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See below for Submission details.

Attachments are displayed on the following page(s).

Submission by Dr. Colin Doyle

Comments on application by Amazon Data Services Ltd Drogheda for an Industrial Emissions Licence
Reg. No. P1181-01

1. Air Quality Impact

The EIAR and the revised Air Emissions Impact Assessment (attachment 7-1-3-2) provide a detailed description and modelling of the potential air quality impacts. The analysis appears to have been conducted to a high standard and could be relied upon as the basis for a decision on licensing.

My only concern on air quality is that predicted concentrations of NO_2 are relatively high, and in the event of prolonged operation of backup generators it is likely that air quality standards would be exceeded. I note that a derogation from emissions limits of the MCP directive is claimed on the basis of less than 500 hours operation per year for the backup generators. As discussed in the EIAR, it is not expected that these generators will be used other than in the event of a grid fault, and the modelling was therefore based on a maximum of 100 hours operation per year.

Situations where prolonged operation of the generators could conceivably occur would be if there is a period of strain on the national grid and large energy users may be asked to switch to emergency backup. I note that the Meath County Council planning conditions do not place a limitation on the annual hours of operation for the generators (LB 191735, condition 13).

If the EPA can set a limit on operation hours of the backup generators in the Industrial Emissions licence then the potential for limit exceedance could be adequately controlled in this way. If this is not possible, then in accordance with the precautionary principle it should be assumed that the generators may operate for up to 500 hours per year. With the stated stack emissions, there would evidently be a significant breach of the hourly and annual air quality standards. To mitigate this potential impact, appropriate controls should be stipulated, which would require scrubbing of the exhaust gases.

2. Climate Impact

In contrast to the AQ assessment which appears to be of a high standard, in my opinion the climate impact assessment in the EIAR is highly misleading, with significant omissions, and overall does not reach an acceptable standard. The licence application should be refused on this basis.

I am aware that the Industrial Emissions licensing process does not set limits on direct or indirect GHG emissions. However, this is within a regulatory framework where it is assumed that the potential climate impacts have been adequately addressed in the EIAR and planning process. This is not the case for the proposed development. It appears from the planning records that Meath County Council was misled as to the renewables credentials of the proposed development, and believed that:

> "The plan to achieve 100% renewable energy will result in a very low environmental impact. The development in general has low environmental impacts in terms of water, air emissions and creation of waste" (Planners Report, section 4)

Also on page 20 of the planning report under Air Quality and Climate the following appears:

> "In terms of climate it is stated that the impact is deemed to be short term and not significant in relation to Ireland's obligations under the EU 2020 target".

The reference to the EU 2020 target was correct, but the planner was misled into thinking that this was sufficient to ensure no impact and that planning could be granted. But this ignored the significant impact which the proposed development would have on national climate action plans which were in existence at the time of the application.

Meath County Council would appear to have accepted the narrative in the EIAR that since emissions would fall within the EU ETS there was no need to analyse the impacts further. There were consequently no conditions in the planning permission regarding GHG emissions.

The EPA was not one of the prescribed bodies during the original planning application. However, since the EIAR has now been submitted in support of the application for the Industrial Emissions licence I submit that the EPA is legally obliged to carefully review this document, taking due account of my analysis and criticisms outlined below.

2.1 Failure to have Regard to CAP 2019

The fundamental flaw in chapter 9 of the EIAR is that the climate impact assessment did not address the national policy as set out in Climate Action Plan 2019 (CAP 2019), which was the guiding national policy at the time of the original planning application.

The applicant was aware of the national legal and policy framework when submitting the original application, as this was referred to in Chapter 9, page 4 of the EIAR. Climate Action and Low Carbon Development Act 2015 had introduced the legal basis for national carbon budgets, which included emissions from operators in the ETS. Climate Action Plan 2019 (CAP 2019) set out indicative sectoral targets for 2030.The inclusion of emissions from the Irish ETS sector in national policy was quite clear in CAP 2019:

> "A carbon budget will be the total amount of emissions which can be emitted during a five-year period and will be calculated on an economy-wide basis, i.e. the Emissions Trading System (ETS) and the non-ETS sectors." (CAP 2019, p. 38)

CAP 2019 described a GHG reduction plan, which would require reductions in both the Non-ETS sectors, and the ETS sectors. This specific national reduction requirement for the Irish ETS sector was a new development in national strategy. Previously, the Irish ETS sector was left to its own devices within the EU ETS. Under this change of policy the strategy required substantial emissions reductions from Electricity and Industrial operators in the ETS in order to achieve national targets.

