Scottish Environment Protection Agency

Our ref: PCS/109361
Your ref:

If telephoning ask for:
Angela Burke

Lesley McNeil
Renewable Energy Division
Energy Directorate
Scottish Government

By email only to: econsentsadmin@scotland.gsi.gov.uk

13 December 2010

Dear Lesley

Electricity Act 1989
The Electricity Works (Environmental Impact Assessment)(Scotland) Regulations 2000
Section 36 Application for the proposed Biomass Power Plant at the Port of Dundee

Thank you for consulting SEPA on the Section 36 application for a biomass power plant at the Port of Dundee. This representation relates to the information contained in the Environmental Statement which we received on 24 September 2010 and the subsequent addendum received on 5 November 2010.

We are satisfied that the proposed development is potentially capable of being consented under the Pollution Prevention and Control (PPC) Scotland Regulations 2000, and that any environmental or health impacts that relate to SEPA can be controlled under this regime. We therefore have **no objection** to the principle of the development. However, as outlined in Section2 this position is based on a number of air quality assumptions. 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 Permit. If Scottish Ministers are minded to grant Section 36 consent, a risk therefore exists that the consent may not be able to be implemented.

If Scottish Ministers are minded to grant Section 36 consent, we consider the **conditions** suggested by us in Sections 7.3, 9.2, 10.1 and 10.2 to be complementary to our regulatory control. We recommend that these conditions are attached to any grant of consent.

Advice for the Scottish Government

1. Environmental regulation

1.1 The operation of the proposed development will be controlled by us under the Pollution Prevention and Control (PPC) Scotland Regulations 2000. Based on the information provided we are satisfied that the development is potentially capable of being authorised under this regime. However, this is based on the air quality assumptions in the addendum to the Environmental Statement being accurate. There is a high risk that the air quality objectives and European limit values, particularly those relating to nitrogen dioxide in the vicinity of the Stannergate Roundabout will not be met before the plant becomes operational in 2015. We are likely to be unable to grant a PPC Permit to enable the operation of the plant if European limit values are not met at the time of determination. Further detailed advice on this issue is provided in Section 2.

1.2 It should be noted that the detailed design of the facility has not been provided at this stage. We are therefore unable to determine whether or not the proposed plant has been designed in accordance with the Best Available Techniques. This will be assessed in detail as part of the PPC application.

1.3 It is important to note that at the Section 36 application stage, we are not seeking to undertake a detailed assessment of the development in order to meet the regulatory requirements. We do however, need to establish the acceptability of the development in principle in terms of land use and ensure that we are able to achieve an acceptable level of protection through regulation. Assuming that the air quality assumptions in the addendum to the Environmental statement are accurate we are satisfied that this is achievable.

1.4 This position is given without prejudice to any decision made on elements of the proposal regulated by us, which may take into account factors not considered at the Section 36 application stage.

2. Air quality

2.1 The comments in this section relate to the air quality assessment contained in the addendum to the Environmental Statement.

2.2 The potential impact of nitrogen dioxide emissions from the proposed plant requires careful consideration. The development site is located within the Dundee Air Quality Management Area, where the air quality objective and European limit value for nitrogen dioxide ($40\mu g.m^3$) is currently being exceeded. Emissions from the proposed plant would therefore contribute to these exceedences.

2.3 To address this issue the air quality assessment contained in the addendum has considered the impact of reduced emissions on local air quality in 2015 when the proposed plant is due to commence operation. This assessment predicts that the annual mean concentration of nitrogen dioxide will meet the air quality objective and European limit value by 2015. We are satisfied that the air quality modelling

is reasonable and adequately justified, however, this is based on a number of assumptions (and correction factors), as outlined below:

1 That oxides of nitrogen emitted from the stack will be reduced by 25% (from 200mg/m^3 to 150mg/m^3) through the use of abatement technologies. Details of the proposed abatement technology have not been provided at this stage. To generate a worst case scenario the modelling also assumes that the plant will operate 365 days a year and that all emissions will be the maximum permitted.

2 That emission's from road traffic will reduce year-on-year as older vehicles are replaced by new technologies (this does not include potential reductions as a result of measures introduced by Dundee City Council's Air Quality Action Plan). Any reduction in emissions resulting from the action plan will be in addition to those predicted by the modelling.

