

**This House believes that the highest priority for National Energy Policy should be renewable energy sources rather than nuclear or fossil fuels**

Over the next decade, the UK will be facing a critical future with respect to Energy as it tries to tackle the sometimes conflicting issues of Climate Change, Energy Security and Affordability.

While energy conservation will always be a key factor in any rational Energy Policy, Governments of all political persuasions, have over the last two decades failed to grasp the seriousness of the situation now facing the UK. All our nuclear stations other than Sizewell will be closed by 2023, and by 2015 nearly 40% of our fossil fuel will have closed with 5 GW closing in the next 6 months.

As though this were not a big enough challenge, having previously been a net exporter of gas, the UK is now a net importer from countries like Norway, Russia, and the Middle East with the level of imports at 50% and predicted to rise to over 70% by 2020. With countries like China and Japan following Fukushima, demanding ever more gas, the international price of gas will rise further. Since we started importing gas, wholesale prices have risen by well over 100% reflecting a 150% rise in electricity prices. This volatility of gas price will impact on the UK for the rest of the decade.

Even if we are prepared to pay more for our gas, can we be sure of supply at times when we most needed in winter. Thus on 6<sup>th</sup> February 2012 Russia issued a warning that it would have to restrict exports to Europe because of rising domestic demand.

Tackling the three key issues facing the UK can be achieved through a policy of promoting low carbon energy using renewable energy resources, nuclear power and carbon capture and sequestration for fossil fuel generation. There are two priorities facing the UK with respect to energy: firstly to provide for the necessary shortfall in capacity in the run up to 2020, and secondly to provide for a balance energy mix of low carbon technologies strategies of Renewables, Nuclear and Fossil fuels with CCS from 2020 onwards

However, the motion before us tonight is: **The highest priority for National Energy Policy should be renewable energy sources rather than nuclear or fossil fuels** and I shall show this now needs to be our first priority if we to have the opportunity to tack the later priority during the 2020s. .

Energy conservation continues to be an important aspect of energy policy, but improving insulation standards will have limited impact on electricity demand as only a small proportion of building are heated electrically. In addition there is a Paradox that effective methods to reduce primary energy demand overall will lead to increased electricity consumption, as widespread deployment of heat pumps would

increase electricity consumption. Similarly electricity consumption will rise with any move towards electric vehicles.

### **Let us look at the options:**

**Nuclear** – This has long lead times as can be seen from the only two reactors under construction in Europe at Olkiluoto in Finland and Flammanville in France both of which have seen their construction time and costs double and far from completion in the five years projected will take at least 9-10 years.

So the prognosis for nuclear is that it is **TOO late** to help address the critical situation this decade. Even if construction were to start tomorrow, commissioning would not be until after 2020 well after the critical shortfall in capacity. New build nuclear should have been started at least five years ago.

Some argue that nuclear is the cheapest low carbon option, but the Climate Change Committee in May last year demonstrated, after reviewing numerous different cost estimates by different researchers which demonstrated a range in prices for both nuclear and wind, found that the mean prices for new build generation for both nuclear and wind when compared using levelised life time costs were very comparable.

Those of you who watched the Select Committee Meeting last Tuesday will remember how evasive Vincent de Rivaz, Chief Exec of EdF, was over future costs of nuclear. When asked to comment on the true price for nuclear generation suggested by some of around £140 /MWh he dismissed this as being too high, but was then evasive over a figure of £100/MWh suggesting that this is a possible price considered by EdF for financial return. Such a price is noticeably higher than current but falling onshore wind energy costs and comparable with future offshore costs.

**Coal-** Completion of modern coal-fired super-critical stations fitted with carbon capture and sequestration other than on a demonstration scale is unlikely before 2020. Even the most optimistic long term scenarios as shown by UKERC will not compensate for the loss in capacity until after 2030.

**Gas:** New generation is relatively quick to build and could bridge the gap from 2016/17 onwards, but this will increase the UKs vulnerability to price rises and also the security of supply.

**Renewables:** Renewable generation is a mature technology and construction times are short. It is true that more research is needed for both wave and tidal generation and for these it will be after 2020 before these promising technologies, for which the UK is a world leader, will be able to provide a significant contribution to UK electricity supply.

However, in the last 30 months, completed wind capacity has reached over 3200 MW or the equivalent capacity of one nuclear power station every 15 months. At the present time there are also a further 4000 MW under physical construction which will all be completed in the next 2 – 3 years. The UK is the world leader in offshore wind capability with more capacity than all other countries combined.

