

The Local Impact Of Sizewell C And D On Employment And The Economy

This report was originally written in May 2012 but has been updated in May 2014.

Key Matters of Concern:

- At present it is not clear if Sizewell C&D or any other nuclear power station will be built in the UK. People are being encouraged to prepare for jobs that may never exist.
- EDF has claimed that '25,000 new jobs' will be created through the new build at Sizewell. This figure is based on temporary jobs of only one years duration, and represents an equivalent of only 580 permanent jobs. Only 20% (112) of these are expected to go to local people. Spread over a nine year construction period this is only the equivalent of 13 jobs per year.
- Once the power station is operating, it is calculated that 900 permanent jobs will be created, leading to an overall figure of 1,480 jobs. This equates to an increase of just over 2% in employment in the Suffolk coastal district council area over a 15 year period.
- 25,000 temporary jobs created also means that 25,000 jobs will be lost. There is strong evidence that such 'boom and bust' affects have a negative affect on the local economy.
- This increase is small compared to the growth that an equivalent investment in renewable and other local industries would bring to the area- investment which would lead to a steady increase in permanent jobs rather than a 'boom and bust' increase in temporary work.
- The short employment period for construction workers at the site means that it would be unsuitable for young people wishing to develop a career in this industry sector. They would have to relocate to find further construction projects.
- Nuclear plants are currently being built at Flamanville and Olkiluoto for EDF these are supposed to be flagship projects, however severe concerns about workplace rights and health and safety have arisen at both sites. Reports suggest that workers have been paid below the minimum wage, and there have been three deaths in five months at Flamanville.

Sizewell Camp

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Introduction

This report highlights some of the important issues around the Impact that new build at Sizewell would have on local employment and the economy. these aspects should be considered by councils, careers advisers, educational establishments, NGOs, unions and local people .

it is judicious for local councils and organisations to be involved in the Sizewell plans in order to ensure that economic benefits for the area are maximised if it goes ahead. However, the resources that local authorities are able to put into such support are limited. It is therefore important that the costs of supporting the Sizewell C development are compared to the costs of supporting other possible developments in order to demonstrate that this use of resources provides best value for the local tax payers.

In the current economic climate it is understandable that a high profile project which promises jobs and investment can appear to be very attractive to a local authority . It is imperative however for the authority to show that they have not been swayed into making imprudent decisions by undue pressure and lobbying by one particular powerful interest. It may be the case that big expensive projects such as the possible build at Sizewell attract a disproportionate amount of support when in fact greater economic impact could be made by supporting smaller businesses and projects.

it is important that educational establishments and career services consider the job creation prospects of the nuclear new build in comparison with job prospects in other areas. To do otherwise would not only be a waste of valuable resources but would also lead to poor advice being given to children and job seekers looking to enhance their career prospects.

Sizewell C & D

The proposed Sizewell C & D reactors are two 1600MW European Pressurised Water reactors. Sizewell is one of eight new sites that have been proposed for new nuclear reactors in the UK. The original proposed construction start and end dates are given below¹:

Project	Construction Start	Construction Finish
Hinkley Point, Somerset	Q3 2011	Q4 2020
Sizewell, Suffolk	Q2 2015	Q3 2026
Wylfa Peninsula, Anglesey	Q1 2015	Q2 2024
Oldbury, Gloucestershire	Q1 2020	Q2 2029
Sellafield, Cumbria	Q3 2016	Q4 2025
Bradwell, Essex	Q1 2017	Q1 2022
Hartlepool, Cleveland	Q2 2017	Q2 2022
Heysham, Lancashire	Q2 2017	Q2 2022

Table 1: New Nuclear Build Construction Start and End Dates

There are several hurdles that need to be overcome before any of these projects start. It is now likely that the final decision on Sizewell C will not be made until the end of the decade²

Generic Design Assessment

The EPR plants currently under construction at Flamanville and Olkiluoto are both horrendously over budget and their completion has been delayed by several years. Analysis showed that a major reason for these delays and cost overruns came about as a result of design changes instigated after the construction began. In order to avoid a similar situation happening in the UK, the Government introduced the Generic Design Assessment, a process in which the prospective reactor designs were thoroughly