2.4 Based on these assumptions the modelling has predicted that the proposed plant will add 1.64µg.m^{-3} of nitrogen dioxide to the annual mean concentration in the vicinity of the Stannergate Roundabout. In addition to this it predicts that the concentration from road traffic and other background sources is likely to be 35µg.m^{-3} in 2015. The maximum annual mean concentration of nitrogen dioxide at the Stannergate Roundabout in 2015 is predicted to be 36.64µg.m^{-3}. This suggests that the annual mean concentration of nitrogen dioxide at this location will meet the Scottish air quality objective and European limit value. However, monitoring undertaken by Dundee City Council at the Stannergate Roundabout recorded an annual mean concentration of nitrogen dioxide of 47µg.m^{-3} in 2009. A reduction of 12µg.m^{-3} over a period of 5 years will therefore be challenging.

2.5 In addition to the predictions for Stannergate Roundabout the modelling has predicted that the proposed plant will add a slightly higher process contribution of 2.00-2.21 µg.m^{-3} of nitrogen dioxide at several locations where the annual mean concentrations are less than 30µg.m^{-3}. We are satisfied that the Scottish air quality objective and European limit value of 40µg.m^{-3} will not be exceeded at any of these locations.

2.6 The air quality assessment has also shown that the emissions of particulate matter (PM_{10}) from the Energy Plant will contribute very little to the annual mean concentrations in Dundee. The maximum process contribution is predicted to be in the region of 0.04µg.m^{-3}. Monitoring by Dundee City Council has shown that the annual mean concentration of PM_{10} on the Broughty Ferry Road in 2009 was 15µg.m^{-3} (VCM). This value is less than the Scottish annual mean air quality objective of 18µg.m^{-3} and is considerably lower than the European limit value of 40µg.m^{-3}. The addition of 0.04µg.m^{-3} of PM_{10} from the proposed plant will therefore be within limits, and according to guidance produced by Environmental Protection UK and the Institute of Air Quality Management (table 17) is likely to be imperceptible.

2.7 The situation in relation to $PM_{2.5}$ is likely to be similar. The annual mean concentration of $PM_{2.5}$ at this location is likely to be in the region of 10µg.m^{-3}. This value is less than the Scottish annual mean objective of 12µg.m^{-3} and is also considerably lower than the European limit value of 25µg.m^{-3}. The concentrations

of particulate matter (both PM_{10} and $PM_{2.5}$) are also predicted to fall year-on-year. As the 2015 concentration is likely to be slightly lower than that measured in 2009 we are satisfied that the emissions of particulate matter from the plant will not have a significant impact on local air quality.

2.8 The proposed stack will be built at a height of 90 m to discharge flue gases from the combustion units. Based on the assumption that emissions from the stack can be reduced by 25% as detailed in the addendum through the use of appropriate abatement technologies we are satisfied with the height justification. This will be assessed in more detail as part of the PPC application process and could result in modifications to the stack height if the assumptions prove to be incorrect.

2.9 In terms of the environment and human health, the modelling predicts that the impact on sensitive receptors in 2015 will be within limits. We will undertake a further more detailed assessment of the potential impacts on human health as part of the PPC application.

2.10 We are satisfied that the potential impacts on air quality have been adequately assessed in the addendum to the Environmental Statement. The assessment has used guidance produced by Environmental Protection UK and the Institute of Air Quality Management to assess significance in relation to nitrogen dioxide and particulate matter. In most cases, the process contribution from the Energy Plant is predicted to have a "negligible" or "slight adverse" impact on local air quality. Assuming that concentrations of nitrogen dioxide measured at the Stannergate Roundabout reduce as predicted in the modelling we are satisfied that the predicted contribution of nitrogen dioxide from the plant is unlikely to lead to an exceedance of an air quality objective or European limit value. Based on this assumption we are therefore satisfied that the proposed plant is potentially capable of being authorised under the PPC regime. Air quality issues will be dealt with in more detail as part of the PPC process with measures put in place to monitor stack emissions to ensure compliance with air quality objectives and European limit values.

2.11 It is important to note that dust emissions related to construction activities will not be directly controlled under the PPC permit. If minded to grant Section 36 consent Scottish Ministers may therefore wish to impose additional controls to deal with construction related dust emissions. However, assuming the activities are carried out within the PPC site boundary, we will liaise with the applicant and the Falkirk Council with regard to environmental impacts.

