Dear Mr Drummond,

Re: Estover Energy's application for a biomass combined heat and power plant at Craigellachie Wood, Ref: 12/01490/APP

I am writing on behalf of Biofuelwatch to object to Estover Energy's application for a biomass power plant at Craigellachie Wood. The grounds for our objection are:

1) Sustainability: We contend that the scale of the proposed power plant in relation to its location makes it unsustainable, that the sourcing claims put forward by Estover Energy lack credibility and that this is a material planning issue;
2) Local impacts on air quality and noise levels: We believe that there are serious flaws in the air quality and noise assessment reports submitted by Estover Energy and that the conclusions reached in both reports are therefore not reliable.

We are aware of various additional grounds for objection put forward by local residents, however as a national organisation with limited knowledge of the local area we have to confine our own objection to the above reasons.

Sustainability:

A- Government policy on biomass sustainability:

Current Scottish Government policy in relation to biomass is set out in the 2020 Routemap for Renewable Energy in Scotland[1], the draft 2012 Electricity Generation Policy Statement[2] and the Scottish Government's Report Low Carbon Scotland: Meeting the Emissions Reductions Targets 2010-2022[3].

According to the 2020 Routemap: "*Scottish Government policy supports the deployment of biomass in heat-only or combined heat and power plants, particularly off gas-grid, and to a scale which maximises heat use and local supply…Key issues related to this interdependency include:*
the need to ensure that the limited resource of woody biomass is deployed in the most efficient manner, namely as heat or CHP which demonstrate 90% and 50-70% efficiencies respectively, rather than as electricity-only generation which is 30% efficient." The Routemap further states: "*Policy to promote the use of woody fibre for biomass needs to be balanced alongside the policy to promote low carbon construction and other uses of wood such as by the wood panel sector, which "lock in" carbon to the benefit of wider carbon emissions reductions targets, as well as of course providing value to the Scottish economy. The energy target should not be to the detriment of the climate change target and wider Scottish economy.*"

This is confirmed in the draft Electricity Generation Policy Statement: "*Biomass should be used in small heat only and CHP applications, off gas-grid, the better to contribute to meeting the Scottish Government's target of 11% of heat demand to be sourced from renewables by 2020….We would prefer to see biomass used in heat-only or combined heat*

[1] www.scotland.gov.uk/Publications/2011/08/04110353/0
[2] www.scotland.gov.uk/Topics/Business-Industry/Energy/EGPS2012
[3] www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/lowcarbon/rpp

and power (CHP) schemes, off gas-grid, and at a scale appropriate to make best use of both the available heat, and of local supply..Use of available heat in heat-only and CHP schemes achieves 80-90% energy efficiency for the former and 50-70% for the latter, compared to 30% in electricity only schemes. Given the limited resource, we have to ensure that it's used as efficiently as possible…Developments should be scaled appropriately so that they can make efficient use of the available heat and local supply. We believe that this will enhance security of supply, minimise carbon emissions and reduce the impact on other sectors competing for biomass material".

It is also confirmed in the Low Carbon Scotland policy document: "*Heat generation from biomass will have an important role in delivering the 11% renewable heat target. The Scottish Government's policy is to promote the use of biomass plants for heat only or for combined heat and power, with new plants relatively small in scale. This is in order to optimise local supply, serve localised heat markets and maximise efficient use of a limited fuel source…Wood fuel is a limited resource and should be used in the most efficient way*".

This means that Scottish policy identifies biomass as a limited, scarce resource which should be used for energy with high efficiency levels (heat only or CHP with at least 50-70% efficiency) and appropriately scaled and sited to make good use of local resources, without competing with other forestry industries, such as the wood panel industry.

As we will show below, those requirements would not be met by Estover Energy's plant.