The inclusion of the ETS sector in CAP 2019 targets was in accordance with Climate Action and Low Carbon Development Bill 2015, which required the minister to prepare a national emissions mitigation plan and sectoral mitigation measures. The definition of "emissions" in the act included all emissions in the state:

> "emissions" means, in relation to greenhouse gases, emissions of those gases into the earth's atmosphere attributable to industrial, agricultural or other human activities in the State;

CAP 2019 set out a framework for national sectoral targets, with a plan to control emissions from the electricity sector to between 4 and 5 million tonnes GHG by 2030. For operators within the EU ETS it implied that in addition to compliance with EU ETS rules, there would be a national effort to achieve specific national reduction targets. Indirect emissions of GHG due to the proposed development would have had implications for achieving the national target set out in CAP 2019, but this was not addressed in the EIAR.

2.2 Understatement of Climate Impact

The procedure for assessing climate impact in the EIAR was simplistic and misleading. The impact was presented as a percentage of total national emissions. Emissions were calculated on an electrical load of 48MW and a grid emission factor of 436.6gCO_2/KWh (in 2016), giving an estimated 183,372[1] tonnes GHG/year, which represented 0.3% of national emissions. On this basis it was concluded that the impact was "long-term, negative, and imperceptible impact on climate". This methodology presented the impact in the lowest possible numerical terms. Similarly, the cumulative impact of the whole site was presented as a percentage of total national emissions, and was stated to be 0.9%.(Ch 16, p8). The cumulative impact was described as follows:

> "The cumulative impacts to air quality and climate from simultaneous operation of the proposed and indicative future developments at the site are deemed ***long-term, not significant*** in terms of significance and ***negative*** in terms of quality (following the EPA terminology for description of effects in EIA Reports)."

It is impossible to reconcile the above descriptors with emissions of 0.9% of total national emissions, which would be 540,000 tonnes CO_{2eq} per year. Such emissions would have to be classed as "significant" by any criteria, including the simplistic criteria used in the EIAR.

2.3 Omission of CAP 2019 Targets from Impact Assessment

The assessment in the EIAR ignored the implications of sectoral targets in CAP 2019. Indicative targets were set in CAP 2019 for the Irish Electricity sector of between 4 and 5 MtGHG/year in 2030 (CAP 2019 p. 19). It would have been highly relevant to have expressed the impact of the proposed development as a fraction of this target range.

Indirect emissions due to the proposed development would be 3.7 to 4.6% of the indicative CAP 2019 target range for 2030. Regarding cumulative impact of the overall site, indirect emissions would have been 11 to 14% of the indicative target range for 2030.

Under no circumstances could such a scale of impacts as the above be described as "imperceptible", "not significant" or "slight". Such emissions would have profound consequences for national climate policy, and this aspect should have been properly considered and discussed in the EIAR.

[1] Calculation of emissions based on grid emission factors is questionable for new large energy users, as discussed later

2.4 Climate Policy Developments Since 2019

The EIAR was originally prepared in 2019, and the EIAR submitted with the Industrial Emissions licence application has not been updated to have regard to significant legal and policy developments in the interim.

Climate Action and Low Carbon Development (Amendment) Bill 2021 set the legally binding objective of achieving a 51% reduction in national emissions by 2030 (sum of all sectors including ETS).

Sectoral Emissions Ceilings and budgets were published in September 2022, under which indicative emissions from the Electricity sector in 2030 were projected to be just 3 million tonnes CO_{2eq}. The indirect emissions from the proposed development would be 6% of this indicative total emissions from the electricity sector in 2030, which means that the emissions from the electricity sector would be consumed by just sixteen similar developments. The cumulative indirect emissions from the entire site would be 18% of the indicative emissions from the Electricity sector in 2030, which means that six such developments would exceed the entire national emissions in this sector.

Climate Action Plan 2023 (CAP 23) has also been published in the interim, which includes a range of measures to achieve the sectoral carbon budgets.

2.5 Claims of Renewable Energy

In Chapter 2, page 14 of the EIAR claims are made regarding the sustainability of the proposed development

> "…… the Operator has a long-term commitment to achieve 100% renewable energy usage. On April the 8th 2019, the Operator announced the offtake of 100% of the output from a new 91MW windfarm. Further, on August 1st 2019, the Operator announced the offtake of 100% of the output from a new 23.2MW wind farm in County Cork. These projects will support Ireland meeting its energy policy targets out to 2030. The Operator's current electricity supplier in Ireland sources and retires renewable Guarantees of Origin (GOs) for every megawatt-hour (MWh) the Operator uses. For every MWh a renewable project generates, it produces a GO, which is used to track renewable production and quite literally guarantee its origin (these GOs are subsequently retired to ensure each is only used once)."