3. Habitats

3.1 We have assessed the potential impact of acid and nutrient deposition from the plant on Natura sites. All of the Natura sites have been screened out except Barry Links Special Area of Conservation (SAC) as it is acid sensitive. The information provided indicates that both the nutrient-N and acid deposition process contribution at Barry Links SAC exceeds the 1% threshold. This exceedence indicates a risk that the proposed plant may have a significant effect on the qualifying features of the SAC. To address this issue Forth Energy have provided further information in Appendix E3, however, this fails to adequately

demonstrate that there will not be a likely significant effect on the Barry Links SAC.

3.2 The Scottish Government as Competent Authority will therefore need to undertake a further assessment (an appropriate assessment) under the Habitats Regulations 1994 before the Section 36 application can be determined.

3.3 In addition to this, due to the lack of information on Sites of Special Scientific Interest (SSSIs), we consider that Forth Energy has not demonstrated that the proposed plant is unlikely to damage any SSSI. The Scottish Government as Competent Authority will also need to undertake a further assessment (an appropriate assessment) under the Nature Conservation (Scotland) Act 2004.

3.4 An appropriate assessment will also be undertaken by us at the PPC application stage. We will be unable to grant a PPC Permit unless it has been demonstrated beyond all reasonable scientific doubt that the proposed plant will not have a significant effect on Natura sites. The only except to this is would be if Scottish Ministers determine the proposal to be of over-riding public benefit.

4. Sustainability

4.1 The fuel source for the proposed plant will primarily comprise virgin wood chip or pellets with the remainder made up of biomass from purpose grown energy crops and recovered waste materials (timber, paper and cardboard). Due to the limited availability of UK biomass the majority of the fuel will be procured from overseas.

4.2 We believe that the use of biomass fuel can contribute to sustainable climate change mitigation, as a renewable source of energy that can have a lower carbon impact than other traditional fuels. However, the resource is finite in reality, as there is a limited supply of suitable material available. We therefore support the Scottish Government's policy on biomass that states that biomass is best used for heat or combined heat and power, at a small scale and in distributed locations. Based on the information provided the proposal does not appear to comply with this policy.

4.3 We broadly welcome the approach taken by Forth Energy in providing a sustainability appraisal of the proposal. However, we have some concerns regarding the methodology used to calculate green house gas savings. This may mean that the potential environmental impact of the proposed development has been underestimated.

4.4 In particular, we are concerned that the methodology deployed to calculate the lifetime green house gas savings of the schemes includes an assumption of zero emissions from land within the growing cycle of the fuels (Section 4.1.8). This is likely to be incorrect and therefore leads to a potentially significant underestimate of green house gas emissions from the fuel. The calculation of green house gas savings from transport may also be underestimated. The appraisal does not acknowledge that emissions and the receiving environment may be of concern due to local air quality constraints. The assumption in the appraisal that the most simple shipping transport route is followed may also not be appropriate. The market influence and volatility of prices may result in shipments being diverted

mid route to alternative markets, thereby increasing transport emissions.

4.5 We also have concerns regarding the availability of biomass supplies and the scale of increase in demand. This increase in demand will give rise to increased costs for biomass which will have significant impact on minor users, large users and international competition for supplies. This rapid increase in demand could also lead to land use change in unsustainable ways, despite a commitment to certification, through indirect land use change. As the commitment to Forestry Stewardship Council or other certification for the biomass supplies cannot be guaranteed for the lifespan of the development there will be a reliance on financial mechanisms such as the Renewables Obligation to guarantee the sustainability of the developments. It is important to note that we are unable to control the fuel source under the PPC Regulations.

4.6 To assist the Scottish Ministers in determining the Section 36 application we would also like to highlight that third party economic and international impacts have not been addressed adequately in the sustainability appraisal. The anticipated increase in demand for biomass energy supplies poses a risk to others who make use of biomass including non energy uses. The consequent economic and social impacts of this could be great. There is also no mention of the social or environmental impacts of the fuel sources in the source countries. The social and environmental consequences of this development overseas should be considered within an overall assessment of the sustainability of this development.

