cogent | Skills for Science Based Industries

Skills Oracle 2010

The Nuclear Industry

May 2010

Cogent Sector Skills Council
Skills Oracle 2010

Skills Oracle Report for the Nuclear Industry

Prepared by: Julie Plumbley (Research Advisor)

May 2010

Note that in some instances responses apply to a single site rather than as the company as a whole.

1.0 Executive Summary

This report reproduces some of the industry wide findings from the Skills Oracle survey for 2009, and follows the broad format of the individualized reports supplied to participating employers, but without the benchmarked company data.

The headline findings for the Nuclear industry are:

1. Annual average company turnover in employment is approximately 13%.

2. 75% of nuclear employers report professional scientists and engineers vacancies are 'hard to fill'.

3. Annual training budgets average £1,160 per employee. In addition to this companies may incur additional cost such as travel, subsistence, internal training and mentoring, the maintenance cost of training facilities as well as maintaining productivity during training.

4. Nuclear employers were satisfied with the coverage of qualifications across the sector. Satisfaction ratings were highest for 'Apprenticeships', 'Academic' qualifications, 'Flexibility' and 'Accessibility' of provision.

5. Technical training was the most frequently reported training undertaken, when viewed across both internal and external training requirements. Nuclear companies tended to resource externally for specialist training, such as, 'Professional', 'Health, Safety and Environment', 'Technical' and 'Leadership and Management'.

6. 93% of nuclear employers use 'Private Training' providers; 87% use 'FE' providers; and 87% use 'HE' providers.

7. For private training providers, satisfaction levels tended to be extremely high in all areas of; 'Cost', 'Relevance', 'Flexibility', 'Location' and 'Quality' of provision. This reflects the highly tailored provision offer by private training providers.

8. The satisfaction ratings for FE and HE were also very high (ranging between 75% and 95%), with the lower of these ratings referring to cost and location of provision. This suggests that while nuclear employers value such provision, there is scope for FE and HE to innovate in flexible and accessible provision, and that there is a role for the Sector Skills Council in facilitating this.

9. The majority of nuclear employers (90%) place a high level of importance on the supply of Apprentices and Graduates to their workforce (8% of the skills supply recruited were Apprentices; 15% of the skills supply recruited were Graduates).

10. 93% of nuclear employers invest in 'Professional/Higher Level' and 'Technical' training of the existing workforce, with 80% of employers investing in 'Competence Based' training.

11. 85% of nuclear employers report skills gaps and shortages had some, or significant impact.

12. 71% of nuclear employers report that technical skills needs have increased in the 12 months preceding the survey. The same proportion of employers (71%) expected the demand for both technical and management level skills to increase in the 12 months following the survey.

13. Looking ahead, nuclear employers were split in concluding that the economic situation for their businesses would 'improve' (36%), 'remain static' (29%), or 'worsen' (29%) within the year (6% of employers were undecided).

14. Most nuclear employers predicted 'no significant change' or an 'increase' in employment in the short term (2 years ahead).

15. Encouraging young people into the sector, and securing funding, are viewed by nuclear employers as the highest priorities for a Sector Skills Council.

Should you wish to take part in the next Skills Oracle survey 2010 please email Julie Plumbley at: julie.plumbley@cogent-ssc.com

2.0 "Skills Oracle": Primary Labour Market Intelligence (LMI)

During 2009 Cogent implemented 'Skills Oracle', a unique, online project surveying, over time, a significant and consistent sample of employers in each of the Cogent industries. The project collates annual returns from a large employer panel, via a web based questionnaire, to generate primary Labour Market Intelligence (LMI).

This in turn will lead to:

- a **skills 'ftse'** – an index that is a barometer of skills in the sector
- a **skills benchmark** – a collective measure against which employers can assess their skills position in relation to other companies
- a **skills voice** – a report of measures and opinions, supported by a body of evidence from a substantial and consistent expert panel of employers

The survey generates two distinct outputs. Firstly, it provides Cogent with valuable LMI not captured by national data sources, which will provide sector skills data through factsheets and extended reports. Secondly, those completing the survey receive a bespoke benchmarked analysis against returns for their industry. This will then enable companies to:

- identify 'Hot Spot' areas – for example, of excellence or, conversely, under provision
- identify areas of similarity and difference within the industry, and across the Cogent footprint
- identify areas where new and improved business processes can be implemented

3.0 The Nuclear Sector

This section portrays the results for the Nuclear industry generally and the Cogent sector, based on data collected during quarter 4 2009.

A 40% return delivered 69 respondents from companies across the five Cogent sectors[1] (figure 1). Nuclear made up 22% of the sample of employers, with all sectors of Nuclear represented.

3.1 Nuclear Industry and Employment

On a national scale the Nuclear workforce comprises of 53,000 employees, made up of 24,000 Nuclear operating employees; 20,000 Contractor employees; and 9,000 Defence employees.

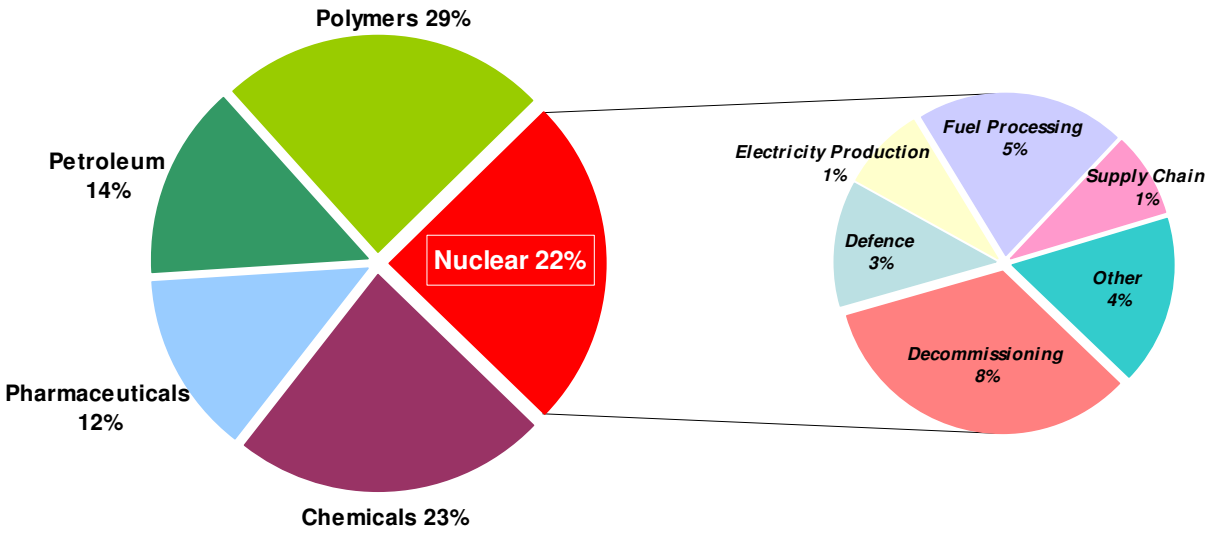
Nuclear companies that responded in the main were large with 250 employees or over, with 80 industrial sites across the UK represented (see figure 2 for the reported number of sites and companies across the Cogent footprint).

