Ms Cathy O'Connor
Assistant Principal Officer
Decarbonisation Policy and Coordination Division
Department of Communication, Energy and Natural Resources
29-31 Adelaide Road
Dublin 2

5th November 2015 Our Ref: SCP150801.1

Re: Proposed Bioenergy Plan SEA Scoping

Dear Ms. O'Connor,

The EPA acknowledges your correspondence, dated 25th September, in relation to the Strategic Environmental Assessment Scoping for the proposed Bioenergy Plan, referred to hereafter as the "Plan". We welcome this opportunity to make a submission at this stage of the Plan preparation and SEA process.

While we welcome the preparation of the Plan, it will be important to ensure the Plan is aligned with relevant existing national sector related targets and commitments. In addition, the Plan actions and any associated sub actions including their implementation should not conflict with relevant environmental protection obligations. These include in particular air quality, climate change - mitigation/adaptation, human health, water quality, biodiversity and landscape.

A number of key national level plans are likely to be relevant in the context of the Plan. These include:

- Food Wise 2025 – DAFM
- National Forestry Policy Review – DAFM
- Ireland's Forestry Programme – DAFM
- Rural Development Programme – DAFM
- National (Climate) Mitigation Plan (Initial Stages)
- National Renewable Electricity Policy Framework (Initial Stages)
- National Policy Framework on the development of Alternative Fuels Infrastructure For Transport
- Integrated-Implementation Plan 2013-2018 for the Greater Dublin Area – (NTA)

A number of these Plans have previously been subjected to SEA and AA. The relevant targets and commitments in the adopted plans as well as the findings of the SEA and AA should be taken into account in the preparing the Plan and in undertaking this SEA. Where targets already exist in these Plans/Programmes, these should be reflected in the Plan.

Previous EPA submissions in relation to Food Wise 2025, the Rural Development Programme, Forest Policy Review, Ireland's Forestry Programme, and the Green Paper on Energy Policy in Ireland will be provided on request. The relevant aspects of these submissions should also be taken into account in developing the Plan and in undertaking the SEA.

Overall Governance and Implementation
Consideration could be given to including a separate Section on Governance and Implementation in the Plan. Provisions should also be included for robust and transparent mechanisms to oversee the implementation of the Plan actions and commitments.

The inclusion of a specific commitment to establishing a steering group, with relevant sub groups as appropriate, to oversee and review the Plan implementation should also be considered. In this context, the establishment of an Environmental Working Sub Group with an associated work programme should also be considered. This would include provisions for oversight of monitoring of the environmental performance of the Plan and a commitment to nay associated reporting. The model set up by for the Implementation stage of the Offshore Renewable Energy Development Plan (OREDP) is a model worth considering in this regards.

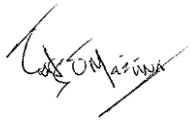
SEA Process and SEA Guidance
The SEA process should in particular identify and assess any adverse impacts likely to result from the proposed actions considered. The focus should be on addressing significant issues and related likely significant effects. Where significant adverse effects on the environment are identified, specific mitigation measures to prevent reduce and as fully as possible offset these effects environment should be identified. These should be reflected as commitments in the Plan.

The EPA has prepared a range of SEA Guidance resources including an SEA Scoping guidance document (updated regularly), an SEA Pack, SEA Process Checklist, SEA Spatial Information Sources and guidance on Integrating Climate Change into SEA, are available on the EPA website and should be considered in the preparation of the SEA. Recently published Guidance on Developing and Assessing Alternatives in SEA will also be relevant in the context of the Plan. These SEA resources can be consulted at: http://www.epa.ie/pubs/advice/ea/

Responses to the specific SEA Scoping Questions posed in the Scoping Report are provided in Attachment 1 of this submission. Topic specific comments, predominantly relating to Air Quality and overall observations on the Scoping Report are provided in Attachment 2 of this submission.

We look forward with working closely with DCENR and the SEA/AA team in the on-going preparation of the Plan and the associated SEA process. Should you have any queries or require further information in relation to the above please contact the undersigned. I would be grateful if an acknowledgement of receipt of this submission could be sent electronically to the following address: sea@epa.ie.