4.7 When determining this application Scottish Ministers should ensure that the most effective use is being made of the biomass resource, and that the biomass fuels are sustainable. As proposed in the Renewables Obligation (Scotland) which is currently out for consultation, we support the introduction of biomass sustainability standards. We note the government's commitment to sustainable biomass for electricity, along with plans to extend this sustainability requirement to biomass heat and the intention to incentivise biomass heat under the Renewable Heat Incentive. Reliance on financial instruments to enforce sustainability requirements on significant developments with long project lives seems to provide the most realistic approach to ensuring that the most effective use is being made of the resource. However, we would welcome government commitment to keep these sustainability standards under review in order to ensure their effectiveness is maintained. There also remains a need for internationally agreed renewable standards that go beyond the Renewable Energy Directive requirements.

5. Energy efficiency

5.1 We welcome the inclusion of a Combined Heat and Power Feasibility Report. In line with Scottish Government *Guidance on Thermal Powerstations in Scotland* we support maximising energy efficiency through the use of waste heat and consider this to be a priority in climate change mitigation. This will help improve the overall efficiency of the plant and indirectly reduce green house gas

emissions. To maximise energy efficiency the guidance recommends that biomass is used for heat-only or in combined heat and power plants. The utilisation of heat should also be considered by developers during site selection to identify the most suitable location for the plant. The status and maturity of heat use from the proposed biomass plant is therefore a material consideration in the determination of the Section 36 application.

5.2 As a small proportion of the fuel will comprise recovered timber, paper and cardboard that remains waste the plant will need to be compliant with the Waste Incineration Directive. The energy efficiency of the plant will therefore be assessed in line with our *Thermal Treatment of Waste Guidelines 2009*.

5.3 In addition to the 100MW of electrical energy generated by the proposed plant further energy will be available through the supply of steam and/or hot water to nearby consumers. Preliminary estimates in the Combined Heat and Power Feasibility Study show potential heat supply volumes ranging from between 67GWh/annum to 120GWh/annum. As part of the heat and power plan Forth Energy have identified a number of potential heat users. Of the potential users identified Nynas Refinery is capable of taking a large proportion of the available heat and has already expressed interest. We note that this has informed the site selection process, with the chosen site located close to the potential heat users in the area.

5.4 The Department of Energy and Climate Change (DECC) has established Quality Assurance for Combined Heat and Power (CHPQA) standards. Using this methodology energy efficiency is calculated as a qualitative index; referred to as the QI value. Good quality combined heat and power is defined by this standard as plants operating with a minimum QI value of 100. *Our Thermal Treatment of Waste Guidelines 2009* has adopted the same methodology to calculate how much energy is recovered from thermal plants. However, the minimum QI value required by our *Thermal Treatment of Waste Guidelines 2009* is less than the DECC good quality standard. If we are minded to issue a PPC permit we will therefore not require the biomass plant to reach the good quality combined heat and power standard. Scottish Ministers should have regard to this when determining the application and use their powers to put other measures in place to secure good quality combined heat and power if required.

5.5 In order to comply with our *Thermal Treatment of Waste Guidelines 2009* the proposed plant will have to be capable of achieving a minimum energy efficiency of 20% on the first day of operation. It is important to note that there is no minimum value for heat export, the 20% can be a combination of electrical and/or heat efficiency. A commitment also has to be made to export heat within 5-7 years of the plant becoming operational. This will be demonstrated through the requirement for a heat plan to be submitted as part of the PPC application. The heat plan will need to provide details of how Forth Energy propose to achieve a minimum QI value of 93 (approx 35-40% efficiency) by the end of the heat plan period. If we are minded to issue a PPC permit we would attach an implementation condition to this effect. As the requirement for a heat plan can be secured through PPC legislation Scottish Ministers will need to determine whether or not they want to replicate the requirement as part of the Section 36 application.

5.6 The Combined Heat and Power Feasibility Study for the proposed biomass plant in Dundee shows that it will be capable of achieving at QI value (93.3) of a mature plant on the first day of operation (Table 4.3). Forth Energy intends to complete phase 1 of the heat network by exporting heat to Nynas by 2015. This will equate to an energy efficiency of ~30% within the first year of operation with a QI value of 94.72. The majority of this efficiency will come from power efficiency of 28.66% with heat efficiency only accounting for 2.02%. The overall energy efficiency of the plant has the potential to increase to 32% as the phases of the heat plan are implemented and other heat users are connected, with heat efficiency accounting for 3.58%. However, even if all phases of the heat plan are implemented the plant will not be capable of providing good quality combined heat and power as the maximum QI value will only be 95.83 (Table 5.6).