1 Nuclear New Build Employment Scenarios, CITB Construction Skills, http://www.cskills.org/sectorskills/researchfromssc/Nuclear_New_Build_Employment_Scenarios.aspx
2 Sizewell: EDF 'not likely to make decision on new plant until the end of the decade', East Anglian Daily Times, October 23, 2013 (http://www.eadt.co.uk/business/sizewell_edf_not_likely_to_make_decision_on_new_plant_until_the_end_of_the_decade_1_2919493)

tested and technical problems were addressed and solved before construction of the plant began. Unfortunately the design issues flagged up by the GDA were not resolved satisfactorily within the time constraints imposed, and so a full Design Acceptance Confirmation has not been issued for either the EPR or the Westinghouse AP1000. However, an interim acceptance has been issued since the regulators believe that the remaining issues can be resolved as the construction progresses- exactly the situation which the generic design assessment was set up to avoid³.

Local Area

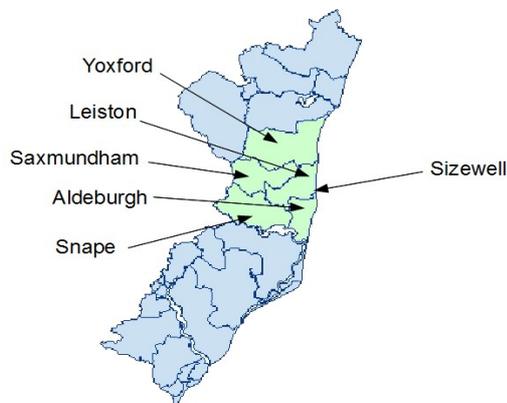


Illustration 1: Suffolk Coastal District Council

The following is a labour market summary for the five wards surrounding the proposed plant and Suffolk Coastal District Council⁴.

	Population	Claimant Count	Economically Active
42UGHM : Leiston	3700	108	2856
42UGHY : Saxmundham	2700	86	1627
42UGGW : Aldeburgh	1600	51	1280
42UGJG : Yoxford	1000	38	756
42UGJA : Snape	1100	46	896
Total of 5 Wards	10100	329	7415
Suffolk Coastal	73800	2900	66400

Table 2: Suffolk Coastal Wards. Population, Claimant and Employment Numbers

Suffolk Coastal -Employment By Industry:

Employee jobs by industry	Employee Jobs
Manufacturing	3,300
Construction	1,600
Services	39,400
Distribution, hotels & restaurants	10,000
Transport & communications	10,500
Finance, IT, other business activities	6,300
Public admin, education & health	10,300
Other services	2300
Tourism-related	4,500

Table 3: Suffolk Coastal. Employment By Sector

3 How The 'Generic Design Assessment' Has Failed, Peter Lux'x Blog (<http://www.plux.co.uk/how-the-generic-design-assessment-has-failed/>)

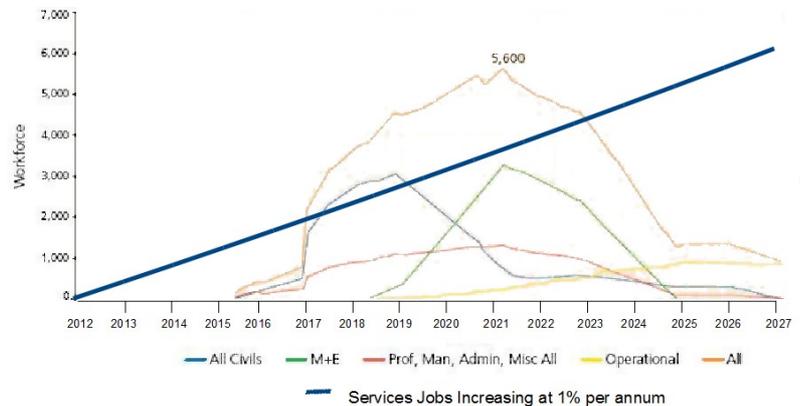
4 Data taken from the nomis – Labour Market Statistics database, ONS, <http://www.nomisweb.co.uk>

Job Creation

EdF expect that the construction of the twin reactors will need 50million man hours and that the average length of the contract would be 1 year. This would result in 25,000 person years worth of work and result in 25,000 temporary jobs of which 20% would be expected to go to local people. 900 permanent jobs would be created after construction when the plant is operational⁵. Although the figures are from an analysis for the building of Hinkley C it is reasonable to expect a similar number of jobs for the equivalent reactors at Sizewell.

