



Rampion press release from Hove Civic Society 16.7.14

Hove Civic Society welcomes the decision announced on 16.7.14 to give consent to the Rampion wind farm project, which will generate 2.1 bn kWh pa of carbon free electricity to keep the lights on in Sussex from 2017, at a cost to consumers of between 12-16 p/kWh (1). This is a good step forward, but will not be enough in itself to meet the government's target of providing 15% of all energy use, including transport, to be renewable by 2020, rising to 34% by 2030. Other carbon saving renewable energy projects are therefore also required.

Shoreham gas fired power station faces Rampion across the sea, and throws away 20% more energy than Rampion will generate, namely 2.5 bn kWh pa of hot water at about 30 degrees C. These carbon emissions could be saved if the station was converted to Combined Heat and Power / District Heating (CHP/DH) by removing a few rows of turbine blades to increase the temperature to 90 degrees C. The station could then keep the radiators hot in 100,000 buildings (150,000 homes) from Worthing to Kemp Town (2) at a cost of less than 7p/kWh (1). The energy efficiency of the station would then rise from about 50% to over 90%.

This technology has been practised in Northern Continental Europe for a century, where most power stations are over 90% efficient by feeding their waste heat into a district heating network, keeping the radiators hot as well as the lights on in their towns. For example, in Denmark practically every urban building is already connected to a district heating network, enabling the Danish government to legislate to become zero carbon by 2050.

This CHP/DH project would save carbon emissions at half the cost of Rampion (less than 7p/kWh compared to 12-16p/kWh) It is also more economically viable (less cost per kWh to consumers) than power from Hinckley Point C nuclear power station, estimated to cost 9.5p/kWh (3) It has less environmental impact than fracking for gas at Balcombe. It would also create more local jobs, with zero environmental impact once the pipes are laid in the streets, and have an economic life of more than a century.

It is therefore the most cost-effective and environmentally friendly way of saving carbon emissions in Sussex, so should be included in the Department of Energy and Climate Change's, (DECC's) energy policy. It should be professionally evaluated in a pre-feasibility study (preferably by continental consulting engineers who are used to this technology) at an estimated cost of £40,000.

Notes for editors

a) DECC still doesn't consider waste heat from Shoreham as a renewable resource, because it comes from burning gas. They published their first Heat Strategy document in March 2012, and a second one in March 2013. The heat load density for district heating has been mapped for the whole of England. The use of waste heat has been incentivised by the non-domestic Renewable Heat Incentive (RHI) However, heat is not yet a commodity in UK, as it is in Europe. We in UK are 15 years behind, so have to play catch-up. More can be found about this in articles 8 and 10 of the European Energy Directive.

b) In Nov 2013 DECC created a Heat Network Delivery Unit (HNDU) to give grants for district heating schemes. Several projects in Brighton and Hove (Royal Sussex County Hospital development, and Hove station development) have been awarded small amounts. This should be applied to the Newhaven incinerator, which presently throws away its waste heat because there is no district heat network to distribute it.

c) Edgeley Green power station was granted planning permission on 6.3.14, It will be sited next to and east of Shoreham power station, burn vegetable oils, and will generate 32 MW and 0.2 bn kWhpa – the equivalent of powering 18,000 average homes. It is said to be going to utilise its waste heat (ie be CHP/DH) (4) but no details are

given of the heat loads that it will serve, which could amount to 60 MW and 0.4 bn kWh pa of hot water, which is enough to keep the radiators hot in 30,000 homes.

d) However, The Shoreham Harbour Joint Area Action Plan is out on consultation and Hove Civic have made representations with an aim to achieve greater recognition of the scope of the area to contribute energy and heat to the Brighton region.

e) On 11.3.14 the Cities minister, Greg Clark MP, launched the Greater Brighton City Deal development plan saying: 'Greater Brighton brings partners from private and public sectors together from across the city region (Brighton & Hove, Adur, Worthing, Mid Sussex and Lewes) – working with a commitment to securing a vibrant local economy which will drive growth, and improve job prospects, earnings and business opportunities. It will enable the area to fulfil its economic potential, turning it into one of the highest performing urban economies in the UK.' We are lobbying them to consider the creation of a district heating network from say Worthing to Kemp Town to utilise this waste heat.

f) Newcastle had recently discovered a renewable resource of geothermal hot water at 85 degrees 2 km below the surface, which it is planning to use to keep the radiators hot in the city.

g) We have pointed out to DECC that we in Sussex also have a renewable source of hot water, enough to supply every radiator in 100,000 buildings in perpetuity. It is at Shoreham power station. Although powered by gas, we claim that this should be regarded by DECC as renewable, because the government is planning to burn gas to keep the lights on in England at least until 2060, assuming a 30 year life for gas turbine power plant, as they are investing in 26GW of new gas fired power plant before 2030, equivalent to 60 Shorehams.

h) DECC's demand-led approach to district heating (incremental growth of small CHP/DH networks which are later linked up to big power stations) has been UK government policy since nationalisation of electricity in 1947. However, it has never worked, because it is cheaper to install individual gas boilers in each home or workplace. This is why UK is so far behind northern continental Europe, where they have always had a supply-led approach to CHP/DH, with mandatory connection to a district heating network if there are pipes in your street. This is why Denmark can legislate to be zero carbon by 2050.

References

1. Mott Macdonald's estimates, 2009.
2. HCS estimates, see paper 9.58 of www.reginaldkapp.org
3. The strike price for nuclear power was announced by the government

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