5.7 It is important to note that the proposed abatement to reduce nitrogen dioxide emissions from the stack as detailed in the addendum to the Environmental Statement may compromise the plants ability to achieve the overall energy efficiency levels estimated in the Combined Heat and Power Feasibility Study. The estimate of energy efficiency has been based on a higher emissions limit, which may be lower as a result of the proposed abatement measures. This has been acknowledged in the addendum but is not quantified. Although the energy efficiency calculations will need to be updated to reflect the proposed abatement techniques, we are confident that any reduced efficiency will still comply with our *Thermal Treatment of Waste Guidelines 2009*. Scottish Ministers should therefore be aware of the potential conflict between protecting human health by abating nitrogen dioxide emissions, and overall energy efficiency.

5.8 We can confirm that the Combined Heat and Power Feasibility Report includes a draft heat and power plan that meets the requirements specified in Annex 2 of the *Thermal Treatment of Waste Guidelines 200*9. At this stage we are satisfied that the energy efficiency calculations look reasonable and feasible. Based on this information the plant is likely to be consentable on energy efficiency grounds under the PPC regime for this attribute. We will undertake a more detailed assessment of the energy efficiency calculations at the PPC application stage. However, it is important to note that under the PPC Regulations we can only require the Operator to implement what is practicable, technically and commercially feasible.

5.9 We understand that the detailed design of the heat network pipework will not be finalised until the Section 36 application has been determined. However, we note that an indicative pipeline routing plan is proposed. To ensure that the plant is designed and constructed to enable the export of both heat and electricity **Scottish Ministers may wish to consider attaching a condition requiring details of this to be submitted prior to development commencing on site.**

6. Noise

6.1 Noise issues related to operational activities will be controlled by us as part of the PPC permit. We will put measures in place to ensure that there is no reasonable cause for offence from noise emissions at sensitive receptors out side the site boundary. To control noise from within the PPC installation boundary we will impose a requirement for noise monitoring as part of the PPC permit, and in

some circumstances may impose noise limits.

6.2 It should be noted that the PPC installation boundary will not include the berth within the dock, but may include the equipment to unload the fuel such as dedicated grab cranes and hopper/conveyor arrangements as part of the stationary technical unit. Notably, we will not seek to control noise emissions from ships or non plant specific noise sources within a common-use berth or vehicle movements onto and off the site. Scottish Ministers should therefore ensure that appropriate measures are in place to control noise generated within the common-use berths.

6.3 We are satisfied that the potential noise impacts have been adequately addressed. Noise sensitive receptors have been identified and the predicted noise levels raise no concerns at this stage. We will undertake a further more detailed analysis of noise as part of the PPC application to ensure that the Best Available Techniques will be implemented.

7. Flood risk

7.1 We are satisfied that the design of the proposed infrastructure will not place people and property at flood risk or exacerbate flooding elsewhere.

7.2 As detailed in the flood risk assessment the estimated 1 in 200 year (0.5% annual probability) still flood level is 4.07 mAOD. This level was provided to the consultant by us and does not take into account the potential effects of wave action, storm surge, funnelling or local bathymetry at this location. The 1 in 50 year (2% annual probability) storm surge is estimated to be 5.01 mAOD. As the ground levels across the site range from 4.15 - 5.25 mAOD, the site is not at risk from coastal flooding, however, the effect of storm surge and wave action combined with an extreme tidal event may still pose a flood risk. To mitigate the potential risk of flooding from storm surge the following measures are proposed:

1 Sensitive plant equipment will be bunded and/or located above 5.01 mAOD; and
2 Non-sensitive equipment and buildings located below 5.01 mAOD will be built to be flood resilient.

7.3 We are satisfied that the proposed mitigation measures will offer an adequate level of protection. However, our preference would be for sensitive plant equipment to be located above 5.01 mAOD rather than bunded. We therefore **request that a condition is attached** to ensure that sensitive plant equipment is located about the 5.01 mAOD level. To assist, the following wording is suggested:

Unless otherwise agreed with the planning authority, in consultation with SEPA, the flood risk mitigation measures outlined in the Flood Risk Assessment (Appendix F) shall be implemented. In addition to this, sensitive plant equipment shall be located above 5.01†mAOD.