It would be incorrect to conclude from this statement that the development will be sustainable by virtue of its commercial procurement of renewable electricity. The proposed development will be powered by a combination of mainly fossil fuel generation of currently approximately 63% and around 37% renewable electricity from the national grid, just like all electricity consumers. Corporate power purchase agreements (CPPAs), or purchase of windfarms, do not necessarily represent additional renewables on the grid which could validly be claimed as GHG offsets. GOs represent an additional market support for renewables and do not in any sense constitute a GHG offset.

While CPPAs present benefits for the development of renewables, it does not follow that one can claim them as an offset against additional corporate GHG emissions. CPPAs provide a valuable support for renewable energy projects, as they can achieve higher prices than in the public auction market, and they also provide financial security for the corporation purchasing the power, as it is a

form of price hedging. There is no requirement for a CPPA to demonstrate additionality. National policy on data centres expresses a preference for projects with CPPAs demonstrating additionality. This means that the CPPA should enable a renewables project to be developed which otherwise would not happen, and the resulting emissions avoided are equal to or greater than the other emissions caused by the CPPA purchaser.

It is a matter of public record that Amazon does not disclose the renewable energy supply of specific operations in individual countries (FW22A/0308), and that it does not present proof of additionality of claimed renewables. Its corporate renewables accountancy rules[2] permit Amazon to count all purchased renewable electricity as contributing to its renewables total, without any requirement to demonstrate additionality. As well as including CPPAs, they also count the % renewables on the supply grids feeding their operations as renewables attributable to Amazon.

The windfarms referred to in the EIAR are presumably Esk in Cork and Meenbog in Donegal. As can be verified from the planning records Amazon Esk windfarm (Cork County Council Ref 11/5276, 14/5602) is currently operating and had been in the development pipeline in Ireland for many years before the planning application for the proposed development. The 91 MW Meenbog windfarm has been in planning since at least 2013 when initial consultations were held with Donegal County Council. A planning application made in 2015 was refused. A subsequent application by Planree Ltd. on a reduced site in 2017 was granted (ABP-300460-17). These two windfarms would have inevitably become operational in any event and could not possibly be claimed as additional national renewables or as an offset by Amazon.

Also of concern is the misleading manner in which Amazon presents the same windfarms as benefiting different projects. For example the same two windfarms mentioned in the EIAR for the Proposed Development were also put forward in support of another data centre planning application (Meath 21663, ABP-310729-21) which was granted permission, and a proposed data centre in Fingal (FW22A/0308, ABP-318180-23), which is currently on appeal at ABP.

The energy efficiency benefits outlined in section 2.4.1 will accrue outside the state, and are not relevant for consideration of compliance with national policy or targets. Overall, in the absence of any evidence to the contrary, the implied renewables sustainable operation of the Proposed Development as presented in the EIAR must be dismissed as greenwashing.

2.6 Consideration of ETS

The EIAR refers in a number of places to indirect and direct emissions occurring within the EU ETS, and consequently there would have been no impact on Ireland's EU target for 2020. This is true, but it diverts attention from the fact that Irish operators in the ETS can comply with all EU ETS rules, but this does not imply that our national targets will be achieved. There is no procedure within the EU ETS to require operators to aim for any specific national targets.

2.7 Note on Calculation of Emissions

It is my view that when calculating the indirect GHG emission from new electrical loads it should not be based on the existing or projected future grid emission factor, as this does not represent the

[2] Ernst & Young Independent Accountants Review Report, (Schedule of Sustainability Indicators) 13th July 2023

physical reality of the effect on the power system. Until such time as the state has achieved 100% renewable electricity supply, the net effect of the proposed development will be an additional load which will require an additional base load generation of 48MW. This must be supplied from fossil fuel power plants, as renewables cannot suddenly appear to compensate for the load. Emissions calculations for new large energy users should therefore be based on the fossil fuel mix on the grid, and should not rely on any assumption of future renewables on the grid. This approach correctly identifies the physical impact in terms of the expected increased GHG emissions. The exception would be where a proposed development will replace an existing development, in which case it would be valid to use grid emission factors which will correctly identify changes in GHG emissions relative to the the baseline.