Yours Sincerely



Tadhg O'Mahony
Senior Scientific Officer
SEA Section
Office of Environmental Assessment
Environmental Protection Agency
Regional Inspectorate
Inniscarra, County Cork

Attachment 1 – Responses to Scoping Questions

Q1 – Based on the plans, policies and programmes outlined, are there any other key relevant international, national or regional plans, policies or programmes that should be considered in the SEA Environmental Report on the National Mitigation Plan

Section 4: Other relevant Plans and Programmes:

Table 4.2 - European

- European Landscape Convention

Table 4.3 National:

- Forest Policy Review : Forests, products and people- Ireland's forest policy- a renewed vision (DAFM)
-
- Draft Transport Strategy for the Greater Dublin Area 2016 – 2035 (At consultation).

- National Policy Framework for alternative fuels in transport (DTTAS/DCENR) - Recently commenced.

Note: National Peatland's Strategy (DAHG) is currently in Draft

Q2 – Do you agree with the list of potential significant effects that have been identified? Should any be added or removed?

Section 5.4 – Key Environmental Considerations arising from the Bio Energy Plan

We note the key environmental issues shown in *Table 5.1 Scoping of SEA Issues*.

Section 5.4.2 - Potential Impacts
"The infrastructure which is used to generate the heat or electricity also has the potential to impact on the environment as a result of increased traffic volumes, decreased greenhouse gases, noise, odour, visual intrusion etc."

Should this be *increased GHG emissions,* potentially due to traffic and combustion of materials which would otherwise have contributed to carbon sequestration in the source ecosystem? The direct environmental impact of the emission reduction achieved through measures under the Plan may be limited, due to atmospheric concentrations of GHG being determined by global processes.

Table 5.2 –Bio Energy Actions and Enablers –Demand Measures

Demand Measure 1 (RHI) and 2 (REFIT 3): The positive transport effect may be offset, at least partially, by the need to transport more bulky materials (due to the intrinsic lower energy density of some bioenergy fuels) increasing traffic volume. There may also be issues as regards household storage capacity, requiring more frequent delivery of fuels.

For *Demand Measure 5 (BOS):* Measures which enable higher efficiency may reduce overall fuel demand, and enable BOS targets to be met within existing biofuel supply constraints.

Table 5.3 –Bioenergy Actions and Enablers- Supply Measures

Supply Measure 7: Continued Support of the Afforestation Programme: Site/ catchment specific assessment is likely to be required to determine the positive or negative impacts of land use and land management change towards afforestation. See also commitments under DAFM's *Forest Policy Review : Forests, products and people- Ireland's forest policy- a renewed vision* and - *Ireland's Forestry Programme 2014 -2020* and in the associated SEA /AA.

Supply Measure 7 and 8 (Bioenergy Ireland): This needs to be further explained in the context of the nature and extent of the indirect positive impacts are envisaged.

Supply measure 10 (Animal By-products): Positive impacts may also potentially include the recycling of carbon and nutrients to agriculture and bioenergy lands. This is in the context of the need for risk of disease spread to be considered.

Table 5.6 Scoping of SEA Issues:
SEA Issue: Soil and Land Use: Changes in the carbon stocks, especially within biomass, litter and soils should be considered.

Potential Additional Issue: Specific mention of *peatlands and risk to ecosystem services and carbon stocks* with planation of biomass and bioenergy crops should be considered. This is in the context of the possible requirements for drainage and peat extraction to facilitate afforestation. See also *Draft National Peatlands Strategy - Forestry Principles NPS P9, NPS P10, NPS P11 and Forestry Action NPs A8.*

See also specific observations under *Attachment 2 –Air Quality*, to this submission.