These companies employ 26,500 people in the Nuclear sector. By this employee measure, the survey represents of the order of 50% of the Cogent Nuclear UK workforce[2] and 5% of the Cogent UK workforce of 550,000 employees[3].

The Nuclear companies that responded to the survey, on average, employed 1,850 people, with a maximum of 10,000 and a minimum of 100.

[1] Chemicals, Pharmaceuticals, Nuclear, Petroleum and Polymers – not including Oil & Gas or Petroleum Forecourt Retail
[2] Cogent Renaissance Nuclear Skills Series 1: *Power People; The Civil Nuclear Workforce 2009 to 2025* (2009)
[3] Cogent Industry Fact Sheets (2007) – excluding Oil & Gas and Petroleum Forecourt Retail

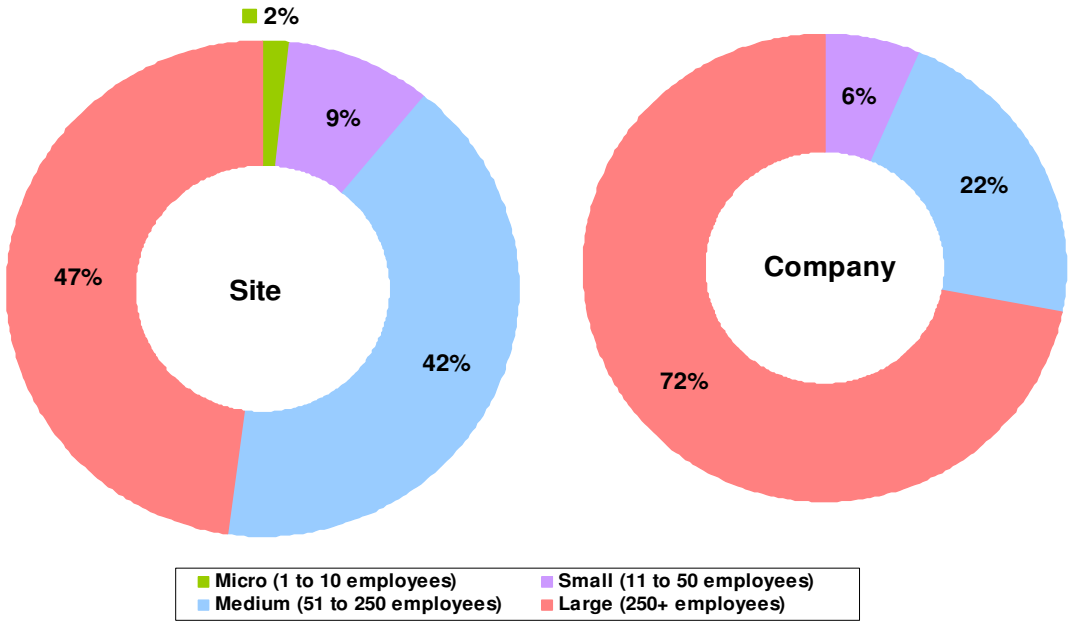
Figure 1: Respondents by Industry



Survey: 40% return rate (69 respondents)

Figure 2: Cogent Respondents by Size of Employer

All Cogent Sectors:



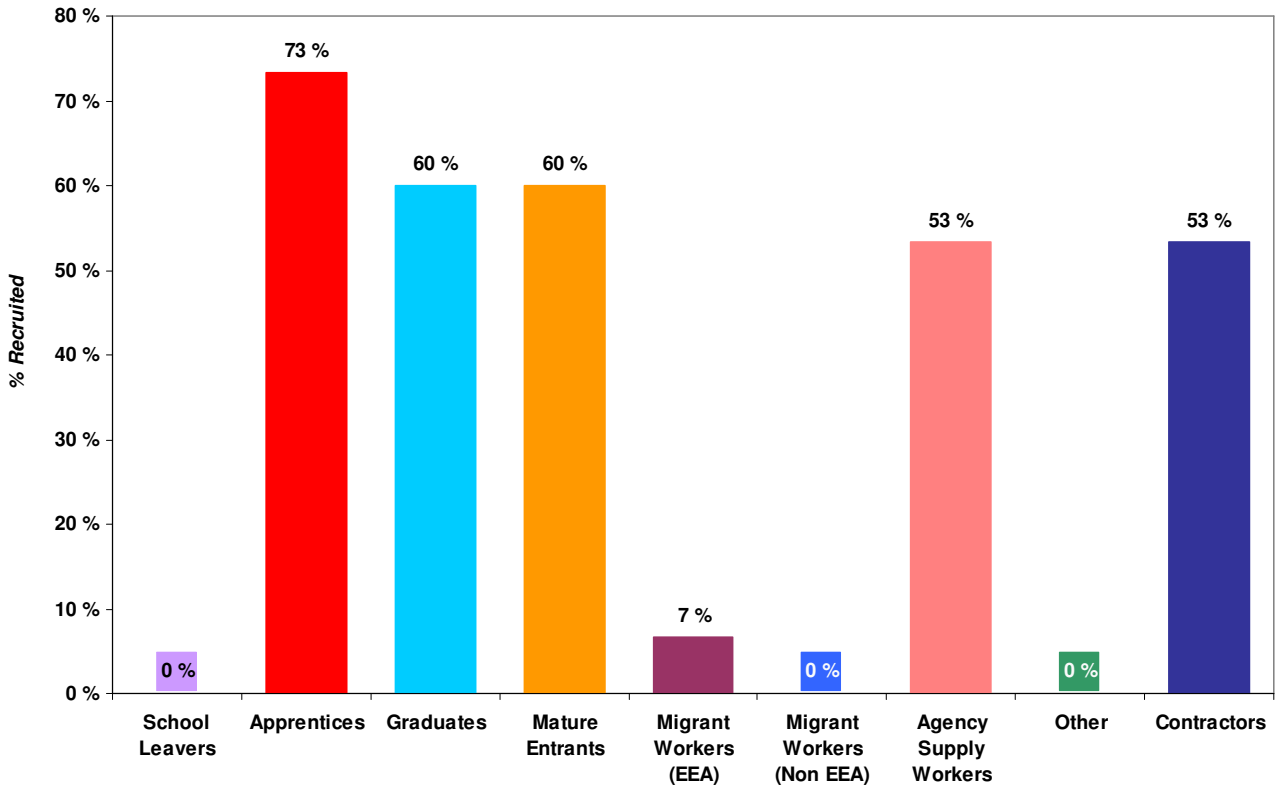
3.2 Recruitment and Staff Turnover

In total for the survey, 2,400 people were recruited. In addition at least 5,400 were employed via contractors. The main recruitment routes into the sector were surveyed according to the categories of: 'Apprentices' (73%), 'Graduates' (60%), 'Mature Entrants' (60%) and 'Agency' (53%). Across the sector, 53% of employers reported dependence on contractors for routine operations (figure 3 displays the proportion recruited in the Nuclear sector). The incidence of recruitment of migrant workers was low (less than 10%).