Temporary jobs are very different in their economic impacts than permanent jobs, however, it is useful to have some way of comparing them. To do this we assume a working life of 45 years, 48 weeks a year and 40 hours a week which equates to 86,400 person hours. Therefore 50 million person hours would equal approximately 580 permanent jobs. This would be equivalent to only 116 permanent jobs locally since only 20% would go to local people.

The data from the graph on the right is taken from the Hinkley Supply Chain website with additional data for a 1% growth rate in the local service industry⁶ (10,000 jobs in Suffolk Coastal) superimposed. This is not a projection but is designed merely to show that a small steady increase in employment would create substantially more jobs than the 'boom and bust' project at Sizewell C&D.



It should be noted that while it is reasonable to assume that the service jobs could be source from the local labour market the temporary jobs at Sizewell C&D would equal just 20% of the figure given and would therefore peak at 1,400 jobs.

At the height of employment in 2021 of the 5,600 jobs envisaged it is projected that 1,120 would be local (taking the figure of 20% given by EdF). This is more than the claimant count of unemployed people for the 5 wards neighbouring the site and is about 40% of the claimant count of the district. If all the unemployed were considered sufficiently 'job ready' by employers to be given work at Sizewell, it would have a significant impact on the local labour market because it would push up the price of local labour in the area as employers competed for scarce workers. The likely scenario is that higher numbers of transient workers would be brought to the area thereby decreasing the 20% local labour figure even further.

Boom and Bust in Rural Communities

As noted previously EdF claim that new nuclear build at Hinkley or Sizewell will lead to 25,000 temporary jobs.

25,000 temporary jobs created also means 25,000 temporary jobs lost at some point. This leads to a 'boom and bust' in the local economy.

It is difficult to predict what the overall economic affect of the new nuclear build will be on the local economy. However, the very positive spin given to it by EDF, the local council and the local press is unlikely to materialise.

There are a couple of reports⁷⁸ where 'Evidence suggests that major construction projects in rural areas prevent the growth of employment in more stable industries, and increase unemployment over the longer

5 Hinkley Point C, Development Consent Application, Economic Strategy, EDF. 2011 <http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010001/2.%20Post-Submission/Application%20Documents/Other%20Documents/8.16%20Economic%20Strategy/8.16%20Economic%20Strategy.pdf>

6 Skills & Training, Somerset Chamber of Commerce and Industry, <http://www.hinkleysupplychain.co.uk/business-support/skills-training/>

7 French, M "The Impact of a Power Station on Gwynedd", Gwynedd County Council Planning Office, September 1976

8 Hanlon, J "Is Gwynedd a Developing Country?" New Scientist 4th May 1978

term.⁹ Unfortunately I have not been able to get a copy of those reports.

However, while recently reading the New Internationalist issue of Fracking there were some links to papers on the affect of fracking on the local economy. Although not completely comparable they also have the 'boom and bust' affect.

It must be said that the taxpayer will be paying a subsidy to local communities that 'host' nuclear power station¹⁰. (It is interesting to note that similar payments are made by other power sources such as wind farms but these payments are made by the developers not the tax payer – yet another subsidy for nuclear.) However, it is not clear if such funding will be used to mitigate some of the negative affects of a new nuclear build since the local council seems blind to anything negative about nuclear.

One of the affects is that the nuclear build will 'crowding out' of other businesses by raising housing (as has already happened near Hinkley¹¹) and labour costs:

While crowding out particularly affects businesses that require a reliable low cost labour supply (agriculture, tourism, or retirement communities, for example), even higher wage businesses such as manufacturers may be deterred from investing in a resource extraction economy. Higher housing costs, labour competition and social issues make the resource dependent region less attractive to other employers than alternative locations.¹²

The reports also^{14,15,13} also highlight several other issues such as the initial increase in social infrastructure during the boom period can turn into a burden to the remaining smaller population after the bust.

