below sets out the high level challenges that members anticipate for 2013/14, and our plans to address these:

Challenges for 2013/14	Planned Alliance member activities
The construction workforce As construction begins at Hinkley Point C, there will be a sharp increase in demand for a construction workforce with the relevant qualifications and experience to work on a nuclear build.	• Work with Bridgwater College in Somerset to support pre-employment training for the local construction workforce. • Development of workforce planning with industry to ensure relevant training is available at the right time. • Roll out of the Triple Bar New Nuclear Build Sites
Dealing with current skills shortages Employers have reported difficulties recruiting appropriately skilled staff for specific roles, often leading to wage inflation (e.g. high integrity welders).	• Implement the actions to address priority skills as set out in the alliance Delivery Plan. • Kick-off an £8 million Employer Ownership of Skills and industry joint-funded programme to train an additional 290 high-integrity welders over 2 years.
Focus on the long term There is a need to ensure skills development at all levels, including in areas where the time required to reach an adequate level of skill can take years (as is the case with subject matter experts)	• Work with the National Nuclear Laboratory and industry to ensure a relevant pipeline of subject matter experts, building on the Sir John Beddington review of Nuclear Research and Development. Seek to access funding to support this.
Retaining expertise and knowledge The current civil nuclear workforce is ageing and there is a risk of losing expertise and knowledge.	• Working with industry to improve knowledge capture, storage and transfer for when workers leave the industry. • Implementing a programme to assist experienced workers that are no longer required at one site to transfer to suitable roles elsewhere on the nuclear estate.
Attracting new talent It is vital that the industry can attract and retain the talent that it needs to deliver the civil nuclear	• Launch of the National Nuclear Gateway, an industry and Growth Innovation Fund co-

programme. This includes through increased numbers of apprenticeships and clearly define career paths within nuclear.	financed project to deliver transformational deliver transformational growth in the UK nuclear industry, including an additional 3,000 apprentices in the supply chain by 2016.

Monitoring progress

The Skills Alliance is developing an agreed set of targets, benefits and key performance indicators within the next six months. The table below shows an indicative list of objectives and potential benefit measures.

Objective	Benefit	Activity	Benefits Realisation
1. To address the workforce skills gaps.	Increased capacity of relevantly trained individuals with particular emphasis on the priority skills gaps and shortages identified by the Skills Alliance. Improved competence levels supporting an increased range of skills and qualifications in priority areas. Availability of relevant and accessible programmes to engage in nuclear related work.	Map existing training provision against identified needs Identify gaps in training provision Develop consistent messages on issues and solutions Develop a single plan to address gaps in training provision (agree plan) Implement the plan using developed processes and systems	Evidence of the single plan and actions completed with identified benefits.
2. Create a single comprehensive training framework. The Nuclear Industry Training Framework (NITF) will act as the central repository to reduce duplication.	The NITF qualifications and standards present a development framework for the nuclear workforce. This can also be used to support Objective 1.	Develop/maintain NITF	Evidence of NITF being used and valued by employers

Objective	Benefit	Activity	Benefits Realisation
3. To ensure maximum return on investment for training related expenditure.	Reduced costs of training delivery, for example through increased learner numbers providing economies of scale on key programmes.	Using agreed plan, monitor and evaluate progress, implementing recommendations and actions	Indication of reported increase in uptake of key programmes
4. To make better, informed decisions on how resources are deployed.	Reduced or eliminated wasteful and unnecessary duplication of training activity.		Collaborative evidence of shared resources.
5. To have consistent labour market intelligence that provides clearly identify and articulated actual skill needs, requirements, expectations and priorities	Increased confidence in LMI, eliminating overlaps and double counting	Engage with SLC employers and Supply chain Working collaboratively contribute to date input to workforce planning model	Interpret clear relevant LMI data from NWM
6. To enhance nuclear culture in SLC and Supply Chain	Clarity across the supply chain of SLC requirements and expectations	Increased up-take of nuclear awareness programmes e.g. Triple Bar and Award for Nuclear Industry Awareness	Increased number of supply chain companies with a workforce with an understanding of working in a nuclear environment
7. To grow knowledge/asset base	Partner Business Plans corroborate Nuclear Energy Skills Alliance activity	Work collaboratively	Alliance activity reported in partner business plans

NB: The activities listed in this table are flexible and will be responsive to identified changes.

Case Study 1

Dalton Nuclear Institute: Subject Matter Experts

The Sector Skills Council, Cogent[1], has identified a major nuclear skills challenge arising from the coincident loss of expertise due to retirements and expanded demand from new nuclear build. Over half of the 44,000-strong civil nuclear workforce will retire by 2025.