Inter relationships between environmental topics
An important aspect will be the consideration of the inter –relationships between the relevant SEA Issues included in Table 5.6

Section 5.6 –Parts of the Bioenergy Plan to be assessed
The range of the relevant proposed Measures should be examined in the context of possible sub Measures/ Actions potentially required to facilitate implementation and delivery of the proposed measures. This is likely to be informed by considered of suitable alternatives within the SEA process.

Q3 – Are there any other significant information sources that should be considered?

Section 6 – Preliminary Baseline

Table 6.1 Baseline Data Sources and Extent of Assessment

Under "*Water*", the EPA's *WFD Application* available on EDEN for public bodies may be useful to consider. In particular in relation to any proposed activities from agriculture or forestry sectors which may impact on water quality status or associated designated biodiversity features (protected species, designated habitats).

The next State of the Environment Report for Ireland is currently being prepared by the EPA and is expected to be published in Q3 2016. Information on Ireland's Environment can be found at:
http://www.epa.ie/irelandsenvironment/#.Vi9TftCvlaQ
Air Quality in Ireland 2014, (EPA, 2015) sets out the most recent status in each of the four air quality zones in Ireland. This report is available at:

http://www.epa.ie/pubs/reports/air/quality/
A number of useful reports on air quality indices and health related aspects are also available for download at the same link.

Database of SEA Spatial Information Sources
A list of available SEA Spatial Information Sources is available on the EPA website and should be considered in the preparation of the SEA. This can be consulted at the following address: http://www.epa.ie/pubs/advice/ea/

Q4 – Do you have any suggestions in relation to the overall approach to alternatives?
Section 7.1 – Consideration of Alternatives

Recent guidance on *Developing and Assessing Alternatives in SEA* is available at: http://erc.epa.ie/safer/iso19115/displayISO19115.jsp?isoID=3046.

In considering Alternatives reference should be made to key relevant national sector Plans and Programmes previously mentioned in this submission. This is particularly relevant to those Plans and Programmes for which SEA \has already undertaken and where commitments and targets have already been adopted.

Q5 – Do you have any comments regarding the draft SEA Objectives presented?

Section 7 – Proposed Framework for Considering Effects

Table 7.1 –Draft SEA Environmental Objectives

The SEA Objectives should be set in the context of the role of the Plan Measures and Actions in contributing towards the key relevant environmental objectives.

Section 7.3 - Impacts, Mitigation and Monitoring
The proposed monitoring programme to be established for implementation should include relevant SEA Environmental objective linked Targets and Indicators. A commitment should also be included to report on the environmental aspects of the implementation of the relevant Plan Measures. This could be linked to interim review(s) of the Plan.

Attachment 2 – Specific Comments

Key Sector Plans/ Programmes

A number of key relevant sector plans/ programmes have already been subject to SEA/AA and these should be reflected in the environmental assessment and the Plan. The key findings of these previous SEA/AAs should be taken into account during the Plan making process.

Air Quality Issues for Consideration in preparation of the Bioenergy Plan and associated SEA:

Impact on fine particulate levels in the atmosphere:

On-going research has indicated the significant public health impact associated with particulate matter, and in particular $PM_{2.5}$, which is associated with both fossil fuel and biomass combustion activities. A number of references are provided below. Given the significant health impacts associated with particulates, the SEA should address particulate pollution in detail. As detailed in the EPA report '*Air Quality in Ireland 2013 – Key Indicators of Ambient Air Quality*' a key future challenge for Ireland is in decreasing our PM_{10} and $PM_{2.5}$ concentrations to below that of the WHO air quality guideline values.

The World Health Organisation[1] has stated in relation to particulate matter that 'there is little evidence to suggest a threshold below which no adverse health effects would be anticipated', thus any measure that is adopted to decrease concentrations of PM in ambient air should result in positive health effects for the general population. The OECD[2] has completed a study (Hunt, 2011) assessing policy interventions to address health impacts associated with air pollution (and pollutants in other media). This study concentrated on air policy measures in relation to particulate and ozone and, based on review of various cost-benefit analyses, concluded that the annual value of benefits to health from particulate reductions were consistently positive across all policy variants. EU funded research[4] on the effects of short term (i.e. daily average) increases in particulate matter levels on human health found increased mortality rates in sensitive receptors, including increased deaths related to diabetes, heart disease, lung disease, bronchitis and emphysema. Another EU study[5] (EC, 2014) of over 100,000 people has identified a strong link between long term exposure to particulate matter and heart attacks/angina.