As well as negative affects to the local economy:

A significant body of literature shows that boomtowns can harbor disproportionate increases in social problems such as crime, mental health problems, community dissatisfaction, education shortfalls, and other indicators¹⁴

Nuclear Compared With Other Power Generation

If nuclear new build fails to go ahead then other energy sources would have to be found to meet our energy supply.

Nuclear actually produces fewer jobs per unit energy than any other form of electricity generation¹⁵ Nuclear power creates a mere 75 jobs per TWhr.

For Comparison we have contrasted nuclear with wind because data for wind energy is readily available and the east coast already has a growing wind industry. We would expect that a large range of renewables and technologies such as combined heat and power (CHP) would be used in place of nuclear power. The various merits of these different technologies will not be discussed here since, at present, we are talking about job creation and economic impacts.

Unfortunately we are unable to break down the data to a regional level so national projections are used.

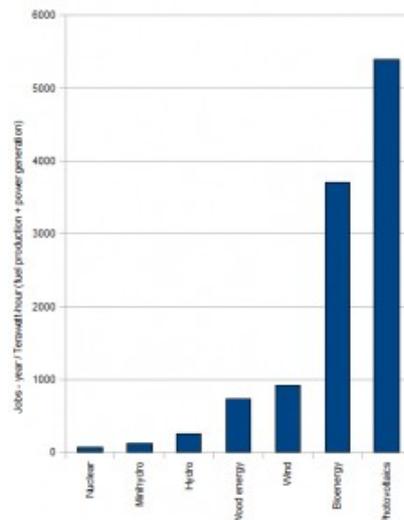


Illustration 3: Employment in Energy Sector per TWhr

9 Briefing February 2011 Nuclear Power and Jobs, No2NuclearPower, (<http://www.no2nuclearpower.org.uk/reports/JobsBriefing.pdf>)

10 Communities to benefit from hosting nuclear power stations, DECC Pres

(<https://www.gov.uk/government/news/communities-to-benefit-from-hosting-nuclear-power-stations>)

11 Council braced for Hinkley C impact on Sedgemoor housing demand, This is the West Country (http://www.thisisthewestcountry.co.uk/news/somerset_news/10833372.Council_braced_for_Hinkley_C_impact_on_Sedgemoor_housing_demand/)

12 How shale gas extraction affects drilling localities: Lessons for regional and city policy makers, Journal of Town & City Management, 2012

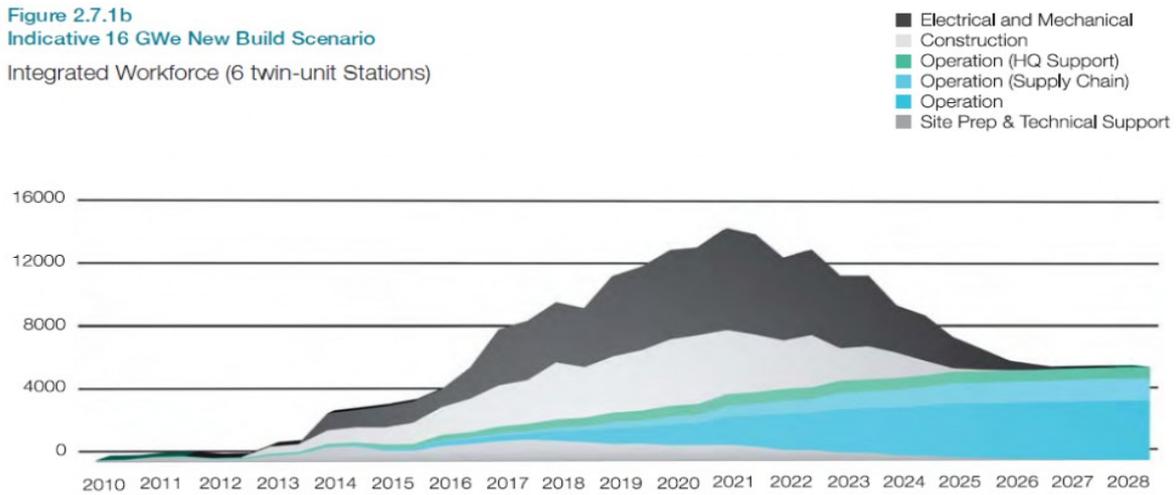
(http://www.greenchoices.cornell.edu/downloads/development/shale/Economic_Effects_on_Drilling_Localities.pdf)