For the Nuclear sites surveyed, the proportion of those employed directly suggests an annual sector turnover of 13%[4] in employment. Analysis of the entrants and leavers by occupation gives a profile of *in-demand occupations*.

There was a significant net reported increase in: (a) Professional Scientists and Engineering occupations; (b) Craft and Technician occupations; and (c) Operations and Productions occupations. For these occupations, entry levels were more than double departure levels. Commercial and Marketing occupations indicated a stable profile, with no occupations indicating a significant decline (figure 4 displays employment turnover).

Figure 3: Proportion Recruited by the Nuclear Sector



[4] Calculated using the number of recruited and number leaving the Nuclear sector (3,393)

Vacancies for 'Professional Scientists and Engineers' were reported by 75% of Nuclear employers as the most 'hard to fill', followed by 65% 'Craft and Technician' occupations. 'Managers' was the only other occupation that was viewed as 'hard to fill' by a significant fraction of Nuclear employers, with all other occupations across the Nuclear sector being reported, on balance, as not hard to fill (figure 5 displays reported hard to fill vacancies by occupation).

Excluding Contractor recruitment, the inflow of employment indicated that most Nuclear companies recruited Agency Supply Workers (41%) and Mature Entrants (34%). The smallest proportion recruited by Nuclear companies were Migrant Workers (both EEA and Non EEA: 1%).

The outflow of employment was recorded in categories of 'Retirement', 'Redundancies' and 'Other'. Most Nuclear employers listed 'other' as the main departure route for employees (71%), followed by retirements (23%) and redundancies (6%). The large proportion of 'other' leavers may be simply a reflection of the churn across nuclear companies; not necessarily of employees leaving the nuclear industry.

The inflow and outflow of employment are charted below (figure 6).

The Nuclear sector reports low levels of redundancy (6%). This may be a reflection of the level of skills investment to become suitably experienced, or the age profile of the sector, or the anticipation of New Build activity in the next few years.

Figure 4: Employment Turnover

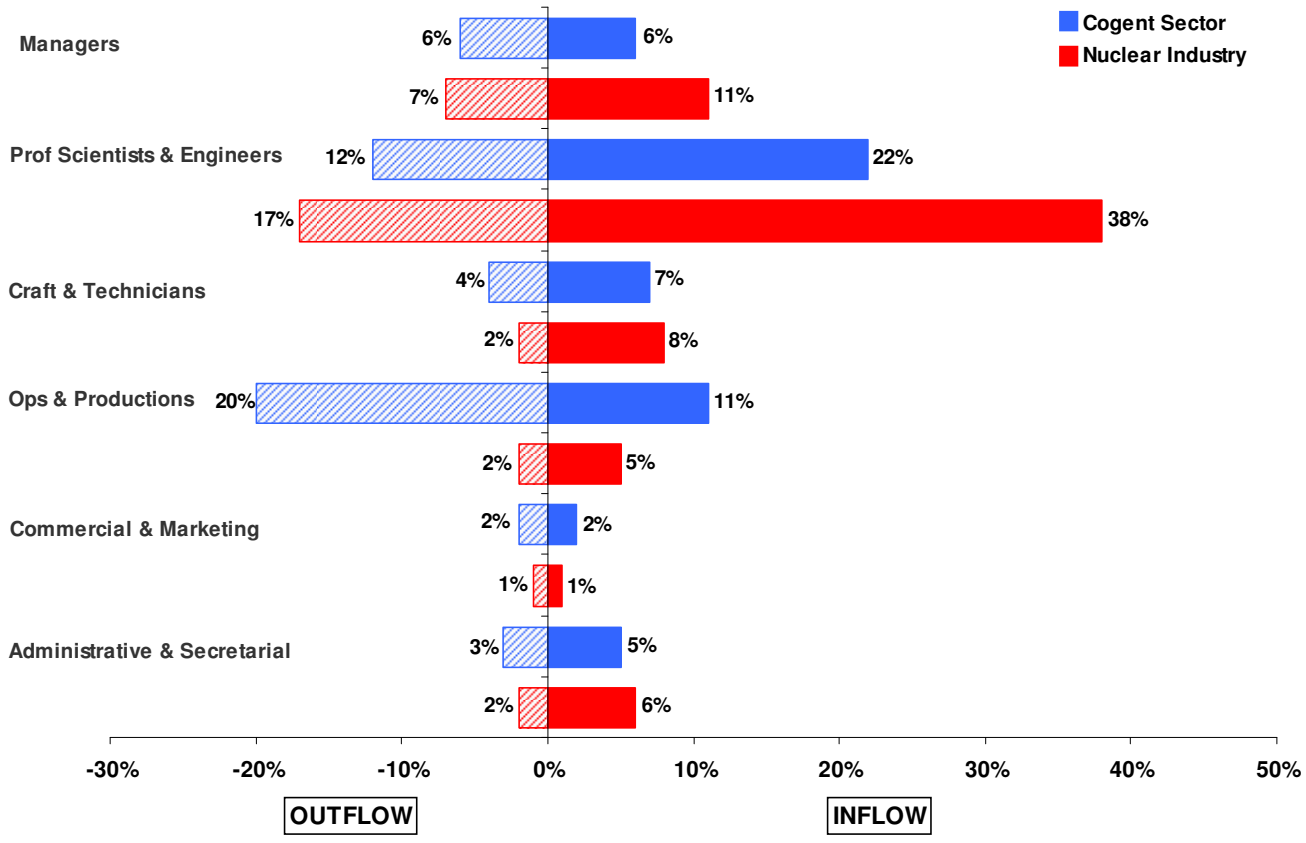


Figure 5: Hard-to-Fill Vacancies

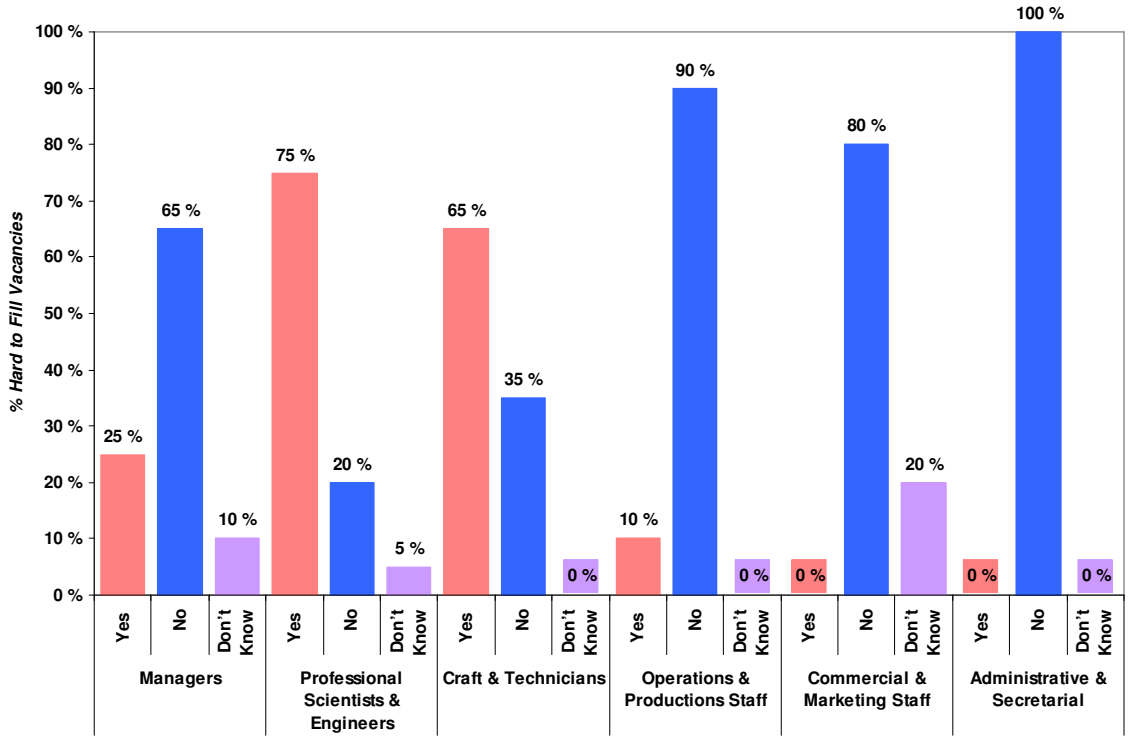
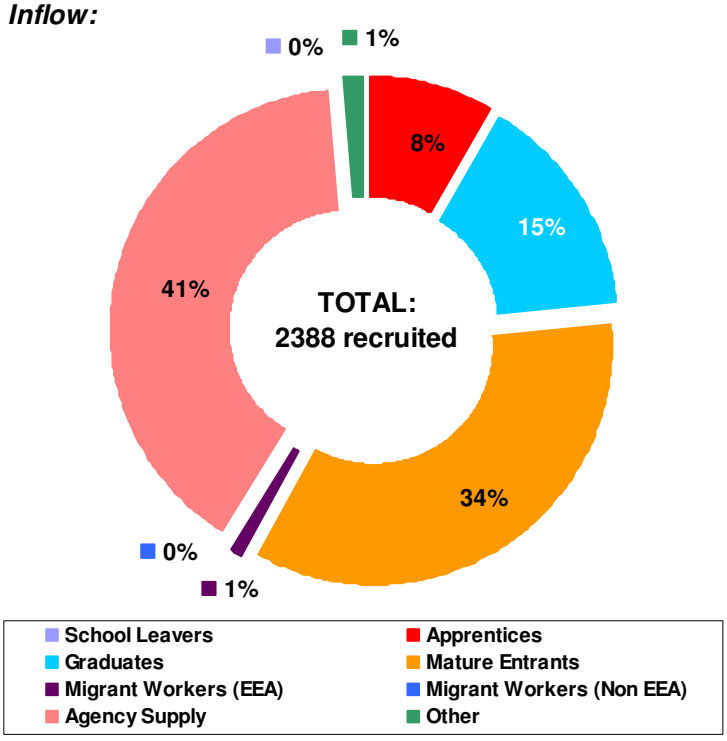
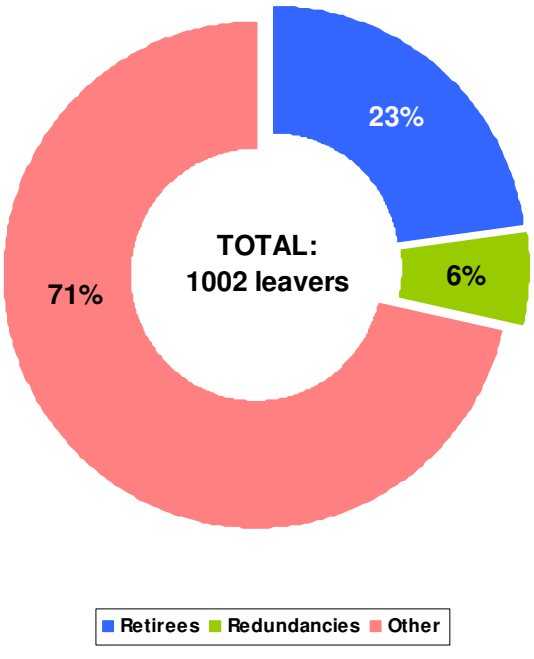


Figure 6: Inflow & Outflow of Employment reported by the Nuclear sector

Inflow:



Outflow:



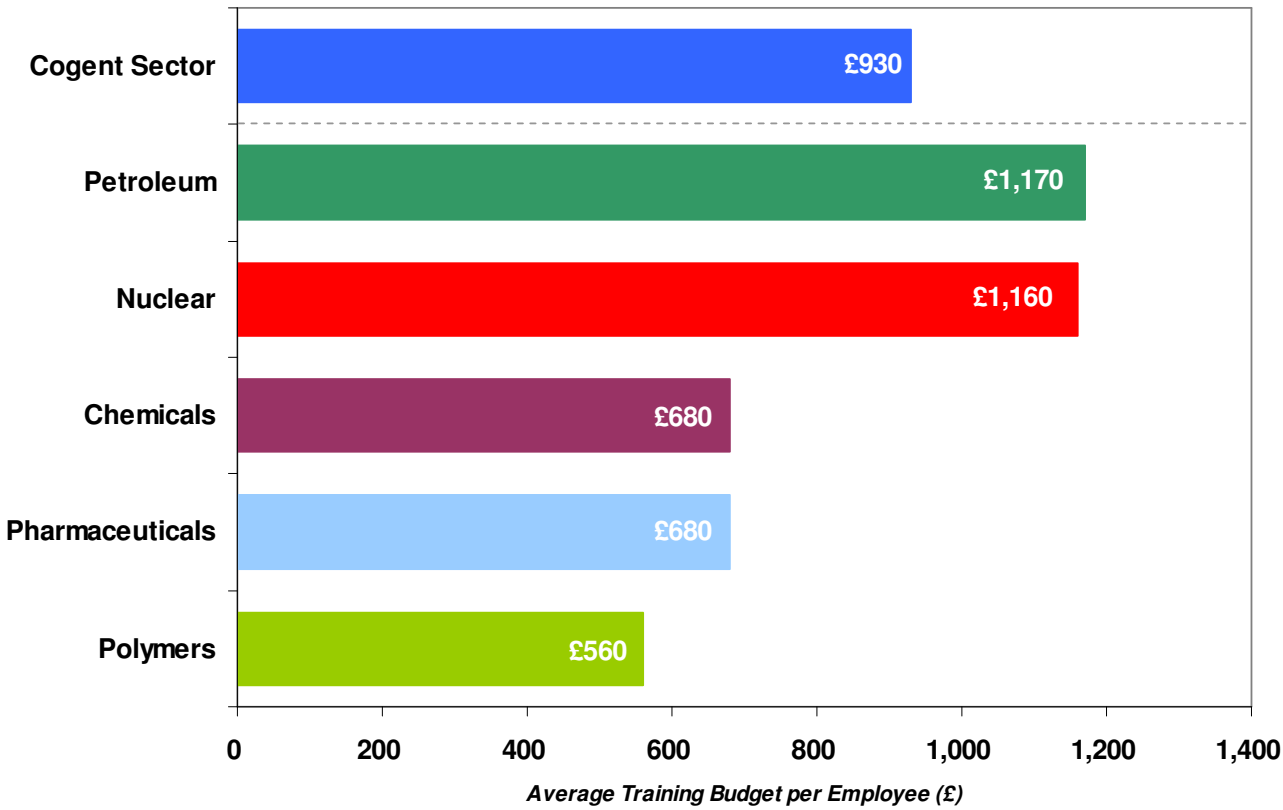
3.3 Training Budgets

An overwhelming majority (93%) of Nuclear companies reported having a training budget. Of those that reported training budgets, the average was just over £872,000, with a maximum reported of £3,000,000. Of the Cogent industries represented in the survey, Nuclear has the highest average reported training budget.

Despite the recession, most Nuclear companies (73%) reported that their budgets would remain the same in the coming year. A smaller proportion (18%) expected training budgets to be cut. For the Nuclear sector, the average annual spend on **training per employee** is £1,160 (figure 7).

The average figures presented are in reality an underestimate of the spend on technical training for three reasons: 1) the figure on spend takes no account of cost of 'down time' for training; 2) the spend relates to all workforce training with an expectation that Technical training would be more costly; and, 3) the figure does not account for investment in internal training and training facilities.

Figure 7: Average Training Budgets (£)



3.4 Qualifications – the Employers View

In general, nuclear employers were satisfied with the coverage of qualifications across the sector. Satisfaction ratings were highest for 'Apprenticeships', 'Academic' qualifications, 'Flexibility' of provision; and 'Accessibility' of provision (respectively 92%, 67%, 58% and 42% majorities over the contrary opinion).

3.5 Training

Technical training was the most frequently reported training undertaken, when viewed across both internal and external training requirements. Nuclear companies tended to resource externally for specialist training needs ('Professional', 87%; 'Health, Safety and Environment', 73%; 'Technical', 73%; and 'Leadership and Management', 73%). (Figure 8). On the other hand, training tended to be internally resourced for 'Technical', 93%; 'Professional', 87%; and 'Training in New Technologies', 87%. (Figure 9).

Figure 8: Reported External Training

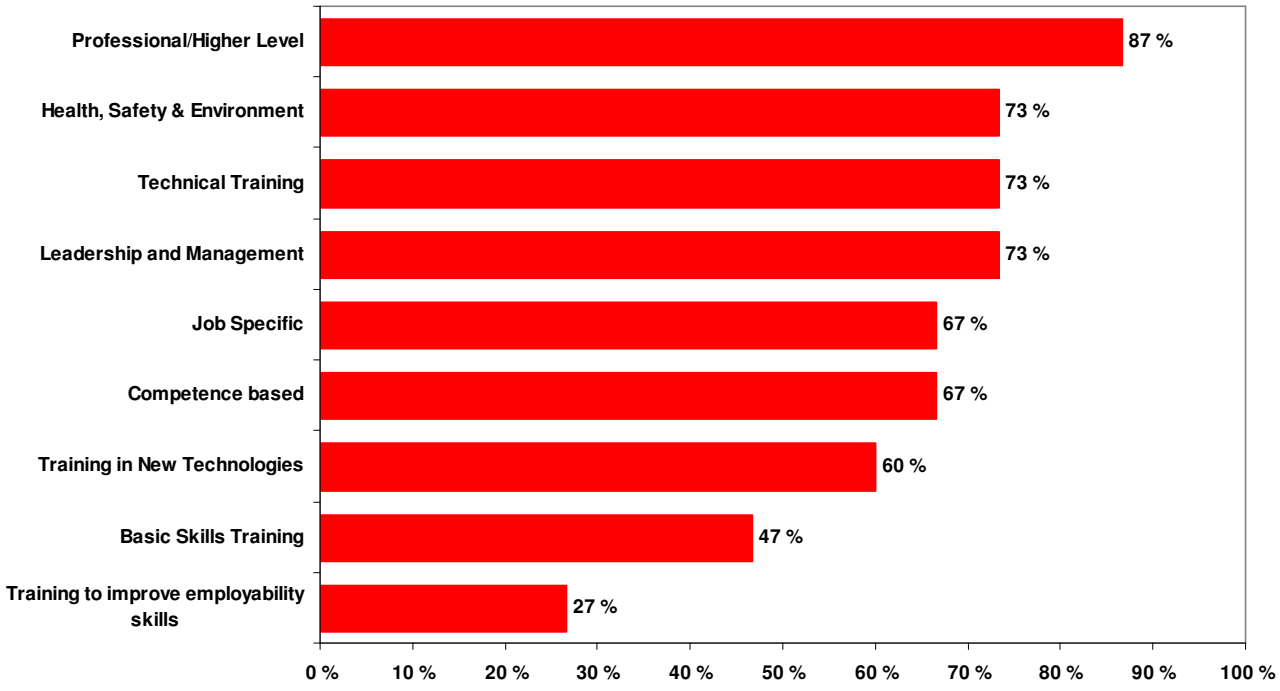
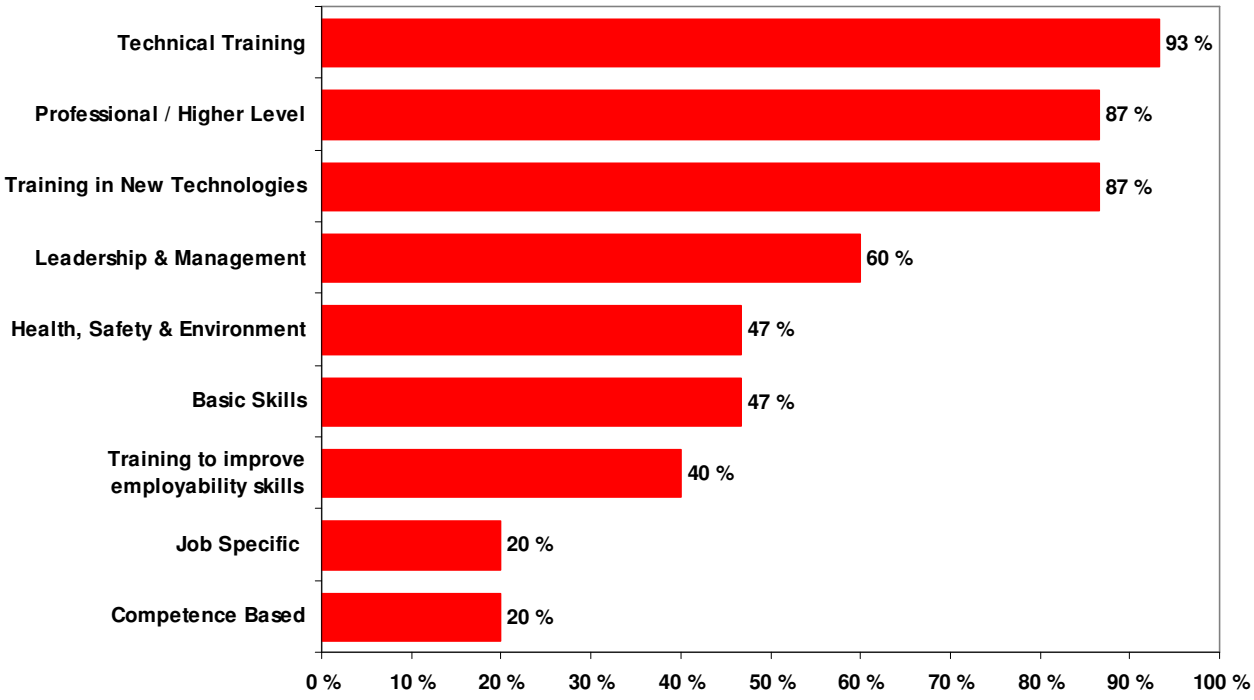


Figure 9: Reported Internal Training



3.6 Providers of Education & Training

For workforce development, nuclear employers made use of a range of private and public providers. The frequency of the use of providers is: private sector (93% of employers), FE sector (87% of employers), HE sector (87% of employers).

Satisfaction ratings with each type of provider was measured for 'Cost', 'Relevance' of provision, 'Flexibility' of provision, 'Location' of provision, and the 'Quality' of those delivering education or training. For private training providers, satisfaction levels tended to be extremely high in all areas, ranging from, the lowest of 79% satisfied (on Cost and also Location) to the highest level of satisfaction of 100% (on Relevance of course content). In the main, this reflects the highly tailored provision that private training providers must produce in order to secure a business offer.

The satisfaction in FE and HE were also high, with all satisfaction levels between 75% and 95%. The lowest of these ratings referred to cost and location of training. This portrays the constraints of qualifications in a training context, as well as geographical coverage. The results suggest that while employers value such provision, there is scope for FE and HE to innovate in flexible and accessible provision, and that there is a role for the Sector Skills Council in facilitating this.

3.7 Education Supply

Nuclear employers expectations of the skills presented by 'School Leavers', 'Apprentices' and 'Graduates' were captured. For School Leavers, nuclear employers were particularly satisfied with their basic skills (for example, ICT, literacy and numeracy) and employability skills (for example, team working, problem solving etc). Most nuclear employers were neither satisfied nor dissatisfied with School Leavers 'Business Awareness' or 'Knowledge' of their chosen job or career.

All nuclear employers that took part in the survey placed a high level of importance on Apprentices (8% of the skills supply recruited were Apprentices, fig.6). Nuclear employers expressed clear levels of satisfaction in many of the categories detailing what may be expected from an Apprentice. In priority order, employers valued 'Basic Skills' followed by 'Employability Skills' and 'Practical Skills'.

All nuclear employers that took part in the survey also placed a high level of importance on Graduates (15% of the skills supply recruited were Graduates, fig.6). . High levels of expectation were placed on 'Employability Skills', 'Core Subject Knowledge' and 'Higher Level ICT, Literacy and Numeracy' skills. 82% of nuclear employers were 'satisfied' or 'very satisfied' with STEM (Science, Technology, Engineering and Mathematics) subject skills, while 18% were neither satisfied nor dissatisfied.

3.8 Workforce Development

The degree of workforce development for the 'Existing Workforce' and the supply of 'School Leavers', 'Apprentices' and 'Graduates' was assessed for the skills categories of 'Basic', 'Competence', 'Technical' and 'Professional'. Professional/Higher Level and Technical training of the existing workforce was reported by a large proportion of nuclear employers (93% respectively), while 80% of nuclear employers invested in competence based training of the workforce. A smaller proportion of nuclear employers (40%) invested in basic skills training of the existing workforce. Technical training was the most prevalent training reported across all categories of employment, with 80% of employers engaging in technical training for Apprentices and Graduates.

3.9 Skills Gaps, Shortages and Future Skills Needs

In the opinion of a significant majority of Nuclear employers, skills gaps and shortages over the past 12 months had either 'some impact' or a 'significant impact' on business performance. The level of impact was reported by 85% of employers both for the existing workforce, and for new recruits (figure 10 displays skills gaps and shortages).

Most Nuclear employers (92%) stated that the 'Basic Skills' needs of their workforce had remained 'constant' relative to the previous 12 months.

Employers also stated that over the past 12 months, most skills needs had 'increased' in the areas of 'Technical' (71%); 'Leadership and Management' (64%); 'Competence-Based Skills' (57%); and 'Professional/Higher Level Skills' (50%). Looking a year ahead, the same areas remained relevant but with an expectancy of a continued increase in the skills development required for 'Leadership and Management' (71%) and 'Competence Based Skills' (71%).

Skills needs are charted below (figure 11 & figure 12).

Figure 10: Skills Gaps and Shortages

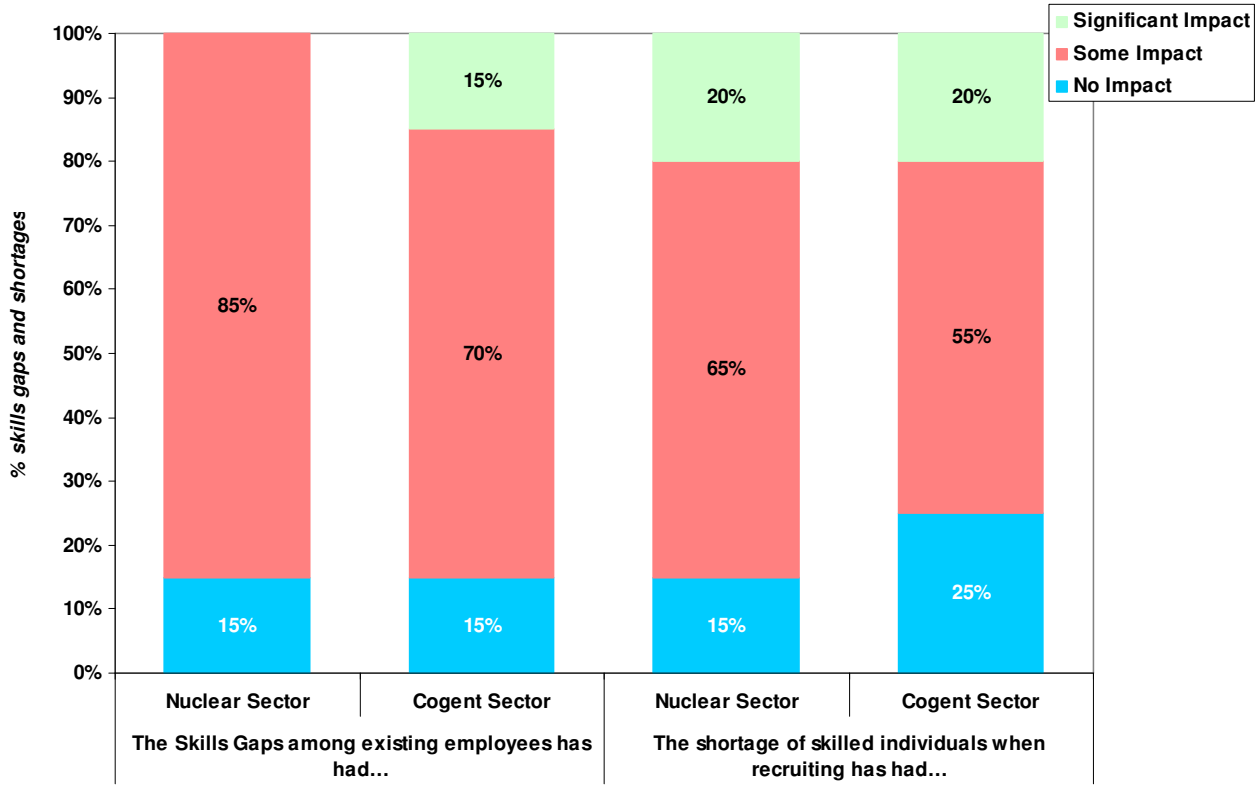


Figure 11: Skills Needs (last 12 months)

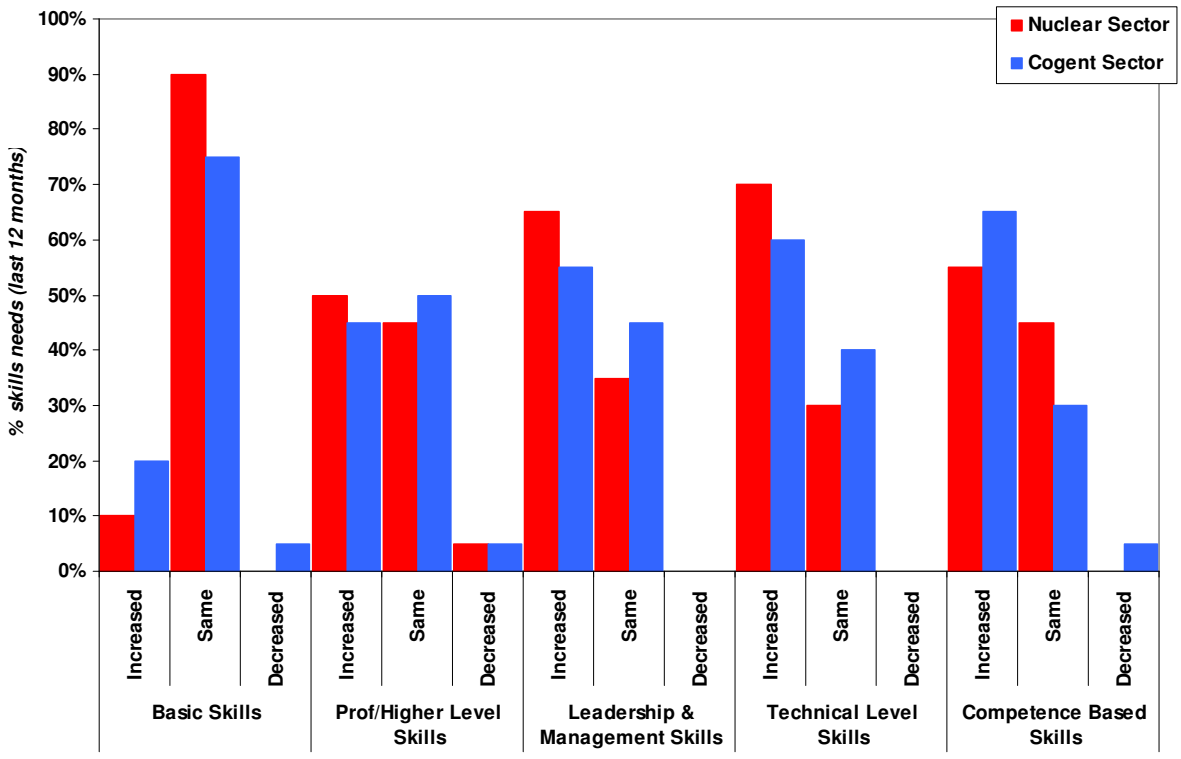
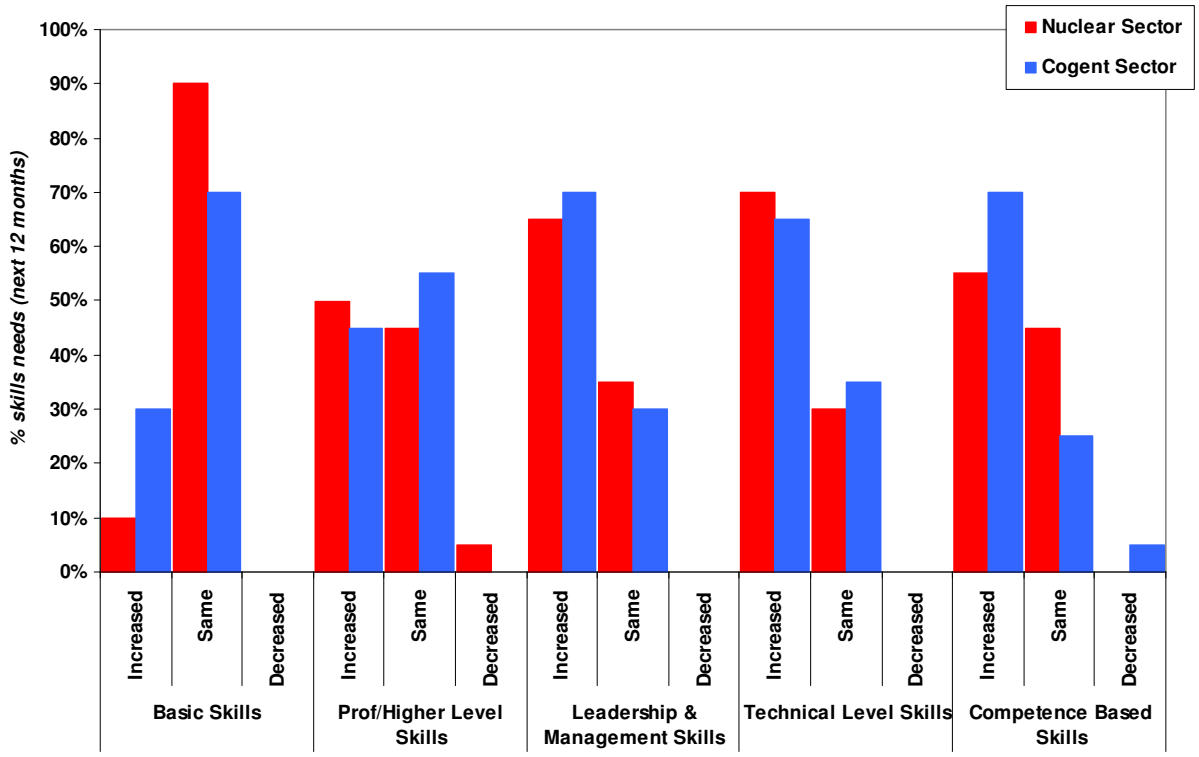