Much critical knowledge for the nuclear industry resides in "Subject Matter Experts", individuals who have amassed knowledge, experience and insight over periods of some decades in specialist fields. Historically, Subject Matter Experts gained knowledge from participation in major national and international R&D programmes, and typically had a minimum of 10-15 years R&D experience, either in industry, academia or both. It is not possible to replace their contribution easily.

The UK's Subject Matter Experts are already becoming vulnerable. For example, without intervention, knowledge and expertise in reprocessing technology will dwindle once the UK closes its reprocessing facility in 2018. Likewise, plutonium fuel technology R&D is fragile following the recent closure of the Sellafield MOX plant. In some areas, the UK needs to build up the capability from a low base, e.g. radiation science for reactor/fuel technology, and hydrogeochemistry linked to underground disposal.

With focus on this critical area, the Government's Nuclear Research and Development Advisory Board set up a Skills Sub-Group including members from the National Nuclear Laboratory, The University of Manchester's Dalton Nuclear Institute and the National Skills Academy for Nuclear.

The Skills Sub-Group's paper 'Meeting UK Nuclear Skills Needs to 2050 - A Unified Strategy for World-class R&D Skills Development' set out a vision for regenerating the UK's high-level nuclear R&D skills base. Recommendations include changes to the way we think about R&D - by expanding the sole focus on the delivery of an end "product" with imparting specific knowledge, skills and experience from Subject Matter Experts to the next generation. Skills development that reflects the new knowledge, skills and experience to be gained from undertaking R&D is likely to be important in any new National Programme in nuclear energy research. More generally, a future skills strategy might also include the strategic planning of career pathways for talented individuals, coupled with creative ways of retaining Subject Matter Experts in the nuclear sector beyond formal retirement. This would allow individuals to develop the technical and other skills needed to excel in their specialist field, contribute over a longer timeframe, and also impart their knowledge to others.

[1] Cogent Renaissance Series Reports 1 and 2.

For further information, contact:
Professor Andrew Sherry FREng, Dalton Nuclear Institute
Tel: +44 (0)161 275 4325; www.manchester.ac.uk/dalton

Engineering Construction Industry Training Board

ECITB and CITB: Collaborative Working Case Study

ECITB and CITB are working collaboratively on a number of work streams.

Through the Nuclear Energy Skills Alliance work is underway to identify current training provision, potential duplication and any gaps in respective training and qualification frameworks. The starting point for this activity has been for ECITB and CITB to carry out a cross mapping of their current manager and supervisor, Health & Safety programmes. This work will lead into a larger exploration of sector and cross sector programmes with a view to establishing nuclear new build standards for training and qualification provision relating to supervisors and managers.

The ECITB and CITB are also working together to develop an industry supported, recognised and endorsed Health, Safety and Environment (H,S&E) accreditation for personnel working on nuclear new build projects through the CCNSG scheme.

Work has commenced on mapping the different schemes with the objective of identifying a clear rationale to meet the needs of those in scope to both organisations. A significant benefit of this work will be to avoid duplication of training with resultant cost and time benefits to relevant employers.

Significant success has already been achieved in engaging with critical nuclear stakeholders and valuable lessons have been learnt as a result of engaging with the UK's nuclear new build programme since 2011. This is particularly recognised through efforts to support the two sectors employment and skills agenda through collaborative working, engagement with other Nuclear Energy Skills Alliance members and working closely with client and contractors on the EDF Hinkley Point C project.

For further information, contact:

Engineering Construction Industry Training Board
www.ecitb.org.uk
01923 260000

CITB
Scott Cooper-Groom (Major Projects Manager)
07747 044937 / scott.cooper-groom@citb.co.uk

Case Study 3

Cross-sector LMI will set out the roadmap for skills development

The UK nuclear industry and its supply chain will benefit from new Labour Market Intelligence (LMI) when the Cogent operated Nuclear Workforce Model is used later in 2013 to provide core material for reports from the Nuclear Energy Skills Alliance.

Cogent has developed the model to provide a comprehensive and flexible view of the UK civil nuclear workforce. Through the Nuclear Energy Skills Alliance, the Cogent is working with CITB, ECITB, NSA Nuclear and Semta to develop an understanding of the workforce requirements for the breadth of the industry and its supply chain.

A key feature of the model is the ability to dynamically generate future skills scenarios to guide future interventions. It will highlight potential nuclear skills pinch points, identify opportunities for workforce transitioning and provide demand signals to training providers.