13 Booms and Busts, West Virginia Center on Budget and Policy, 2011,

(<http://www.wvpolicy.org/downloads/BoomsBusts072111.pdf>)

14 Energy Boomtowns & Natural Gas: Implications for Marcellus Shale Local Governments & Rural Communities, NERCRD Rural Development Paper No. 43 January 2009 (<http://energy.wilkes.edu/PDFFiles/Issues/Energy%20Boomtowns%20and%20Natural%20Gas.pdf>)

The graph below shows the expected jobs created by 16GWe of new build nuclear¹⁶



The employment peak is in about 2021 at 14,000 jobs with just under 6,000 permanent jobs being created at the end of the build.

Projections for employment in the wind energy show a very different profile with a gradual increase in employment:¹⁷

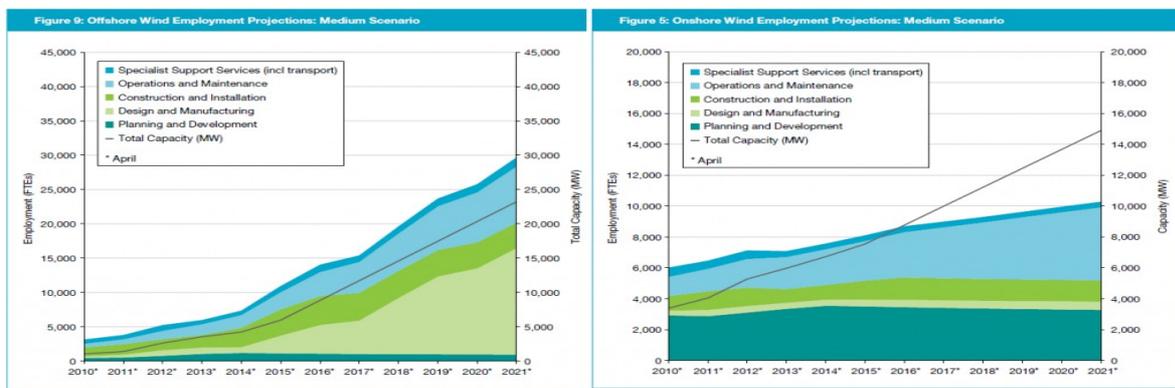


Illustration 4: Projected Employment in Wind Power Generation Sector

Illustration 5: Employment in 16GW New Nuclear Build

This in part reflects the large number of smaller units required for wind generation. As can be seen offshore wind alone could produce 23,000MWe of installed capacity and nearly 30,000 jobs by 2021.

Quality of Jobs?

There are important questions arising about the quality of construction jobs at nuclear sites. There are currently two reactors of the type proposed for Hinkley and Sizewell being built in Europe. One is at Flamanville in France and the other at Olkiluoto in Finland.

Both have attracted severe criticism for carelessness over workplace rights and health and safety matters.

Olkiluoto

Approximately 4000 people have worked on the Olkiluoto site. Reports suggest that they have been recruited from over 60 countries with more than 1,200 coming from Poland.

Olkiluoto has proved to be a severe challenge to the once strong Finnish trade union movement with contractors successfully contesting the right of Finnish unions to regulate the site, placing labour

¹⁵ *The Case for Renewable Energies*, José Goldemberg Instituto de Electronica e Energia Universidade de São Paulo (teenet.tei.or.th/Knowledge/Paper/case_for_renewable.pdf)

¹⁶ Next Generation – Skills for New Build Nuclear, The Nuclear Energy Skills Alliance (<http://www.cogent-ssc.com/research/Publications/Renaissance2.pdf>)

¹⁷ Working for a Green Britain, RenewableUK, (http://www.bwea.com/pdf/publications/Working_for_Green_Britain_V2.pdf)

relations in a deregulated space between national systems¹⁸

In 2011 Polish workers began to organise to challenge the working conditions. they were later supported by the Finnish Electrical Workers' Union and ultimately won back over £1million euros in compensation for unpaid wages, holiday pay and expenses¹⁹. However, in November 2011 a large number of polish electricians were sacked including those who had earlier sued their employers.