Impact on Other Air Quality Related Pollutants

Combustion of biomass will also result in emissions of other pollutants such as nitrogen oxides (NO_X), sulphur dioxide (SO_2), carbon monoxide, polycyclic aromatic hydrocarbons (PAH) and PM_{10} particulates. The EPA report '*Air Quality in Ireland 2013 – Key Indicators of Ambient Air Quality*' stated that future PAH concentrations in Ireland will likely depend on the choices of fuel for home heating that is used by the public in Ireland in the coming years. The report notes that peat, wood and biomass are high in PAH, especially when burnt inefficiently. The overall impact of switching to biomass on the concentrations of these pollutants in the atmosphere should be considered as part of the SEA.

2013 review of EU Air Policy and Subsequent Clean Air Policy Package

See http://ec.europa.eu/environment/air/review_air_policy.htm) for details of the review process and http://ec.europa.eu/environment/air/clean_air_policy.htm for the resulting EU

Clean Air Policy Package as adopted on 18th December 2013. Relevant aspects of this package include:

- A revised National Emissions Ceiling Directive which now includes ceiling emission levels for $PM_{2.5}$ and methane up to 2030 as well as revised ceilings for SO_2, NO_X, NMVOC and NH_3.

- A new directive for Medium Combustion Plant (1 – 50 MW) which sets emission limits for a range of pollutants.

- Proposed acceptance of the Amendment to the 1999 Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution (CLRTAP) to Abate Acidification, Eutrophication and Ground-level Ozone.

Clean Air Strategy for Ireland and the Clean Air for Europe Directive

The Department of the Environment, Community and Local Government should be consulted in relation to their proposed preparation of a Clean Air Strategy for Ireland in the coming years. Consideration should also be given to the requirements of the Clean Air for Europe (CAFE) Directive which outlines the obligation to maintain or improve air quality in Ireland (and across the EU).

$PM_{2.5}$ National Exposure Reduction Target

To meet the $PM_{2.5}$ NERT (National Exposure Reduction Target) Ireland must reduce $PM_{2.5}$ emissions by 10% by 2020. This should be included as part of any consideration of the impacts of the plan. In particular the potential for emissions abatement techniques or technology to address increased particulate emissions due to biomass should be analysed. Polices encouraging the use of biomass should be tailored to ensure facilities and consumers are directed towards efficient combustion methods and biofuels with the lowest emissions.

Potential Persistent Organic Pollutants (POPs)

Requirements for the reduction and/or elimination of unintentionally produced Persistent Organic Pollutants: The Stockholm Convention on Persistent Organic Pollutants entered into force for Ireland in 2010. Article 5 of the Convention requires Ireland to reduce or, where feasible, eliminate emissions of unintentionally produced persistent organic pollutants listed under Annex C of the Convention. Furthermore, Article 6 of Regulation (EC) No. 850/2004[5] requires the reduction with a view to elimination of releases of Stockholm Convention Annex C substances with the addition of polycyclic aromatic hydrocarbons. The use of fuels containing biomass for residential heating is likely to result in the production and emissions of these persistent organic pollutants and hence all relevant plans must take into account the State's obligations under the Stockholm Convention relating to the reduction, minimisation or elimination of releases of these substances.

The relevant Aspects of the above under Air Quality should be considered in preparing the Plan and in the scope of the SEA.

Additional Specific Observations on the Scoping Report:

Scope of the Plan

The Plan should clearly set out the contribution each component element will make to meeting the RES targets. It is difficult to assess the potential environmental impact without clarity on aspects such as the scale of implementation, phasing of implementation, criteria for location of resources relative to markets etc.