Detailed and annually refreshed LMI will allow the industry and its supporting supply chain to take full advantage of the imminent opportunities in the UK. It will also support the NDA in transitioning workers through the various stages of nuclear decommissioning.

Opportunities for further collaboration
Working together throughout 2013 and beyond

A sub-group of the Alliance has been formed to meet regularly to discuss the solutions to the Alliance Risk Register.

The Alliance is now recognised as a formal collaborative group, and will continue to be responsible for taking forward skills issues across all civil nuclear programmes to the Department of Energy and Climate Change and the Department for Business Innovation and Skills.

What benefits does the NWM bring to the industry?

Labour Market Intelligence will support employers in developing mid to long-term recruitment and skills development strategies.

Input from the range of Alliance members is designed to support industry-wide analysis.

Data generated will be crucial in the Alliance making the case for government investment in skills.

Findings will lead to the enhancement and development of skills interventions to make sure we have the best opportunities remove and address skills shortages.

For further information, contact:

Cogent SSC
www.cogent-ssc.com
01925 515 200

Case Study 4

Engineering Construction Industry Training Board

people · productivity · performance

Generating Skills for High Integrity Welding in the UK

The planned nuclear new build programme in the UK will place a significant demand on the UK's population of skilled welders; this is recognised in the Nuclear Skills Alliance Delivery Plan which lists High Integrity Welding as a critical skills priority.

The new build programme requires advanced welding processes in many safety-critical areas of a nuclear power plant and in the manufacture and assembly of key components. Put simply, without suitably qualified and experienced welding personnel at all levels of the nuclear supply chain, the new build programme will be at risk.

As part of the Skills Alliance, the Engineering Construction Industry Training Board and Semta, the Sector Skills Council for the advanced manufacturing and engineering sectors, are working together to help mitigate that risk.

The focus of the collaboration between ECITB and Semta over the last 12 months has been sharing knowledge of existing standards and programmes and involving each other on the development of new activities.

The aim of the ECITB is to significantly increase the skills and numbers of competent welders, welding supervisors, welding coordinators, and welding engineers in the engineering construction workforce and increase their ability to deliver effective projects on-site in nuclear and elsewhere.

The ECITB proposes to deliver a range of new qualifications and strategies to clarify standards and encourage skills development and growth. These include:

- Qualification in Advanced Welding Techniques
- Qualification in Welding Supervision
- Higher Apprenticeship in Advanced Welding
- Engagement with Schools
- Up Skilling support for existing tradespeople

In addition, the ECITB has already developed Training Standards for 21 advanced welding techniques, which are in use by a number of employers. Approvals for the qualifications are anticipated by end July 2013.

Semta, working with Rolls Royce and the Nuclear Advanced Manufacturing Research Centre, have developed the specification for a new qualification in high integrity pipe welding, designed, in particular, for use in the nuclear manufacturing industry.

The EAL Level 3 Diploma in High Integrity Welding (QCF) will help companies train their apprentices with the skills needed to compete for business in the nuclear supply chain.

The qualification follows the National Welder Training Standard (NWTS) developed by The Welding Institute (TWI) and has been designed so that individuals can easily follow a professional development pathway potentially leading to international welding standard qualifications. It will also be Technical Certificate in the next release of the Semta L3 Advanced Apprenticeship framework.

In summary, planning for the future skill needs of nuclear new build both in terms of engineering construction and plant manufacturing is a key priority for ECITB and Semta. The development and growth of advanced welding is at the forefront of this work.

For further information, contact:

Engineering Construction Industry Training Board
www.ecitb.org.uk
01923 260000

Case Study 5

Celebrating Excellence in Skills for Nuclear

Research shows that a nuclear new build programme will require between 110,000-140,000 person years of skilled nuclear work - the equivalent employment requirement of three London 2012 Olympics. This translates into a demand for around 1,000 new apprentices and 1,000 new STEM, (science, technology, engineering and maths) graduates, throughout the civil nuclear industry and supply chain, each year to 2025.

Apprenticeships and graduates are seen as two of the key avenues for replenishing and building skills for the nuclear sector.

The National Skills Academy for Nuclear and Cogent Sector Skills Council have worked in collaboration on an annual UK Nuclear Skills Awards evening which first ran in 2009.

The UK Nuclear Skills Awards provides a platform for the industry to showcase excellence in skills development and highlight nuclear professionalism.

The Awards celebrate the achievements of Apprentices, Graduates, HND/FD Students and individuals who have demonstrated outstanding contributions to the skills development of the people in their organisations.