Reason: To protect people and property from flood risk

7.4 This advice is supplied to the Scottish Government by SEPA in terms of Section 72 (1) of the Flood Risk Management (Scotland) Act 2009 on the basis of information held by SEPA as at the date hereof.†

8. Protection of the marine environment

8.1 Process water will be discharged to the River Tay. This process water includes cooling water, boiler blow down, effluent from the water treatment ad other minor discharges. The River Tay is part of the Lower Tay waterbody which is currently classified as being at good ecological status. The adjacent Upper Tay and Carnoustie - Fife Ness waterbodies are also classified as being at good ecological status. The River Tay is also designated as a Special Area of Conservation. Based on the information provided we are satisfied that the discharge will not result in a deterioration of status, and is therefore acceptable in principle. We will consider the potential effects of this in more detail as part of the PPC application. As outlined in Section 14, additional modelling will be required to inform this assessment.

8.2 Please note that the cooling water abstraction will not form part of the PPC installation. This will require authorisation under the Controlled Activities (Scotland) Regulations 2005 (as amended). We are satisfied that the cooling water intake is capable of being consented and has been designed to prevent the entrainment of juvenile fish.

9. Drainage

9.1 Surface water will also be discharged into the River Tay. Prior to discharge this will be passed through an oil interceptor. In addition to this, we recommend that sediment management devices are also incorporated into the design.

9.2 Sewerage from the facility will either be discharged into the public sewerage system or be treated on site by a waste water treatment plan prior to being discharged to the River Tay. As the development is located within an area served by a public sewerage system our preference would be for the sewerage to directed to that system. This is in line with our *Policy and Supporting Guidance on Provision of Waste Water Drainage in Settlements*. We therefore **request that a condition is attached** requiring the development to connect to the public waste water network. To assist, the following wording is suggested:

Prior to the commencement of any works, a scheme to connect to the public waste water network shall be submitted for the written approval of the planning authority, in consultation with Scottish Water, and all work shall be carried out in accordance with the approved scheme.

Reason: to protect people and the environment from the impact of waste water and ensure the development of the public sewerage network.

10. Construction phase environmental management

10.1 We welcome the pollution prevention and mitigation measures set out in chapter 19 and the commitment to develop an Environmental Management Plan. We are

satisfied that the proposed prevention and mitigation measures will offer an adequate level of environmental protection. In order to ensure that these mitigation measures are carried out we **request that a condition is attached** ensuring that no development can commence on site until a full site specific environmental management plan (EMP) has been developed. This should be submitted for approval at least two months prior to works commencing on site. The EMP should incorporate the principles of all proposed pollution prevention and mitigation measures along with detailed method statements. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract (just before development commences) To assist, the following wording is suggested:

At least two (2) months prior to the commencement of any works, a full site specific environmental management plan (EMP) must be submitted for the written approval of the planning authority [in consultation with SEPA] [and other agencies such as SNH as appropriate] and all work shall be carried out in accordance with the approved plan.

Reason: to control pollution of air, land and water.

10.2 We are also pleased to see reference to developing a Site Waste Management Plan, which is now considered best practice. To secure this, we **request that a condition is attached** to any grant of consent which requires a full Site Waste Management Plan to be submitted for the written approval of the determining authority in consultation with us prior to work commencing on site. To assist, the following wording is suggested:

Prior to the commencement of any works, a full site waste management plan shall be submitted for the written approval of the planning authority, in consultation with SEPA, and all work shall be carried out in accordance with the approved plan.

Reason: To ensure that waste on the site is managed in a sustainable manner.

Detailed advice for the applicant

11. Air quality

11.1 As highlighted in Section 2 above, we are concerned that concentrations of nitrogen dioxide in the vicinity of the plant may not be within acceptable limits by 2015. The predicted reduction of 12µg.m^{-3} over a period of 5 years may not be realistic. As explained in Section†18 we are likely to be unable to grant a PPC Permit to enable operation of the plant if European limit values in the area surrounding the plant are not met at the time of determination.

11.2 The following comments apply to the methodology and data presented in the addendum to the Environmental Statement:

1 Uncorrected concentrations: The modelling results use official emission data

for road traffic that assumes that emissions will reduce year-on-year. It is important to note that the assessment has not considered reductions that are a result of measures introduced by Dundee City Council's Air Quality Action Plan – these will be in addition to those predicted by the computer modelling.

2 Background scaling: It is generally assumed that emissions of NO_2 from road traffic will reduce year-on-year, as older vehicles are replaced by newer technologies; however monitoring has shown that NO_2 emissions are not falling as quickly as official sources first predicted. The corrected results therefore include a slightly elevated background concentration that accounts for the uncertainty associated with future reductions in the emissions from road traffic.

