

Skills shortages – will nuclear or renewables lose out?



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Will vested interests cause renewables to lose out to nuclear in the competition for skills?

With the announcement of new nuclear power stations for the UK, Stuart Parkinson questions whether there will be enough skilled workers to deliver them, and asks whether the attempt will divert workers from sectors such as renewable energy.

Now that the government has confirmed (in case there was anyone left who doubted it) that it wants new nuclear power stations built in the UK, the race is on to recruit enough engineers and scientists to deliver them. However, there are serious questions as to whether this can be done quickly enough and, perhaps more importantly, whether it will do so at the expense of sectors such as renewable energy.

To start to answer this question we have to take a look at present state of the nuclear industry. Much of the current workforce joined in the 1960s and 70s, when funding and public support were at their peak. Consequently a large proportion of workers are now approaching retirement. Meanwhile, nine nuclear power stations have been shut down in the last 18 years and are being decommissioned – a process that will take many decades. Over the next 11 years seven more plants are scheduled to close¹. So we have shrinking workforce with a rapidly growing burden of clean-up. In 2002, a report from the Department of Trade and Industry (DTI) analysed this problem and calculated that nuclear industry needed to recruit nearly 30,000 new skilled workers over following 15 years to cope with this². It also noted a whole range of 'hot spots' in which skills shortages were already problematic – not least in the Nuclear Installations Inspectorate, the body which oversees the safety of the sector. Upon this shaky foundation the government thinks the UK should attempt to build about six large new nuclear power stations of a type not yet commissioned anywhere in the world. This is, to say the least, a challenging goal.

The nuclear industry has for some time had difficulty attracting enough skilled staff. It was to help deal with this problem that the DTI report mentioned above was commissioned – and this has led to a range of initiatives which have been given further impetus by the announcement on new build. For example, a few universities have started new courses on nuclear engineering, while last October a new multi-million pound research and training facility at Sellafield was announced³.

However, there is a fundamental problem. The number of students taking physical sciences and engineering at university, upon which the sector depends, is falling. Between 1994 and 2001, there was a 26% drop in enrolments for courses in these fields⁴. And although in some disciplines (e.g. physics) the numbers are stabilising, in others (such as chemistry) the fall continues, exacerbated by large numbers of university departmental closures⁵. This is despite a large rise in the total number of undergraduates.

An alternate source of nuclear expertise could be from abroad. With the design of the new plants likely to be either French or American, this seems inevitable. So, will this plug the skills gap? Well, this is likely to be problematic too. At a recent conference, the World Nuclear Association projected a massive expansion in the number of nuclear power stations to be built worldwide. They estimated that 168 new plants could start up by 2020⁶. However, they warned that skills shortages, especially in the West, could mean that this expectation will be dashed.

And then, of course, there is competition from the UK's nuclear weapons facilities, not least if parliament votes for Trident replacement this spring. It is ironic that such a decision might actually compound the problems of the civilian sector. It will certainly be harder for nuclear power facilities to

attract skilled staff if the wider sector is continued to be associated with Weapons of Mass Destruction.

But perhaps the most critical question is whether the nuclear power industry will take skilled staff from more promising sectors such as renewable energy. The expansion of renewable energy in the UK (and globally) depends on skills in many of the areas that the nuclear industry does, especially civil, electrical and mechanical engineering and physics. And the renewables sector is growing fast, not least because it does not suffer from level of public concern about security, safety and waste that nuclear power does. In another DTI report published before the Energy Review, it was projected that employment in this area could expand from the current 8,000 jobs to between 17,000 and 35,000 by 2020⁷. Whether it reaches the upper level will depend on a number of factors, not least the strength of the competition. One could argue that this is healthy and we should leave the market to decide. However, the muscle of the nuclear sector – with its powerful supporters in government, industry, the trade unions and the professional institutions all keen to try to demonstrate that it can deliver – could cause the fledgling renewable energy sector to lose out simply because it lacks enough friends in high places.

Ultimately the decision could lie with the up and coming generation of engineers and scientists. Certainly we need some of them to help with decommissioning the existing power stations as safely as possible. However, with the huge potential of renewable energy set against the concerns about security, safety, waste and economics of new nuclear build, we surely have to make renewables the priority.

Dr Stuart Parkinson is Director of Scientists for Global Responsibility.

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