The event identifies professionals who act as ambassadors for the industry. Many of the finalists have become industry spokespeople and have completed a myriad of awareness raising events, aiding in the promotion of the Sector and the opportunities available to the next generation of apprentices and graduates.

Each finalist completes a short case study film which is used to promote careers in the nuclear industry, apprenticeships, graduate routes and other qualifications. Many of the films have been used in STEM materials to provide examples of people who have chosen a career in the nuclear industry, aiding in the encouragement of more apprentices and graduates.

The Awards provide the industry with an annual awareness raising opportunity to promote the Sector; raising the profile of the nuclear industry as one of career opportunity and advancement.

The event is now a sell out each year and has become a firm favourite in the nuclear event calendar.

For further information, contact:
Cogent Sector Skills Council
W: cogent-ssc.com
T : 01925 515200

The National Skills Academy Nuclear
W: nuclear.nsacademy.co.uk
T : 01900 898120

Getting Ready for the Nuclear New Build Era

New entrants to the sector lack the basic awareness and understanding of working on a new civil nuclear reactor build project.

Many individuals working in the construction industry will have existing technical and professional skills, however they need to understand how to apply these skills in a nuclear environment and context, leading to an understanding of what is 'special' about working in a nuclear environment and the latent impact of behaviours.

The **Triple Bar Nuclear New Build Sites (TBNNBS) Training and Assessment** has been developed by EDF Energy NNB, the National Skills Academy for Nuclear and CITB and is now ready for roll out prior to enabling works commencing at Hinkley Point C.

A major challenge has been to be able to deliver the training and assessment widely across the UK. This has been addressed by creating the training as a multi-media and e-Learning package available for free across the internet via the Skills Academy's On-Line Portal. Classroom delivery will also be provided via Quality Assured Providers.

The TBNNBS contextualises training specifically for the new build agenda and has been developed in response to Nuclear Industry stakeholders request for the introduction of an 'entry bar' for individuals working in and with the Nuclear Industry. The Assessment will be available at 153 Pearson-VUE Test Centres and over 300 CITB approved independent test centres throughout the UK.

Key to the success of this development project has been the importance of agreeing sound and robust principles for collaborative working across the CITB, EDF Energy and National Skills Academy for Nuclear stakeholder group. This has encouraged the recognition, and, achievement of common goals that will facilitate the delivery of a solution that reduces the impact of additional cost and time burden upon main contractors, supply-chain organisations and personnel whilst ensuring robust standards are set, measured and maintained.

It is expected that around 25,000 workers will be involved in Hinckley Point C over the next 10 years. Preparation and having the skills for working in nuclear is vital to the future success of the UK nuclear new build programme.

Having the Triple Bar Nuclear New Build Sites training and assessment material ready for the commencement of the programme helps to ensure we have the transferrable skills in place for successive nuclear new build sites as these are approved by UK Government.

For further information, contact:
CITB

Scott Cooper-Groom (Major Projects Manager)
07747 044937 / scott.cooper-groom@citb.co.uk

The National Skills Academy Nuclear
W: nuclear.nsacademy.co.uk
T : 01900 898120

Case Study 7

Up skilling UK manufacturers for Nuclear

The manufacturing supply chain skills gap for the UK new build programme equates to 200- 400 at graduate level and above, 300-400 at technical level and 150-300 at lower levels – or approximately 1,000 more workers than today for each year until 2025.

Therefore, the National Skills Academy Nuclear embarked on a proposal in 2011, to expand its services into Nuclear Manufacturing to support the growth of skills within the nuclear manufacturing industry.

However, because of the existing level of confusion and duplication in the skills landscape for employers, it was decided that it would be better to bring together the individual strengths of Semta, the sector skills council for the advanced manufacturing and engineering sectors, and the Nuclear Advanced Manufacturing Research Centre into a strong and innovative partnership which would deliver one joined up message and integrated offer.

A major challenge in bringing together three very different organisations, under tight timescales, was to try and agree a business plan and how the partnership would work in practice. Challenges such as finances, staffing, job descriptions, and products to be offered and their ownership were discussed at length not just at a senior level but throughout the organisations.

The other challenge was also obtaining employers' representation to ensure the partnership would meet their needs.

To address this, the partners met on a regular basis and openly recognised what each one was putting in and receiving from the partnership, to ensure a balance across the board. A number of employer working groups were also set up to steer the proposals.

A key learning point has been the importance of building in enough time to collaborate with each partner organisation, at every level not just through senior staff. Building in employer consultation time is also crucial.