"This is a brutal attack against the right to organise, guaranteed under Finnish legislation, and against the core activity of the trade union movement", said Hannu Luukkonen, who is responsible for cases at the Olkiluoto construction site at the Finnish Electrical Workers' Union²⁰. Trade unionists threatened to blockade the site²¹ and the workers were reinstated but were given work at other sites rather than Olkiluoto²².

"Olkiluoto has been a complete disappointment for us. There have been fewer than 100 Finnish builders there. It is the view of our experts that huge amounts of cheap labour have been brought here from abroad to work inefficiently"

Kyösti Suokas, co-chairman of the Finnish Construction Union²³.

Flamanville

In July 2011 a delegation of Socialist and Democrat MEPs led by the chair of the European Parliament's employment committee, French deputy Pervenche Berès described the working conditions at Flamanville as "a case of modern-day slavery,"²⁴. Taxes and social security contributions were deducted from their pay slips but were never paid. As soon as these problems came to light, the workers were sent home overnight, without any other action being taken.

On 24 June 2011, the newspaper L'Humanité published a report of 6 June 2011 by the French Nuclear Safety Authority (ASN) recording serious violations of labour law on this site. For 2010, the ASN reported 112 accidents at work, of which 38 were serious. This included three deaths in five months²⁵.

This is not surprising since according to French union CGT the vast majority of Romanian workers employed by Bouygues Construction, work between 10 and 15 hours per day. "Sometimes they start at 6 am and end at 22 o'clock at night. It's unacceptable," Jacques Tord of CGT told French newspaper France Soir²⁶.

As in *Olkiluoto* it is claimed that there is a long history of breach of basic trade union rights at the site including dismissing workers for striking over conditions or safety issues²⁷.

18 National unions and transnational workers: the case of Olkiluoto 3, Finland, *Nathan Lillie, University of Groningen*
http://rug.academia.edu/NathanLillie/Papers/1448682/National_unions_and_transnational_workers_the_case_of_Olkiluoto_3_Finland

19 Electrical workers' union puts in court claims for millions of euros in respect of 115 Polish electricians, SAK (Central Organisation of Finnish Trade Unions), September 2011 <http://www.sak.fi/english/whatsnew.jsp?location1=1&lang=en&ao=news&sl2=2&id=35012>

20 Polish company sacks dozens of organized electricians in Finland, SAK (Central Organisation of Finnish Trade Unions), November 2011 <http://www.sak.fi/english/whatsnew.jsp?id=35132&location1=1&sl2=2&ao=news&lang=en>

21 Olkiluoto kolmonen saartoon (Number three, the Olkiluoto blockade), *Verkkolehti*, 23 November 2011
<http://www.kansanuutiset.fi/uutiset/kotimaa/2689971/olkiluoto-kolmonen-saartoon>

22 Polish Elektrobudowa re-employs the electricians it sacked arbitrarily, SAK (Central Organisation of Finnish Trade Unions), June 2011 <http://www.sak.fi/english/whatsnew.jsp?id=35174&location1=1&sl2=2&ao=news&lang=en>

23 Concrete cover ups and others at nuclear construction site, *Helsingin Sanomat*, February 2010
<http://www.hs.fi/english/article/Concrete+coverups+and+others+at+nuclear+construction+site/1135252583331>

24 Flamanville: a case of modern-day slavery, *Group of the Progressive Alliance of Socialists & Democrats in the European Parliament*
<http://www.socialistsanddemocrats.eu/gpes/public/detail.htm;jsessionid=E8B202AEDADFBF801960FFACC8F48347?id=135913§ion=NER&category=NEWS>

25 Infringement of labour law and social legislation at the Flamanville EPR site, *European Parliamentary Questions*
<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+WQ+E-2011-007523+0+DOC+XML+V0//EN>

26 Flamanville – One in three workers is ... from Eastern Europe!, *France Soir*, November 2011
<http://www.francesoir.fr/actualite/economie/chantier-flamanville-un-travailleur-sur-trois-vient...-des-pays-l'est-63542.html>

27 Flamanville EPR: The EDF CGT warning on the importance of social control, *l'Humanite*, June 2011

Yannick Rousselet from Greenpeace France said 'There are 18 different nationalities working there and most of the work is done by sub-contractors. This means there is no job security and the pay is poor. Workers get shipped in and shipped out and have none of the benefits of permanent work.'