<u>B - Biomass sustainability is a material planning matter:</u>

The Scottish Government's General Biomass Scoping Advice, issued in 2010 specifies *"what information Scottish Ministers would expect to be covered in a biomass application*"[4]. Although this document focusses on power station applications of more than 50 MW, we understand that the list of material planning issues will be relevant for applications of all size. The Scoping Advice states: "*The Environmental Statement should set out the type of fuel(s) and form of fuel (wood pellets, chips, meals. cakes,logs, bales etc) the developer intends to use; if proposing to use more than one fuel type the developer should define the proportion of each type of fuel proposed. The plant's annual fuel requirements should also be set out within the proposal accompanied by detailed and robust fuel sourcing plans, together with the transportation delivery method for each fuel type (Le. road, pipeline, ship etc).*" (5.1) AND "*Applicants should consider the finite domestic supply of wood fibre; the potential demand on the Scottish and UK timber harvest should be set out by the developer within a robust fuel supply plan covering the life span of the proposal.*" (5.3.3) Furthermore, in line with Government Policy outlined above, this guidance states: "*In terms of scale, it is anticipated that new biomass plant will be relatively small in scale, both to optimise local supply and, where heat is deployed, to serve localised heat markets. Indeed, whilst biomass is a renewable resource, there is also a finite supply of sustainable biomass available at any one time, and a limited indigenous supply. If the potential for heat deployment from biomass plants is not utilised, these plants will use the available biomass resource in a way that does not use whole energy content effectively, and will increase the risk of Scotland falling short of its renewable heat target.*" (8.1)

[4] www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Guidance/Biomass-scoping-advice

The Scottish Government's planning advice note "Woody Biomass"[5] is directed at local planning authorities. It confirms the importance of considering wood sourcing in all biomass planning applications. It states: "*In the face of difficulties associated with obtaining adequate woodfuel, applications should be supported by a clear plan for securing woodfuel supplies in the long term that minimise adverse land use, landscape and transport implications, both domestically and overseas."* Mapping of local wood supplies is identified as an essential part of the planning process.

In a recently heard (not yet determined) Planning Inquiry related to Forth Energy's application for a biomass power station at Grangemouth Port, full arguments about the wider sustainability of that power station proposal were heard by the Reporter.

C - Estover Energy's proposal does not meet the efficiency requirements set out in Scottish policy:

Although Estover Energy's proposed plant will supply heat and is thus classed as a CHP plant, we understand that its overall level of efficiency will be far below the 50% minimum identified in Scottish policy cited above. According to the planning documents, the power station will burn around 150,000 tonnes of wood a year and produce around 10 MW of electricity for export as well as 10 MW of steam for heat at the Macallan Distillery. Presuming that the power plant would run for an average of 8,000 hours a year, we estimate that the conversion efficiency would be around 38%. The exact figure, however, depends on the moisture content of the 150,000 tonnes of wood. Without that information being supplied by the developer, it is impossible to precisely calculate how efficient the power plant will be – yet conversion efficiency clearly is relevant to the planning application.

Here is our calculation with our assumptions explained:

According to the application, some of it will arrive as woodchips (which have an average moisture content of 30%) and most of it will be chipped on site. Presuming that most of the wood will be softwood and will have been pre-dried to some extent before chipping, we would estimate an average of 50% moisture content. Based on this the calculation would be:

+ 150,000 tonnes of wood with 50% moisture;
+ Assumption that the power plant will run 8,000 hours a year;
+ Gross calorific value for oven dried wood: 20 MJ/kg;
+ Net electric output 10 MW, net thermal output 10 MWth;
+ Fuel consumption: 18.75 tonnes per hour (based on 150,000 tonnes of wood);
+ 1 tonne of wood used by Estover = 0.5 oven dried tonnes of wood;
+ Energy input = 18.75 x 2.78 = 52.1MW so efficiency = (10 + 10) / 52.1
= 0.384 = 38%.

If this is correct that the power plant will operate well below optimal efficiency levels and well below the 50% minimum for CHP plants referred to in Scottish policy.

D - Estover Energy's (local) sourcing claims lack credibility:

[5] www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables/Woodbiomass

Estover Energy claim, that sufficient local wood is available and state: "*The aim is to source fuel predominantly from within 50 miles of the plant.*" They further state that the wood will be small roundwood and brash (tops and branches) – not roundwood large enough to be of use for sawmills. We would point out that if they could ensure this then they would still compete with the wood panel industry which also makes use of small roundwood and which provides significant more jobs per unit of wood than biomass generation does.

Detailed information about national and regional wood availability across the UK has been compiled by Forest Research, the science committee of the Forestry Commission. It can be accessed at http://www.eforestry.gov.uk/woodfuel/ . According to Forest Research, total wood availability of the type identified by Estover (i.e. with stem diameter of less than 14 cm since larger wood is in high demand for saw mills) is only 43,436 oven dried tonnes a year across all of Moray for 2012-16 and is projected to reduce to 41,176 oven dried tonnes a year for 2017-21. Assuming that the 150,000 tonnes of wood required by the developer will contain 50% moisture, they will require 75,000 tonnes of oven dried wood annually, i.e. significantly more than all of the relevant wood available across all of Moray. By comparison, the larger Inverness Forest District produces 58,482 oven dried tonnes of the types of wood identified by Esotver a year (2012-16), again expected to slightly reduce after 2016. Thus all of the small roundwood and brash produced in one of Scotland's largest forestry districts would be far too little to supply the proposed power station.