The partnership worked through these challenges successfully and the business plan was approved in May 2012 and **"The National Skills Academy for Nuclear Manufacturing"** was officially launched in September 2012.

For further information, contact:

The National Skills Academy Nuclear Manufacturing
W: nuclear.nsacademy.co.uk
T: 01142 229943

Appendix 1 – Skills Body profiles

Cogent is the skills standards setting body for the Nuclear Industry. Its aim is to enable the supply of suitably skilled people to meet the immense challenge of ensuring the nuclear renaissance and the move to low carbon electricity generation. All strands of Cogent's activity are designed to meet that goal but their impact is in distinct areas of research, qualifications & job standards and future skills.

Research - Cogent will maintain the Nuclear Workforce Model, providing industry and academia with leading Labour Market Intelligence (LMI). To ensure that the overall workforce from all of the sectors required to sustain the current programme can do so safely and efficiently, whilst completing the nuclear new build programme in line with industry and government aspirations.

Qualifications and Job Standards - The Nuclear Industry Training Framework (NITF) provides a database of training standards. It is the source of training standards for the nuclear industry including training standards produced by other skills bodies where there are relevant to and used by the nuclear industry. The nuclear industry has agreed job categories, and therefore all standards sit within a specific category. The NITF will assist employers in meeting large skills challenges and enable the workforce to be lodged on the National Skills Academy for Nuclear Skills Passport to facilitate the movement of personnel around the industry without the need for repeat training. Cogent will develop and maintain standards that are required by the nuclear industry to ensure that the NITF is comprehensive.

Future Skills - The Nuclear Island concept has been designed to assist in the provision of a nuclear ready workforce with an understanding of the essential nuclear safety behaviours contextualised to their profession. Through 2013 Cogent, with partner organisations, will be extending the existing civil engineering package to include mechanical and electrical engineering, providing greater industry attractiveness for even more engineers and technicians. Cogent's ambition is to increase the number of colleges and universities offering the programme to attract over 900 students to the weeklong programme.

Cogent will update the Career Pathways resource, improving the information available and providing inspiration to individuals looking to enter the industry through clear and accurate information. Linkage to school curriculum will enable teachers and career advisors to benefit from this tool.

As the Construction Industry Training Board it is the role of CITB to increase training and skills within the construction sector. The Government gives powers to collect a levy from industry; CITB return the money collected back in training grants. In 2003, ConstructionSkills was given license to operate as a Sector Skills Council. CITB works to:

- reduce skills shortages
- improve business performance
- bring a diverse range of people into the industry
- improve learning for apprenticeships, higher and further education
- develop professional occupational standards

CITB also provides market leading and authoritative labour market intelligence offering resources such as the Construction Skills Network (CSN) and the ConstructionSkills Labour Forecasting Tool (LFT). The CSN is a unique method of establishing the future skills and training requirements of the UK construction industry; the LFT gives an 'evidence base' upon which to plan and negotiate realistic community benefits arising from skills and training requirements on construction projects.

In 2012 CITB allocated £2 million funding from levy though the Major Projects department in order to further the UK's construction sector employment and skills agenda within the Nuclear New Build context. The Major Projects department's role is to co-ordinate solutions to the skills issues faced by major infrastructure projects, to improve the skills available and productivity of the construction sector through CITB established products and employer services, the development of new solutions.

As well as working closely with agencies, providers, brokers and other external organisations, CITB is uniquely placed within the education, skills and employment environment to support this work as Industry Training Board, Sector Skills Council, National Skills Academy for Construction, National Construction College, the awarding organisation CSkills Awards and provider of Employer Services:

- NCC is the direct training division of CITB and is the largest construction training provider in Europe with five campuses around the country offering specialist construction training.

- NSAfC is a demand lead, project-based training concept that is tailored to helping clients and contractors to get the right skills where they need them.

- Leading awarding organisation, Cskills Awards offers a wide range of competence (NVQ) and training qualifications in construction.

- Employer Services provides a complete skills solution for the whole construction industry. They engage with stakeholders to ensure the facilitation and provision of the current and future skills requirements and provide information, advice and guidance together with appropriate services to support the development of the qualified workforce.

Engineering Construction Industry Training Board

The Engineering Construction Industry Training Board (ECITB) is the statutory organisation, national training provider and awarding organisation with the responsibility for the training and development of the UK's engineering construction industry workforce. The ECITB provides professional advice, information, skills development and qualifications to help individuals within engineering construction, succeed in their chosen careers.

ECITB's Objectives:

The nuclear sector presents its own set of opportunities and challenges for the engineering construction industry. It needs highly skilled engineers and technicians who are at the cutting edge of today's technology: around 11 per cent of the UK engineering construction workforce is involved in nuclear work and this is set to rise to 20 per cent as the new build programme develops. In response to this need, the ECITB is investing around £6M annually – 20 per cent of its overall investment activity - in a co-ordinated programme of skills enhancement for nuclear.

Nuclear Specific Courses:

The skills enhancement programme has been developed in consultation with the employers and stakeholders of the nuclear industry and is based directly on its needs. Existing nuclear specific courses eligible for support include: Award in Nuclear Industry Awareness; Certificate in Nuclear Team Leaderships; Maintenance of Nuclear Systems; Nuclear Skills Development; and Certificate of Nuclear Professionalism.

Key Projects:

The ECITB is working as part of the Nuclear Energy Skills Alliance to ensure that the UK nuclear industry and its supply chain is supported by an engineering construction workforce with the skills, capability and capacity to successfully deliver the current and future UK nuclear programme. Key projects include: enhancement of project and programme management standards and training, site supervisor training; and development and implementation of 21 new training standards for welding and welding supervisors. The ECITB is also co-coordinating the growth of 15 apprenticeship frameworks to support the nuclear programme.

Dedicated Nuclear Sector Manager:

ECITB has a dedicated Nuclear Sector Manager, and a Board Member appointed from the nuclear industry. A key part of their roles is to enhance customer engagement and develop communications in the nuclear industry. **Website:** www.ecitb.org.uk

The National Skills Academy
NUCLEAR

The National Skills Academy for Nuclear (which includes the NSA Nuclear Manufacturing) is the 'lead strategic body that represents the industry to stimulate, coordinate and enable excellence in skills to support the nuclear programme.'

The Skills Academy is an employer led membership organisation established to ensure that the UK Nuclear Industry and its supply chain has the skilled, resilient, competent and safe nuclear workforce it needs to deliver the current and future nuclear programme. The focus is on developing the right and appropriate standards of nuclear professionalism (including behaviours, industry awareness and understanding) in all areas of the workforce, with nuclear safety and security principles embedded throughout. Delivery is via an effective network of High Quality Providers and through strong partnerships with members of the Nuclear Energy Skills Alliance, the Nuclear Institute and the Nuclear Industry Association.

Objectives:

Employer Engagement

- To maintain and further develop a broad network of employer membership leading to a sustainable and vibrant business that meets industry needs
- To work with employers to help to demonstrate to the public and target markets the excellence in skills development undertaken so that opportunities are understood

Resource Capability

- To continue to identify standards and implement improvement measures to aid in the demonstration of a suitably qualified and experienced workforce
- To support the workforce in gaining the skills required to underpin competence
- To define and enable a coherent approach to skills across the UK

Resource Capacity

- To work with employers, government and skills partners to clarify and communicate resource requirements so that current demand and supply forecasts and timelines are understood and addressed so that expectations are managed
- To define and enable a coherent approach to resource capacity across the UK

High Quality Training Provider Network

- To maintain and further develop the high quality training provider network to meet the quality and availability requirements of the nuclear programme
- To encourage the up-take of appropriate trainer development programmes to support high quality training delivery

Semta is the employer-led Sector Skills Council for the Advanced Manufacturing and Engineering sectors, representing Aerospace, Automotive, Composites, Electrical, Electronics, Maintenance, Marine, Mathematics, Mechanical, Metals and Engineered Metal Products, Renewables and Science. Semta is responsible for 128,000 companies and 1.65 million-strong workforce

Semta addresses the sectors' skills needs, providing expert support to improve performance and growth. It does this by working with employers, partners and training providers to shape skills and training solutions that meet employers' needs.

In 2012 Semta joined forces with the National Skills Academy for Nuclear and the Nuclear Advanced Manufacturing Research Centre to create the National
Skills Academy for Nuclear Manufacturing, with support from the Skills Funding Agency. The aim of this new venture is to help harness existing world class skills within manufacturing organisations and to develop new skills and nuclear knowledge, in order to improve the UK nuclear manufacturing sector.

Semta's Objectives

Supporting
Accessing funding, quality training providers and a suite of tools to give companies a return on investment

Employing
Recruiting and mentoring engineering and STEM apprentices and graduates

Monitoring
Accessing supply chain capability to produce company training plans

Training
Offering high quality training programmes, with demonstrable results from the shop floor to the managing director

Advising
Advising everything needed to be a success in the advanced manufacturing and engineering sector

Website: www.semta.org.uk
Twitter: Semta_4Skills

The University of Manchester
Dalton Nuclear Institute

The University of Manchester's Dalton Nuclear Institute represents the UK's higher education and R&D community on the Nuclear Energy Skills Alliance.