Figure 12: Skills Needs (next 12 months)



4.0 Skills and the Economy

Unsurprisingly, 95% of employers across the Cogent sector reported that the general economy had either 'some impact' or a 'significant impact' on their businesses. However, for the Nuclear sector, where there are considerable and unique internal economic drivers, the impact was rated as less severe.

Looking ahead, nuclear employers were split in concluding that the economic situation for their businesses would 'improve' (36%), 'remain static' (29%), or 'worsen' (29%) within the year (6% of employers were undecided). The nuclear industry differs from other parts of the sector in being shaped more by government policy and planning considerations than the economy at large. It is noted that at the time of this survey and report, government has declared positive policy intentions regarding nuclear new build, but the identification of a wide range of specific construction projects is not yet fully in place.

Most nuclear employers predicted 'no significant change' or an 'increase' in employment in the short term (2 years ahead). Again, recruitment will be significantly affected over this period by the on-going planning and review process.

4.1 What Nuclear Employers want from a Sector Skills Council

From a defined list of SSC activities, Nuclear employers were asked to select those they consider would be most beneficial to their businesses and industry. This gives, in effect, a demand chart of the skills activities of the SSC that employers endorse. Figure 13 shows the relative importance of each activity reported by employers. Attracting young people to the sector and securing funding were top priorities for Nuclear employers.

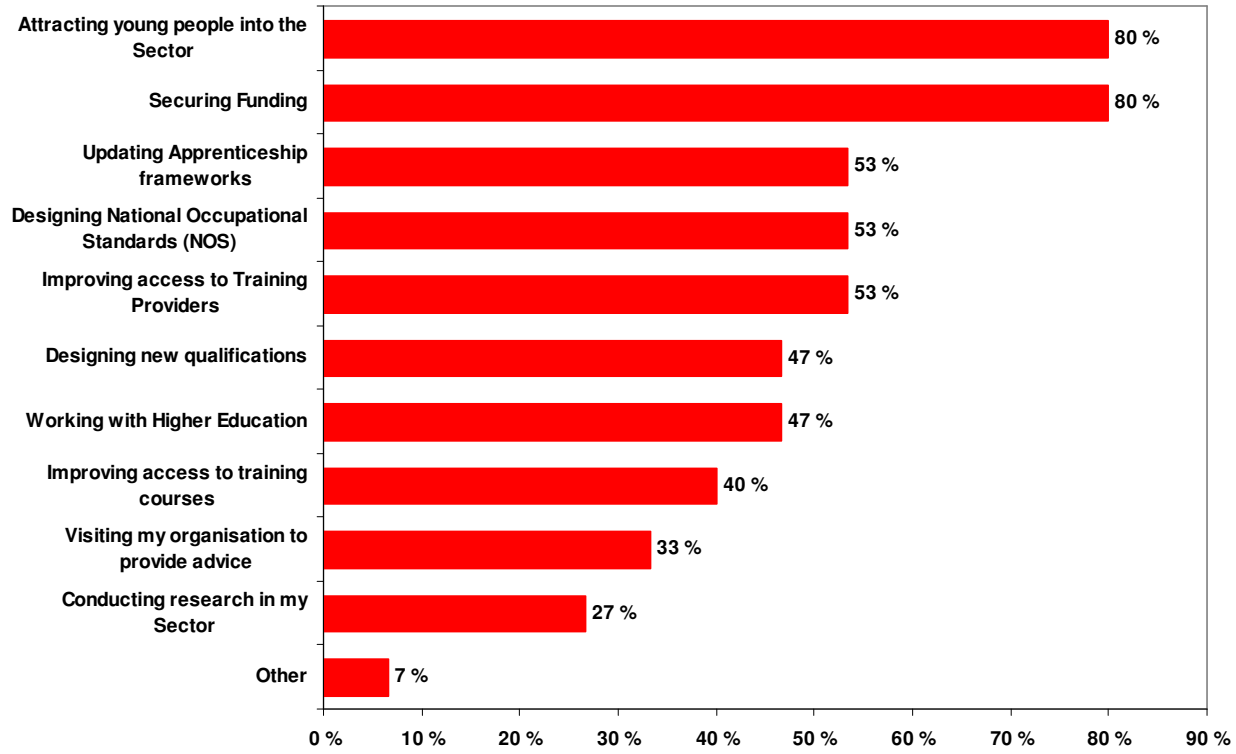
5.0 Concluding Remarks

The data provided in this report is a unique snapshot of the industry from a sizable cross section of employers. The intention is that the first Skills Oracle will provide a datum for the development of trend Labour Market Intelligence on an annual basis.

As noted in the introduction, the role of the project is two fold; providing a benchmark for individual companies, while also generating sector wide data, absent from national sources, but crucial to directing skill interventions over the longer term. Future Skills Oracle for the Nuclear industry will also capture preparation for New Build activity and long term planning for Decommissioning.

Cogent welcomes comment on any aspect of the survey or the report.

Figure 13: What Nuclear Employers want from a Sector Skills Council



Cogent SSC Ltd.,
Unit 5, Mandarin Court,
Centre Park,
Warrington,
Cheshire WA1 1GG

www.cogent-ssc.com

Should you wish to take part in the 2010 Skills Oracle, or would like some information please do not hesitate to contact Julie Plumbley by email at:
Julie.plumbley@cogent-ssc.com

cogent | Skills for Science Based Industries

The National Skills Academy NUCLEAR