

County Councillors Letter for August 2016

As just about everyone must know the final decision about the building of the Hinkley Point C nuclear power station will not be known until the autumn. Meanwhile EDF (Energie de France) the contractor concerned, is investing another £250 million in further infrastructure projects and contracts in the presumption of ultimate approval. This is in addition to the £2.5 billion that has already been spent or promised to prepare the site, including the removal of thousands of tonnes of asbestos which was buried on site during the construction of the A and B reactors 40 years ago. The reasons for the delay can reasonably be surmised to be the examples of similar projects in Finland and France by EDF which are £6 billion over budget and at least 5 years behind completion date and still have existing design problems. This is compounded by the contractual one third funding contribution by China to help cover the present £18 billion cost of the Hinkley project and the undertaking that China would be given a contract to build a new nuclear generator at Bradwell in Essex and another at Sizewell. They would also be contracted to operate the plants should this go ahead. This would effectively give the control of major sections of the power supplies of UK physically or remotely in the event of implanted discreet digital programming techniques to a foreign country in the event of any hostilities or serious disputes. In the light of the current delays there have already been barely veiled threats about a breakdown in relationships emanating from Chinese Ambassadors and currently senior spokesmen in China. It will therefore, be a vital decision and it has to be said it is causing concern in the USA under the current Presidency, and will continue to do so after November elections to the White House as it would be possible that the current exchanges of information and military technology between the USA and the UK might well be suspected to be compromised by cyber insecurity. In the light of the above, it is therefore important that though the impacts of all types of fossil fuels on our CO2 emission targets are carefully controlled and comply with the very ambitious target timescales we have imposed on ourselves under the constraints of EU directives, the salient need is for the UK power supply to be in surplus to cover every contingency. It is likely that even with current unused gas generating capacity being subsidised for being held in reserve, that the huge number of new dwellings being built, population increases, and the probable post Brexit infrastructure projects which will be implemented to stimulate the economy will require all this and more. Green energy is now producing more electricity in ideal circumstances than the remaining constantly diminishing coal powered generators, but these power sources are intermittent and ultimately variable requiring the shutdown of normal generators when they are at peak output as their power cannot be stored. None of the green generators are truly green. Windfarms both off and on shore require the ab initio production of huge amounts of energy for basal stabilising concrete, metals, electrical machinery, transmission wiring, manufacturing, servicing and erection costs, all of which intensive operations produce their own high CO2 emissions. Though in general lower in pre-operational costs, major solar panel arrays have an additional penalty by effectively sterilising large tracts of arable farm land for periods of at

least 25 years. It is therefore important that alternative methods should be available to produce steady stream supplies of energy from a readily accessible fuel source and this exists everywhere throughout the UK. The UK wastes from 15 to 20 million tonnes of food each year. It is estimated that every household in the UK produces over a ton of household waste over the same period, of which from 15% to 20% comprises food waste. Anaerobic Digestion (AD) is a method whereby in an oxygen free atmosphere food of all kinds and other vegetable matter mixed with human or animal slurry is broken down by micro-bacteria in carefully controlled conditions to produce CO₂ and methane which once the process is completed leaves an end product of a sterilised liquid distillate and a peat like humus, both rich in nutrients and potent soil improvers. The Methane is captured, cleaned and either fed directly into the gas mains or used to power generators. The output can be used on site and the residue fed into the electrical grid for which the Government will pay for each Kwh the grid receives under a feed in tariff (FIT). The amounts paid as FITs vary as the input to the grid increases.

In UK now there 316 AD plants ranging from local private and farmyard applications up to large and medium commercial enterprises with a cumulative installed AD electrical output of 290 MW. There are a further 454 under construction but a major reduction in the value of FITs per KWh this year and further restrictions on the types, sources and emissions of greenhouse gases make the completion of many of these new facilities doubtful as the risk factor is too great. For example bio-generators must make a minimum greenhouse gas (GHG) saving of 60% against the emissions of an EU comparator fossil fuel plant i.e. 79.2gCO₂/ MJ (mega Joule (Watt)) for power and 34.8g/MJ for heat. It is likely that support for bioenergy generation using specially grown crops as a fuel will lose their FITs under the current review of the renewable heat initiative (RHI). This will make the use of genuine waste i.e. food waste as virtually the only acceptable feedstock. It is estimated that the requirement for this feedstock in 2019 will be 6 million tonnes which is well within the current profligate wastage. However in 2014 the Local Authorities only managed to collect food waste separately from 1.3% of households. However it has to be said that the Somerset Waste Partnership (SWP) has a far greater proportion than this and has increased its uptake recently by 20% following a local areas campaign and in Somerset the message is beginning to be received how valuable a resource this waste is, now that the AD plant in Walpole is up and running on around 25,000 tonnes of a 30.000 tonne capacity of domestic and commercial food waste annually, with the additional future "bolt on" capacity for up to 45k tonnes if required. Therefore, it is quite clear that the collection of separated domestic food waste must be maximised by all available means to add to the present very small quotient of 2 million tonnes from commercial and industrial sources. It is to be hoped that these major sources of food waste will be wise enough to see that if they want the lights to stay on in 2020 it is essential that they do their part in providing the fuel for existing ADs and /or conjointly set up bio-generators. The enormous problem of getting the increase in domestic waste food collections may eventually have to be dealt with by a system of inducements or penalties, but for those local Authorities which are collecting food waste

separately and not all are, the advent of longer periods between residual black bin collections which in the future would seem almost inevitable given the forthcoming Government 4 year Revenue Support Grant budget cuts, may trigger a greater degree of willingness once it is realised that potentially smelly waste will be collected weekly if it is put out in the food waste bin, as opposed to lying in the black bin for 3 weeks!

The residual waste in the black bins has similarly a calorific value At present over 40% of the average bin could be recycled as food waste metals, plastic bottles, paper, card, glass bottles etc. but be that as it may put into an Energy from Waste (EfW) where is incinerated under the EU emissions controls regulations it is reduced to bottom ash which is useful as a future component of sulphur resistant concrete, the metals recovered and heat produced for steam turbine generation of electricity up to usually 25 to 30 Mw. The firms get income both from selling generated electricity FITs and the gate price paid per tonne by the waste authorities to dispose of their waste so it is a usually profitable enterprise. Pre Brexit a large AD system would have cost from £11 to £15 million, and an EfW facility in the region of £230 million. Sadly the number of heavy industrial plant manufacturers in UK is now virtually nil, so all the necessary equipment to form the processes in both systems has to be bought from the continent, mainly the EU and specifically Germany in Euros. The pound on the 28th of August 2016 was 1.175 Euro, virtually identical to the value prior to the referendum, however due the uncertainty of the future for UK under Brexit, the cost of buying such hardware has risen by 16% while at the same time forward electricity prices have fallen from October 2015 to April 2016 by 18%. The rises in building costs, increasing of risk and the lowering of financial returns for electricity supplied to the grid puts at hazard the continuance and expansion of these proven, reliable and essential waste disposal methods and their steady state gas and power supplies. It is clear that all these sources of electrical energy production will be vital in the very long and difficult period leading up to the possible eventual operational start date of Hinkley or somewhere in 2030. However, for operators to raise the funding from private sources to expand and cover the proven need in the current financial climate, they will have to have a far greater Governmental appreciation of their value environmentally and economically. This must happen very soon because new facilities take up to 3 years to get permission and to build, and at this juncture the UK will just about be floating free of Europe and the current supplies across the Channel may be either hugely unaffordable or cut off.

Yours

Derek Yeomans
County Councillor for Curry Rivel and Langport.
District Councillor for Burrow Hill