He added: 'People have been flooding into the area because they have heard that work is available but then they find there is nothing. This means that local unemployment has actually increased since construction at Flamanville began.'²⁸

Career Development

The short term nature of the employment in construction (average 1 year) at Sizewell C&D may mean that it is unsuitable for young people to develop their careers at the site. Training in the industry is done via apprenticeships which normally take 2-3 years. Although the training is theoretically transferable from one employer to another it may be difficult for apprentices to find suitable employment in the area to continue their career development when the short term work at Sizewell ceases. The low minimum wage (£2.60 per hour) and the caps on housing benefit for young people act as a severe hindrance to them moving away from home to continue their studies.

Therefore it is imperative that if training is offered on site, the young person is guaranteed a Placement that matches the duration of their training.

Experienced workers may encounter difficulties when seeking work at the site because Larger construction sites often require the applicant to hold a CSCS card before being considered for employment. Many skilled workers do not have this qualification. It is unclear whether there are any proposals to provide workers with this qualification prior to or at the beginning of employment on site.

Growth and Export Potential

The decision of Germany to replace its nuclear electricity generation with renewables is not just the result of Fukushima. There are strong economic and commercial reasons for the switch.

As can be seen from the graph on the right new installations of wind generating capacity alone far outstrips that of nuclear.

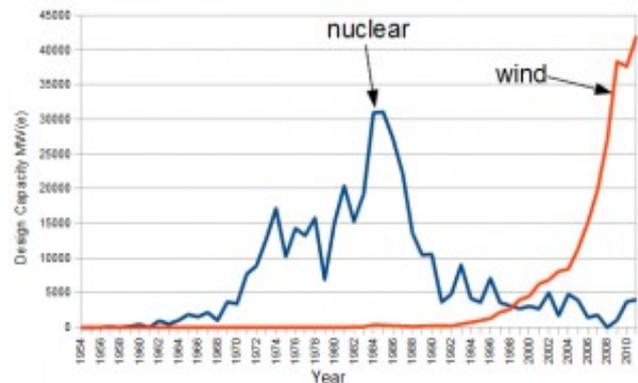
Not only is demand for renewable energy sources such as wind and solar greater than nuclear but the demand is much more consistent. Nuclear tends to rely on large investment which has always come from large national programmes using taxpayers money.

Such investments tend to be intermittent varying with changes in policy or political leadership.

The larger, more dependable market for renewables has resulted in hundreds of thousands of jobs²⁹ being created in Germany. Worldwide the renewable industry now attracts over \$211 billion in investment every year³⁰.

In contrast the UK nuclear power industry has achieved very little in over 50 years of development. The UK designed Magnox and AGR reactors have now been abandoned in favour of the US designed pressurised water reactors.

The nuclear waste handling and reprocessing part of the industry has fared even worse with the THORP reprocessing plant closing early after several safety failures and having made losses of over £1bn. Decommissioning of the plant waste disposal is expected to cost the taxpayer £1.5bn per year for many years³¹



http://www.humanite.fr/14_06_2011-epr-de-flamanville-la-cgt-alerte-edf-sur-limportance-dun-contrôle-social-474213

28 Workers at Hinkley C nuclear power plant in for a raw deal, *Stop Hinkley* <http://stopnewnuclear.org.uk/node/174>

29 German renewable industry booming, UPI, http://www.upi.com/Business_News/Energy-Resources/2010/03/24/German-renewable-industry-booming/UPI-15431269467089/

30 Renewables 2011, REN21, http://www.ren21.net/Portals/97/documents/GSR/GSR2011_Master18.pdf

31 Sellafield: the most hazardous place in Europe, *The Observer*, 19 April 2009

<http://www.guardian.co.uk/environment/2009/apr/19/sellafield-nuclear-plant-cumbria-hazards>