3 Janssen methodology: The modelled concentrations have applied an alternative NO_x/NO_2 conversion ratio as detailed in Appendix C of the addendum. The Janssen methodology suggests that the NO_x/NO_2 conversion ratio at the Stannergate is likely to be in the region of 15-20%, and not 70% as recommended by the Environment Agency. The process contribution figure is likely to be lower than the scenarios described in a and b above. Whilst methodology is not formally approved for this type of assessment, it does illustrate the difficulties and uncertainties associated with assessing the impact of the plant on local air quality.

12. Habitats

12.1 As highlighted in Section 3, we consider that the information provided fails to demonstrate that there will not be a likely significant effect on the qualifying interests of the Barry Links SAC. The Scottish Government as Competent Authority will therefore need to undertake a further assessment (an appropriate assessment) prior to determining the Section 36 application.

12.2 We have the following comments on the habitats information contained within the Environmental Statement:

1 The information which makes up the acid and nutrient deposition assessments is scattered through Chapter 9 – Air Quality, Appendix C – Air Quality, Chapter 12- Terrestrial Ecology and Appendix E3 – information to Inform an Appropriate Assessment. This has made it difficult to follow all of the steps undertaken; the basis for all of the information provided; and justification for the final conclusions. For future reference it would be helpful if this information could be provided in a single location.

2 We agree with screening out all of the Natura sites except Barry Links SAC on the basis that they are not acid sensitive.

3 We are unable to find an explanation of why all the SSSIs were screened out. Table 9.4 only lists 2 of them as not being acid sensitive. There are a significant number of the other SSSIs listed in chapter 12 which are

considered acid sensitive, but these do not appear to be considered anywhere, or a justification for screening them out of further assessment. This clarification needs to be provided.

4 Table 9.4 shows ranges for nitrogen derived acid Critical Loads for Barry links SAC. It is not clear where the lower end of these ranges has been taken from as these values do not appear on the APIS site relevant Critical Load entry for Barry Links. This clarification needs to be provided.

5 The Information provided indicates that both the nutrient-N and acid deposition process contribution at Barry Links SAC exceeds the 1% threshold, below which we consider that a conclusion can be made that there will be no likely significant effect from the proposed development on the qualifying features of the SAC. Further information is therefore provided in Appendix E3, which seeks to demonstrate that acid and nutrient deposition associated with the proposed facility will not have a significant effect. However there is no separate environmental supporting data provided to justify this, e.g. local soil or surface water pH data.

13. Flood risk

13.1 As highlighted in Section 7, we are satisfied that the proposed mitigation measures will provide an adequate level of protection from coastal flood risk and storm surge. As the bund would be subject to erosion during an extreme event we have requested a condition to ensure that sensitive equipment will be located above 5.01 mAOD. In addition to this, we recommend that any oils, fuel and other sources of pollution are located above 5.01 mAOD. This could be achieved by landraising within the development site. Compensatory storage for landraising will not be required due to the coastal location.

13.2 We recommend that you consider sloping the raised areas away from the buildings to ensure that surface water is shed away from the outside walls. You should also consider the potential for erosion associated with wave action and where appropriate use resilient materials.

14. Protection of the marine environment

14.1 As highlighted in Section 8, we are satisfied that the discharge into the marine environment is potentially capable of being authorised. However, further modelling will be required as part of the PPC application as detailed below.

14.2 Section 13.5.17 and 13.5.18 of the ES describes the modelled predictions for the thermal plume dispersal and mixing at high water levels. The temperature of the plume 10 m from the discharge is also provided at all stages of the tide. The modelling carried out does not represent worst case conditions and it is not clear how the thermal plume and other effluents will disperse under low flow and low tide conditions shortly before the discharge ceases. We recommend that the modelling is repeated using the worst case input parameters as part of the PPC application. We would typically expect applicants to demonstrate that the discharge will undergo adequate initial dilution (50 times minimum initial dilution as a 95 percentile) and comply with any concentration limits at the edge of the

mixing zone. Please refer to our supporting guidance *Modelling Discharges to Coastal and Transitional Waters*.