The University is committed to the broad UK nuclear education and skills agenda and is seen as a lead Higher Education Institution for nuclear-related education and R&D. It heads at least ten RCUK-funded research consortia and participates in more than fifteen others. In addition to its collaborations with other academic institutions, it has strong established links with industry, national laboratories and the regulator. It is a member of the SBM management consortium for the National Nuclear Laboratory and is a member of the National Skills Academy for Nuclear.

High-Level Skills – challenges, capabilities and objectives

The UK nuclear high-level skills challenge is significant. The age-profile of the sector means that about 70% of senior managers and research leaders will retire within a decade. The substantial expansion of nuclear generating capacity adds to this challenge and successful delivery will depend critically on the UK's ability to regenerate and expand the base of suitably qualified and experienced personnel.

Through academic, national laboratory and industrial interdisciplinary collaboration, The University of Manchester, along with other UK academic institutions, plays a key role in providing the high-level knowledge and skills needed by the nuclear sector; covering undergraduate courses, postgraduate qualifications and research, and professional development courses for industry.

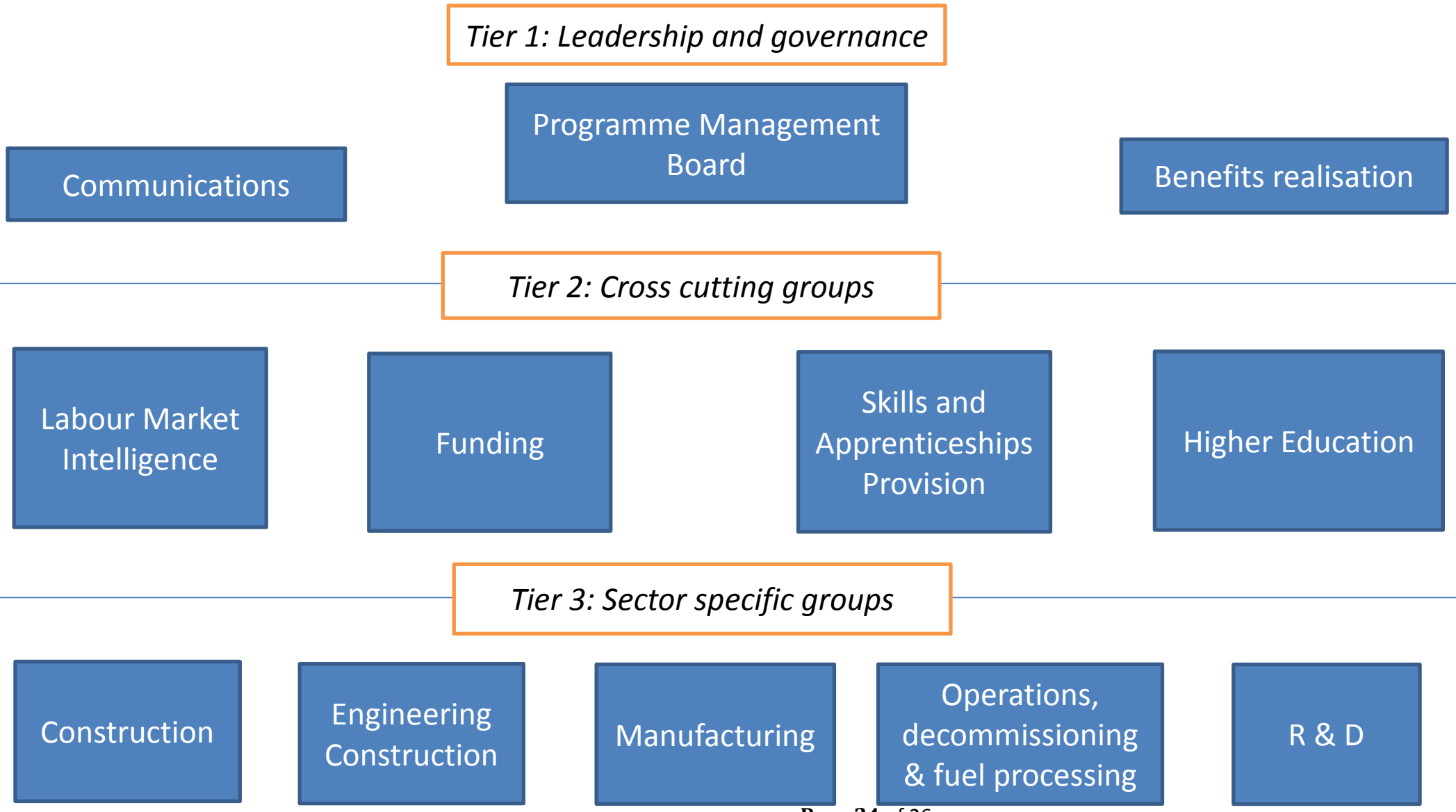
The UK University sector has a strong and expanding capability in nuclear skills development. Recent years have seen a growth in the nuclear content of Bachelor's degrees in engineering and physical sciences and the initiation of new degrees at both Bachelor's and Master's levels. These include Nuclear Engineering (Lancaster), Physics with Nuclear Technology (Liverpool), Mechanical/Chemical/Materials and Nuclear Engineering (Imperial College), and Mechanical Engineering with Nuclear (Manchester).

