

To: [dundeebiomass@scotland.gsi.gov.uk](mailto:dundeebiomass@scotland.gsi.gov.uk)

Dear Sir/Madam

Re: Forth Energy's Dundee Application, Addendum 2

On behalf of Biofuelwatch I wish to confirm that we have carefully looked through Forth Energy's Addendum 2 Full Report and Non-Technical Summary and that the new documents do not address any of the concerns raised in our initial objection. Our original grounds for objecting to the development, stated in our submission from December 2010 remain unchanged. However, we would like to provide further comments and observations related to the new Air Quality Assessment and the air quality impacts of the proposed power station.

Observations about the new Air Quality Assessment:

The new Air Quality Assessment shows in Table 11 that, if the standard method of estimating the conversion of nitrogen oxide (NO<sub>x</sub>) emissions to nitrogen dioxide (NO<sub>2</sub>) is used:

- existing breaches of the annual mean NO<sub>2</sub> objective will be worsened by between 0.4 and 1.1 µg/m<sup>3</sup> at three receptors;
- the annual mean NO<sub>2</sub> objective will be breached at two more receptors, where it is not currently being exceeded;
- at two receptors where NO<sub>2</sub> levels are close to the objective, NO<sub>2</sub> levels will be increased by 0.4 and 0.7 µg/m<sup>3</sup> and reach 37.2 and 39.6 µg/m<sup>3</sup> respectively, which indicates two more possible breaches of the objective.

Given the persistent current breaches of the NO<sub>2</sub> objective in Dundee and their health impacts (more on those below), we believe that those additional impacts would be unacceptable.

This does not appear to be disputed in Forth Energy's new documents. Instead, they are claiming that the standard methodology of converting NO<sub>x</sub> to NO<sub>2</sub> should be ignored and that, in this particular case, at most 35% of NO<sub>x</sub> converts to NO<sub>2</sub> in respect of long-term average concentrations. By doing so, they have cut the predicted additional long-term average NO<sub>2</sub> impacts by half.

The Environment Agency's guidance on converting NO<sub>x</sub> to NO<sub>2</sub> – which we understand is followed by SEPA, too – states: "*Worse case scenario: 35% for short-term and 70% for long-term average concentration should be considered. If PEC (process contribution + "relevant background concentration") exceeds the relevant air quality objective, then proceed to step 3. 3. Case specific scenario Operators are asked to justify their use of percentages lower than 35% for short-term and 70% for long-term in their application reports.*"<sup>1</sup> 70% is thus the standard conversion rate and while the Environment Agency allows developers to put forward evidence about any variation from that rate in specific local circumstances, we have never before

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[http://www.environment-agency.gov.uk/static/documents/Conversion\\_ratios\\_for\\_NOx\\_and\\_NO2\\_.pdf](http://www.environment-agency.gov.uk/static/documents/Conversion_ratios_for_NOx_and_NO2_.pdf)

come across a case in which a developer has argued that only 35% of NOx stack emissions is converted to NO2 over the long term.

We understand that Forth Energy's claim is not backed up by the widely accepted science on NOx conversion, to a large part because the low 35% conversion rate relies on chemical processes that depend on solar radiation and that can thus only happen during daylight hours, not when it is dark.

Forth Energy's application in the context of Dundee City's existing air quality objective breaches:

SEPA, in their original response to the application stated:

*"If air quality in the vicinity of the development does not improve as anticipated in the addendum to the Environmental Statement we are likely to be unable to grant a PPC [i.e. an operating] Permit".*

Since then, air quality in the local area has not improved. Dundee City Council's latest 2012 Air Quality Updating and Screening Assessment<sup>2</sup> states:

*"The 2011 monitoring data confirm the continuing need for the AQMA and the subsequent Air Quality Action Plan (AQAP). Concentrations of these pollutants are above the objective and have increased in many areas of the city since the AQMA was declared. The greatest increases in pollutant concentrations have been recorded along the city centre bus corridor, the north-west arterial route and associated access roads, major junctions on the Kingsway and at Stannergate Roundabout."*

The main change proposed by this assessment is that the scope of the AQMA should be widened to include breaches of the hourly as well as the long-term average NO2 objective. Several of the locations where the NO2 objective is being consistently breached, including around the Stannergate Roundabout, are close to the site of the proposed power station. Three automatic monitoring stations (Lochee Road, Seagate and Meadowside) as well as 19 diffusion tubes measured exceedances of the NO2 standard. Exceedances of the PM10 standard were recorded at Union Street, Victoria Road, Logie Street, Lochee Road, Seagate and Meadowside.

The 2012 Updating and Screening Assessment further shows that hourly PM10 exceedances have been occurring at different sites when the wind was blowing from the direction of the Port, i.e. the proposed site for the power station. This was the case at Lochee Road, Logie Street, Victoria Road, Seagate, Union Street and Broughty Ferry Road. The Assessment does not record the wind directions that correlate with exceedances of the NO2 objective but we presume that those would match those linked to breaches of the PM10 objective.

While Forth Energy are correct in saying that most of the existing NO2 and PM10 emissions are from road traffic, we can see nothing in planning policy to suggest that this should have any bearing on the this application. It is precisely because of the existing high air pollution levels that an additional significant source of both

pollutants should not be permitted.

We are deeply concerned to note that, according to NHS Tayside statistics, the death rate from respiratory illnesses is higher in Dundee than in Angus and Perth & Kinross and that those diseases are twice as prevalent in Dundee as in nearby rural areas. As the World Health Organisation has shown, NO<sub>2</sub> and small particulate levels at many locations in Dundee are already high enough to be expected to increase the risk of ill health and premature death.

Observations about predicted PM<sub>10</sub>/PM<sub>2.5</sub> emissions from the proposed power station:

The Addendum does not amend the information and claims about the predicted stack emissions contained in Forth Energy's original 2010 Air Quality Assessment. We are concerned that the predicted PM<sub>10</sub>/PM<sub>2.5</sub> stack emissions may be an under-estimate of what can be expected from a power station that size. Forth Energy predicts that the power station would emit 37,440 kg of PM<sub>10</sub> a year (all of it presumed to be PM<sub>2.5</sub>). However, when compared to monitoring figures from the US Environmental Protection Agency for a 50 MW biomass power station in Burlington, Vermont<sup>3</sup>, Forth Energy's predictions appear unrealistically low. The Burlington power station uses Best Available Techniques for NO<sub>x</sub> and PM<sub>10</sub> mitigation (as Forth Energy propose to do) and the main difference, apart from the fact that it is half the size, is that it only burns untreated virgin wood. Forth Energy's predicted figures, compared to those recorded in Burlington are just over two thirds half the rate of PM<sub>10</sub>/PM<sub>2.5</sub> per MWh. We can see no credible reason for such a prediction. Furthermore, Forth Energy contradicts itself by predicting that a lot more fine ash will be emitted through the smokestack than is considered in its air quality assessment.

Best regards,

Almuth Ernsting  
Biofuelwatch