Furthermore, Estover does not look at cumulative impacts from other wood bioenergy developments on local and regional wood demand – such as from the Helius Energy plant which is under construction at Rothes and from Estover's proposed biomass power station in Aberdeen.

It appears clear therefore that Estover will not be able to run the power station on locally sourced small roundwood and brash as they claim. They will either have to import wood from much further afield or they will have to burn large roundwood, thus directly competing with sawmills and with the jobs those provide. Furthermore, the specific local site is one where, according to the Rothes Felling Plan submitted by Estover, future wood availability appears to be particularly low. As the local Felling Plan shows, only a very small percentage of conifer plantations will be logged before 2020[6].

We therefore believe that the power station's wood demand is of a scale which makes it unsustainable at the chosen location and in the context of growing regional competition for the same wood.

E - Overall impacts on sustainability:

Across the UK, energy companies have proposed biomass power stations which, together (if they all go ahead) will burn at least 90 million tonnes of wood a year. By comparison, total UK wood production, according to the Forestry Commission, is only 10 million tonnes annually. Furthermore, even before most of those developments are realised, the UK imports approximately five times as much wood and wood products as it produces. Further increasing the demand for wood for bioenergy will thus inevitably lead to greater pressures

[6] http://public.moray.gov.uk/eplanning/files/D65022E8CD646AC0C08A3C1A49A06B84/pdf/12_01490_APP-SUPPORTING_STATEMENT_-_APPENDIX_17_-_FORESTRY_MANAGEMENT_PLAN-203699.pdf

on forests both in the UK and overseas, indirectly if not directly causing more demand for imports.

A growing number of scientific studies shows that biomass from trees cut down for this purpose results in a carbon debt of several decades if not centuries when compared to the fossil fuels it might replace[7]. This means worsening climate change at a time when climate scientists are warning that emissions must be brought down as fast as possible. Given that Estover's claims about locally available small roundwood and brash are contradicted by Forestry Commission figures cited above, use of whole trees would appear a realistic prospect.

According to the Forestry Commission, acknowledged threats from brash removal, as proposed by Estover, are

- "Increased soil damage due to compaction, rutting and disturbance leading to erosion and increased turbidity and siltation of local watercourses.
- Removal of essential major and micronutrients (e.g. nitrogen, phosphorus, potassium and boron), leading to lower soil fertility, and potential loss of tree growth in subsequent rotations.
- Removal of base cations (calcium, magnesium, sodium and potassium) reducing soil buffering capacity and leading to increased soil and stream water acidification."[8]

Furthermore, brash removal can cause significant CO2 emissions as a result of soil carbon losses[9].

Air quality and noise:

We have carefully looked through the Air Quality and Noise Assessments and would like to draw your attention to a number of apparent flaws:

+ The Air Quality Assessment appears to ignore potential wood dust emissions from chipping, some of which will be within the PM10 and even PM 2.5 size range. Yet wood chipping can lead to significant wood dust emissions.

+ No cumulative Air Quality impacts, especially from the Helius energy plant at Rothes appear to have been assessed.

+ The Air Quality assessment does not look at nitrogen, acid or ammonia deposition, i.e. air quality impacts on ecosystems.

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[7] See for example The upfront carbon debt of bioenergy, Joanneum Research, July 2010 and Biomass Sustainability and Carbon Policy Study, Manomet Center for Conservation Sciences, June 2010

[8] www.forestry.gov.uk/fr/INFD-8DPFXZ (Nutrient Budget of Forest Ecosystems in Great Britain, Forest Research, Forestry Commission)

[9] Birdlife International et al., "Woody biomass for Energy:NGO Concerns and Recommendations," NGO briefing paper, Birdlife International et al., April 2011, www.fern.org/sites/fern.org/files/NGO%20Report%20on%20Biomass%2011%20April%202011.pdf

+ The Noise Assessment includes an assessment of noise from the boiler house, air cooled condensers, fuel store, workshop, external fuel handling vehicle and the semi-permanent woodpile. It appears not to include an assessment of noise from the chipper, yet wood chipping would be a significant source of noise from such a plant.

+ The Noise Assessment does not appear to consider noise generated by traffic for wood deliveries as well as other site access – it only considers noise from an on-site fuel handling vehicle.

Best regards,

Almuth Ernsting
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