The plan should also define, where possible, the intended post 2020 trajectory. It makes it difficult to assess the potential long term environmental impact of the plan. What capacity infrastructure is envisaged? Is it envisaged that the bioenergy sector continues to grow, on the basis of investments made up to 2020.

Consideration should be given to alternative renewable energy sources for RES-H, and the potential impact of current and emerging technologies on demand for bioenergy RES-H.

Economic Benefits
An analysis of the likely economic benefits envisaged under the Bioenergy Plan will be important as these will impact on the resources available to the stakeholders to implement mitigation measures to address and avoid adverse environmental impacts.

This section would appear to rely on an optimistic projection of growth in the sector and increases in energy costs across the market. This may need to be updated, where appropriate, to reflect more realistic projects.

From analysis in the Preliminary Draft Bioenergy Plan it is predicted that 850ktoe of biomass will be supplied to the market (from domestic supply) by 2020 at a price of €450 toe-1. The "current market price in the Plan is €250 toe-1. The 80% increase in biomass fuel price to meet this target may need to be reviewed.

In addition, the proposed €1.5billion in direct investment is likely to be largely contingent on a realistic expectation of returns on this investment. In this analysis this would appear to be based on an expectation of a high price for bioenergy.

It is not clear that the saving from biomass in commercial and industrial boilers is a real saving in the absence of comparable oil or gas prices.

Energy Storage Systems and Solar PV
The rapid reduction in costs of Solar PV coupled with the emergence of highly competitive small scale battery storage systems have been described as having the a potentially disruptive impact on energy supply.

Heat pump technologies (air and ground systems) have been demonstrated to be competitive with conventional heating systems in terms of heat delivery and operational costs.

In combination, it is possible that combined solar pv/heat pump systems may be cost competitive with bioenergy for heating at residential and small business scales, and may provide energy security, air quality and other environmental co-benefits which challenge the roll out of bioenergy in this sector.

BECCS

As Ireland will need negative CO_2 emissions at scale, some consideration might be given to the use of bioenergy with carbon capture and storage (BECCS).

Biomass Waste from Hedgerow and Scrub management

The area of hedgerow in Ireland is estimated at 272kha, equivalent to 37% of the total forest area. (NFI 2012). The management and maintenance of these lands is generally the responsibly of farming sector, with the exception of roadside hedgerow, which can also be maintained by local authorities and other bodies.

Coppicing of Hedgerow and Laying New Hedgerow are important elements of the DAFM environmental management incentive payments under GLAS.

Burning has often been used as a management option for the control of scrub on underutilised grazing land. The DAFM Code of Practice on Proscribed Burning sets out detailed advice on controlled burning, including the advice that mechanical removal is more often more effective than fire as a control measure.

Note that S.I. No. 286/2009 Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009, puts in place requirements in relation to the burning of agricultural residues, including wood, trees, tree trimmings etc., generated by agricultural practices. The regulations were amended in 2013 introducing a general prohibition on burning of agricultural residues from January 1st 2016.

In light of these general points, there may be an opportunity to explore the potential for sustainable roadside hedgerow and scrub management in the context of a local potential bioenergy source. This could be undertaken as a pilot project, subject to environmental constraints and legislation. This would be subject to consultation with DAHG (NPWS), the local authority and land owners.

The relevant aspects of the above should be considered in preparing the Plan and in undertaking the SEA.

Air Quality References

1. WHO (2005). Air Quality Guideline. Global update 2005. World Health Organisation Regional Office for Europe. http://whqlibdoc.who.int/hq/2006/WHO_SDE_PHE_OEH_06.02_eng.pdf
2. Hunt, A. (2011), "Policy Interventions to Address Health Impacts Associated with Air Pollution, Unsafe Water Supply and Sanitation, and Hazardous Chemicals", OECD Environment Working Papers, No. 35, OECD Publishing. http://dx.doi.org/10.1787/5kg9qx8dsx43-en
3. European Commission, Science for Environmental Policy, 26 June 2014, Issue 378.
4. European Commission, Science for Environment Policy, 1 May 2014, Issue 370.
5. Regulation (EC) No. 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC