

Proposed public loan guarantee for a biomass power station in Avonmouth

Background to the Capital Guarantee Scheme

The Treasury announced the Capital Guarantee Scheme in July 2013, with the declared purpose of boosting growth and jobs through public loan guarantees for developments, particularly in the energy and transport sector. Under the scheme, the Treasury guarantees that if anything goes wrong with a developer's investment and they are at risk of defaulting on private loans, then those will be paid out of general taxation (up to a set level). So far, only one public loan guarantee has been made under the scheme: £75 million to Drax for their partial conversion to biomass, which reporters and environmental NGOs have shown is linked to the [clearcutting of ancient wetland forests in the southern US](#). In October, the Treasury published a shortlist of 17 projects that have been prequalified for a guarantee under this scheme. The final selection has not yet been announced. The [shortlist](#) includes three large biomass electricity developments. One of those is a proposed 100 MW biomass power station in Avonmouth. ***This power station has failed to attract investment since it was consented in 2010 and thus appears unlikely to be built without a public loan guarantee.***

Background to the biomass power station which Helius Energy propose to build at the Port of Bristol, Avonmouth

Helius Energy plans to build a 100 MW electricity-only biomass power station at Avonmouth. They were granted planning consent by DECC in March 2010. Bristol City Council's Development Control (North) Committee had considered the [application](#) in May 2009 and decided not to object. At that time, awareness of the problems with imported solid biomass was low and there had been no objections from local residents or from campaign groups to this application (due undoubtedly to the fact that few were aware of the plans at the time).

When approving the application, DECC decided not to consider its sustainability. In defence to a subsequent unsuccessful Judicial Review request by a Welsh campaign group, DECC stated: "*The biomass fuel needed for this and many other installations is likely to come from outside the UK. The UK government has no way of imposing, or enforcing, a standard for 'sustainability' on forestry operations in other EU Member States or third countries, and to do so could involve an unlawful restraint on trade.*"

The planning application covered the full range of biomass that does not fall under the Waste Incineration Directive: Roundwood, forestry and sawmill residues, energy crops, agricultural residues. A dedicated 100 MW biomass power station will require around 1 million green tonnes of wood a year.

Except for stating that the large majority would be delivered by ship (i.e. imported), Helius Energy has consistently failed to announce what types of biomass they intend to source from which regions.

If this power station got built, what type of biomass are they likely to burn?

Wood accounts for the bulk of biomass energy in the UK and worldwide and there is little doubt that this power station would rely on imported woodchips and/or wood pellets. So far, the large majority of wood imported for bioenergy in the UK comes in the form pellets from the Canada and the southern US. In the southern US, conservation NGOs have shown that pellet exports rely on [whole trees](#) logged for this purpose. Pellet production [threatens the last remnants of highly biodiverse and carbon-rich ancient, especially wetland, forests](#).

In British Columbia, oldgrowth forests are being clearcut at a rapid rate and the [Wood Pellet Association of Canada](#) has publicly stated that their industry depends on using wood from primary, i.e. oldgrowth forests.

However, there is large and fast-growing competition for wood pellets from the US and Canada from energy companies such as Drax, E.On and GDF Suez. Wood from slow-growing trees in the northern hemisphere is the [only type of biomass that can be burned in large quantities in coal power stations](#). Therefore, companies such as Heliuss Energy may look elsewhere for wood imports. According to a [European Parliament report](#), South America, West and Central Africa are likely to become primary sourcing regions in future. In those regions, the expansion of monoculture tree plantations such as eucalyptus monocultures is linked to large-scale land-grabbing, destruction of forests, wooded savannah and other biodiverse ecosystems, water pollution and depletion and many cases of human rights abuses. See for example a recent case study about eucalyptus plantations for wood pellets for export in Brazil: <http://biofuelwatch.org.uk/wp-content/uploads/eucalyptus-plantations-for-energy-online.pdf>.

What would the impacts of the power station be?

+ More pressure on forests: Overall, current industry plans for biomass electricity in the UK would result in an annual demand for around 82 million tonnes of wood – 8.2 times as much as all the wood produced in the UK every year. This scale of demand is highly unsustainable and must, directly, or indirectly, result in more intensive logging practices, logging in hitherto undisturbed forests and/or the expansion of monoculture plantations. [DECC has confirmed](#) that biomass electricity will rely on at least 80% imports.

+ Threat of land-grabbing for monoculture tree plantations in South America or Africa;

+ Increased carbon emissions: [Scientific studies](#) show that burning wood from whole trees (i.e. roundwood – the first type of biomass mentioned in Heliuss Energy's planning documents for Avonmouth) results in a carbon debt of decades or even centuries. This means that for several decades at least, carbon dioxide emissions from biomass electricity will be higher than those from generating equivalent amounts of energy from fossil fuels.

+ Low efficiency: Dedicated biomass power stations such as that planned in Avonmouth rarely achieve more than 30% efficiency. This means that for three trees cut down, more than two are entirely wasted as uncaptured heat.

+ Locally, such a large biomass power station will mean significantly higher air pollution levels, including with nitrogen dioxide, small particulates, sulphur dioxide and heavy metals. In 2009, the then [Energy Minister stated](#) that government-commissioned research showed that increased small particulate emissions from biomass expansion could lead to the loss of up to 1.75 million life years in the UK by 2020.