At Master's level, the University of Birmingham continues to run "Physics and Technology of Nuclear Reactors". Other Master's courses include the Nuclear Technology Education Consortium (NTEC) Nuclear Masters, coordinated by The University of Manchester, which operates as an alliance of eleven higher learning institutions to deliver broadly based training in modular form. Further nuclear Master's programmes include Nuclear Engineering (Imperial College), Nuclear Law and Policy (Dundee) and Radiation & Environmental Protection (Surrey).

In research, there is a developing academic capability with some internationally recognised centres of excellence. This capability includes 230 full-time equivalent academic staff, over 600 PhD students and more than 130 post-doctoral researchers. The UK Research Councils support more than 25 research consortia addressing all aspects of the nuclear fuel cycle and led by internationally leading researchers. Major new research facilities, including the National Nuclear Laboratory's Central Laboratory, The University of Manchester's Dalton Cumbrian Facility and the Culham Centre for Fusion Energy, are linking to create a National Nuclear User Facility.

The High-Level Skills Sub-Group aims to quantify the scale of the high level skills challenge and develop mitigation strategies to enhance the flow of skills into the sector.

Appendix 2: Skills Alliance Programme Structure



Nuclear Energy Skills Alliance Programme Structure

Tier 1: Leadership and Governance

The Skills Alliance Programme Management Board (PMB), including Communications and Benefits Realisation sub-groups

The PMB has oversight of all Alliance work streams. It monitors progress with the work streams and manages strategic communications with the support of the Benefits Realisation and Communications sub-groups.

It is chaired by the Chief Executive of NSA Nuclear and has senior level representation from all Alliance members.

The PMB is also the ultimate 'owner' of both the Skills Alliance Delivery Plan and the Annual Review.

The PMB meets quarterly, and the sub-groups meet at least quarterly, ahead of the PMB, so as to provide an update to the board.

Tier 2: Cross-Cutting Groups

These groups fall into two categories:

- The funding, skills and apprenticeships provision and higher education groups help to define the skills challenge in their area, assess current provision and, where this is insufficient, develop proposals for mitigating actions.
- The labour market intelligence group is to deliver the Nuclear Workforce Model

The groups are led by a named Alliance member chair, and have representation from other Alliance members/ industry where appropriate. They also have a named project manager to assist with the work stream and reporting on progress.

The groups meet at least quarterly, ahead of the PMB, so that they can provide an update to this meeting.

The chair of each group will need to consider how best to include the group's activities in the Alliance Delivery Plan and Annual Review.

Tier 3: Sector Specific Groups

These groups consist of the five sectors represented through Alliance members; as such they may well be existing groups that discuss nuclear-specific skills issues related to that sector.

They are responsible for ensuring that progress is made with the skills priorities that they lead on in the Alliance Delivery Plan, and also for identifying new skills priorities for their sector. They will feed into the tier 2 cross-cutting groups where appropriate.

Where a skills priority in the delivery plan includes mitigating actions from more than one skills body, the lead body is responsible for engaging with the other skills bodies and updating the delivery plan with progress.

Key Skills Alliance Documents

The Annual Review sets out the Alliance's key achievements over the past year, the challenges for the following year and also high-level plans for meeting these challenges. It is produced by the Communications group (with relevant input from all Alliance members as appropriate) and signed off by the PMB.

The Delivery Plan is a detailed document that sets out the key specific skills challenges facing the civil nuclear programme, and the actions being taken by Alliance members to address these. It is the responsibility of the chair of each Tier 2 and 3 group to ensure the relevant section of the delivery plan is up to date and correct ahead of each PMB. The Delivery Plan is signed off by the PMB for circulation to industry.