Similarly solar PV installations reached over 1000 MW in the 12 months or the equivalent capacity of one nuclear station every 18 months. This technology has been installed on 240 000 homes in the last 12 months alone demonstrating that it too is a mature technology that can also deliver capacity in a predictable timescale.

With very lengthy construction delays the reverse is true for nuclear as shown in Finland and France. At the present installation rate for wind and solar the UK will have installed the equivalent capacity of a further 10 nuclear stations by 2020. With nuclear the most optimistic strategy would have one station. Furthermore wind energy is already generating twice as much electricity as Sizewell each year.

### **There are many Myths against prioritising renewables**

#### ***We need base load reliable power -nuclear provide this – wind cannot***

This is a false assertion: nuclear reactors cannot load follow to reflect changing demand. For this to be true we would have to use less lighting at night and more lighting during the day time. Nuclear power is inflexible and is as much a problem as any unpredictability in renewable generation. Thus a trip of Sizewell B on 28<sup>th</sup> May 2008 caused a sudden loss of over 1100MW capacity causing power cuts affecting half a million people. Later an unscheduled outage starting on 17<sup>th</sup> March 2010 lasted over 6 months far longer than any reduction in wind output during a high pressure period. There have been similar issues this year, albeit for not such long periods.

Wind power is no longer unpredictable as it used to be. Predictions of wind output are now made 48hr and 24 hr in advance of real time, and publically available on the internet allowing ready comparison between these predictions with actual output to be made. The error in prediction is now low and comparable with the uncertainty in the prediction of actual demand and much less than an event such as Sizewell B tripping.

### **Costs of energy generation in the future.**

Renewable energy has received support under the ROC scheme and more recently with FITs and some claim this is the cause in the rise of domestic bills. This could not be further from the truth as very much less than 10% of the increase in bills can be attributed to renewable energy support, 90% comes from volatility of fossil fuel prices. Then again the UKs nuclear stations nearly £1billion emergency bail out in

2002. Fossil Fuel generation may not have required subsidies to date, but there have been hidden costs to society through extra pollution and carbon emissions.

Whole sale prices of electricity dominated by fossil fuel generation have risen by 150% in the last 8 years, and if that rate continues, by the end of the decade the price will be £80 /MWh or above as confirmed by the Climate Change Committee.

Recently, prices of onshore wind have recently fallen from the previously typical price of £90-95 per MWh (9 – 9.5p/kWh) as show by the 75% reduction in the mark up value of ROCs announced last month.

Next April there will be a 10% reduction in the ROC value of onshore wind and with further efficiencies the price by 2020 is well on track to achieve or better the target value of £80/MWh. Further more the Government is committed to bringing in the Electricity Market Reform in 2017, and this will continue to ensure that support is continually reduced where it is not needed.

Support for solar electricity has already been cut by 65% this year following cost reductions and there are now further reductions in the pipeline. Despite this cut in Feed in Tariffs installation rates for solar are now 20% higher than they were before the sudden announcement of cuts in December last year.

Costs of nuclear are still uncertain, particularly noting the evasive answers of Vincent de Rivaz last Tuesday when questioned over the £100 /MWh cost and indeed he implied that nuclear would be comparable with the more expensive offshore wind energy.

## **Concluding Remarks**

Nuclear costs are uncertain and the evidence is not encouraging. Most importantly, it cannot provide any new generation capacity by 2020, neither can coal. Gas could do so but energy security would be vulnerable to volatile prices and potential external political events. Renewable Energy costs are coming down and its output is now predictable and more resilient than sudden trips of large fossil or nuclear stations.

Renewable energy can be implemented at the rate required and this will help the UK preserve its gas supplies until in the longer term nuclear and coal with CCS can be commissioned. It will also help the UK simultaneously tackle the three issues of Climate Change, Energy Security and Affordability. The motion: **“The first priority for National Energy Policy should be renewable energy sources rather than nuclear or fossil fuel”** is indeed correct and should be supported. Setting this as our priority will then allow us to tackle all the other related issues of our second priority ensuring a balanced mix of Renewables, Nuclear and fossil Fuels with CCS, together with energy conservation from 2020 onwards.



**Not included >>> Lucy to pick up point on Community involvement - article in Guardian this week**

- Renewables can be built rapidly, can be community based and in such cases minimise the transmission and distribution losses – look at excellent examples in Orkney where Community is making a profit