15. Drainage

15.1 We have requested a condition in Section 9 requiring the development to connect to the public sewerage system. As the development is located within an area served by a public sewerage system, then foul drainage should always be directed to that system. The same level of environmental protection is unlikely to be achieved if individual or groups of privately owned drainage schemes are set up within towns. This is set out in our *Policy and Supporting Guidance on Provision of Waste Water Drainage in Settlements*.

16. Construction and pollution prevention

16.1 We have requested a condition in Section 10.1 requiring the submission of an Environmental Management Plan (EMP). We recommend that the EMP is submitted at least two months prior to the proposed commencement of development to enable consultees time to fully assess the information. The EMP should incorporate detailed pollution prevention and mitigation measures for all construction elements potentially capable of giving rise to pollution during all phases of construction, reinstatement after construction and final site decommissioning. Full details of what should be included in the EMP can be found on our website.

16.2 In relation to tendering, please refer to CIRIA C648 which states that, “One of the main drivers for environmental improvements is pressure applied by clients through standards laid down in contract documentation. Contracts should specify exact requirements for water pollution prevention in order to encourage high standards and to allow for like for like tender evaluation”.

17. Waste management

17.1 In accordance with the provisions of the “Waste Hierarchy” waste should be prevented or reduced at source as far as possible. You can save money and help the environment by not over ordering materials, using recycled material, minimising waste production during construction. This can be achieved by preparing a Site Waste Management Plan identifying how much waste will be produced, how this will be minimised and what will be done with the waste.

17.2 We have requested a condition in Section 10.2 requiring a Site Waste Management Plan to be developed prior to works commencing on site. Advice on how to prepare a Site Waste Management Plan is available on the netregs website and from Envirowise who also provide free advice on resource efficiency.† Further advice on the reuse of demolition and excavation materials is available from the Waste and Resources Action Programme.

Regulatory advice

18. PPC permit

18.1 The activity will be licensable by us under the Pollution Prevention and Control (PPC) Scotland Regulations 2000. Based on the information provided we are satisfied that the development is potentially capable of being authorised under this regime. However, this is based on the air quality assumptions in the addendum to the Environmental Statement being accurate. There remains a high risk that the Scottish air quality standards and European limit values, particularly those relating to nitrogen dioxide in the vicinity of the Stannergate roundabout, will not be met before the plant becomes operational in 2015. We are likely to be unable to grant a PPC Permit to enable operation of the plant if the European limit values in the area surrounding the plant are not met at the time of determination.

18.2 We will require the best air quality information possible to inform the determination of the PPC application. In the run up period to the PPC Permit application, we therefore advise you to implement a programme of ambient air monitoring to demonstrate that the assumptions and correction factors contained within the addendum to the Environmental Statement are valid.

18.3 It should be noted that the detailed design of the facility has not been included at this stage. We are therefore unable to determine whether or not the plant has been design in accordance with the Best Available Techniques.

18.4 The following issues will be addressed in detail as part of the PPC application:

1 Determination of best available technique under Combustion and LCPD BREF notes;
2 Detailed dispersion modelling and environmental impact assessments;
3 Review of site report;
4 Detailed calculations and assessments relating to emissions and station efficiency;
5 Best practicable environmental option (BPEO) relating to site location;
6 Assessments on CHP potential;
7 Noise issues, emissions, point source emissions, emissions monitoring, and abatement during operation of the plant; and
8 Environmental impacts associated with groundwater and contaminated land

18.5 We generally recommend that the application for the PPC permit be submitted to us at the same time as the Section 36 application. This allows consideration of common details at the same time and should therefore improve the efficiency of the consenting process. As you have chosen not to pursue parallel processing we consider that it is your commercial risk to proceed with a Section 36 application and accept that if air quality does not improve as anticipated in the addendum to the Environmental Statement we are likely to be unable to grant a PPC Permit. In addition to this it is also your commercial risk to accept that any significant changes that are required during the PPC application stage may necessitate a further application or variations to your Section 36 consent.

19. CAR licence

19.1 Authorisation under the Controlled Activities (Scotland) Regulations 2005 (as amended) will be required for abstractions (for cooling water), and any

associated impoundments or engineering activities.

If you have any queries relating to this letter, please contact the undersigned by telephone on 0131†273 7334 or by e-mail angela.burke@sepa.org.uk.

Yours sincerely

Angela Burke
Senior Planning Officer
Planning Service

Ecopy: Michaela Sullivan – Head of Planning, Forth Energy: michaela.sullivan@forthenergy.co.uk