

The Secretary  
An Bord Pleanála  
64 Marlborough Street  
Dublin 1

Colin Doyle  
12 Cottage Gardens  
Ennis  
Co. Clare  
10th October 2023

**Fingal FW 22A/0308**

**Appeal against grant of permission by Fingal County Council for Universal Developers LLC  
data centre at Cruiserath Road, Dublin 15**

A Chara,

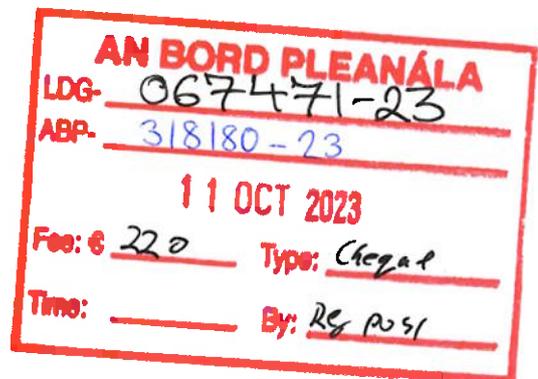
I wish to appeal against the decision of Fingal County Council to grant permission to Universal Developers LLC for a Data Centre development at Cruiserath, Dublin 15. I set out the grounds for my appeal in the document attached.

I enclose a cheque for €220, and a copy of my original submission acknowledgement from Fingal County Council.

Mise le meas,



Colin Doyle





Doctor Colin Doyle  
12 Cottage Gardens,  
Station Road  
Ennis  
Co. Clare  
V95HT3V

Date: 31 January, 2023

ACKNOWLEDGEMENT of RECEIPT of SUBMISSION or OBSERVATION on a  
PLANNING APPLICATION

**THIS IS AN IMPORTANT DOCUMENT!**

KEEP THIS DOCUMENT SAFELY, YOU WILL BE REQUIRED TO PRODUCE THIS  
ACKNOWLEDGEMENT TO AN BORD PLEANALA IF YOU WISH TO APPEAL THE  
DECISION OF THE PLANNING AUTHORITY. IT IS THE **ONLY** FORM OF  
EVIDENCE WHICH WILL BE ACCEPTED BY AN BORD PLEANALA THAT A  
SUBMISSION OR OBSERVATION HAS BEEN MADE TO THE PLANNING  
AUTHORITY ON THE PLANNING APPLICATION.

PLANNING AUTHORITY NAME: FINGAL COUNTY COUNCIL

PLANNING APPLICATION REFERENCE NO. **FW22A/0308**

A submission/observation has been received from Doctor Colin Doyle, in  
relation to the above planning application.

The appropriate fee of €20.00 has been paid. (Fee not applicable to prescribed  
bodies).

The submission/observation is in accordance with the appropriate provisions of the  
Planning and Development Regulations, 2001 -2013 and will be taken into account by  
the Planning Authority in its determination of the planning application.

*Catherine Egan*

for Senior Executive Officer

**Development:**

Universal Developers LLC, intend to apply for a seven year planning  
permission for development on a site at Cruiserath Road, Dublin 15.  
The application site is located to the north of the data centre permitted /  
constructed under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal  
County Council Reg. Ref.: FW17A/0025, to the west of the two data

centres permitted under Fingal County Council Reg. Ref.: FW19A/0087, and to the north and west of the 220kV Gas Insulated Switchgear substation permitted under An Bord Pleanála Reg. Ref.: 306834-20. The site is within an overall landholding bound to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Cruiserath Drive. The proposed development consists of the following:

- Construction of three data centre buildings (Data Centre E, Data Centre F, and Data Centre G), with a gross floor area (GFA) of c. 1, 425 sq.m, c. 20, 582 sq.m, and c. 20, 582 sq.m respectively, each over two levels (with Data Centre F and G each including two mezzanine levels);
- Data Centre F and G will be located in the north-western portion of the overall landholding, with a primary parapet height of c. 19.8 metres and each will accommodate data halls, associated electrical and mechanical plant rooms, a loading bay, maintenance and storage space, office administration areas, with plant and solar panels at roof level;
- Data Centre E (which will be ancillary to Data Centre F and G) will be located within the south-western portion of the overall landholding, with a primary parapet height of c. 13.1 metres and will accommodate data halls, associated electrical and mechanical plant rooms, a loading bay, maintenance and storage space, office administration areas, with plant at roof level;
- Emergency generators and associated flues will be provided within compounds adjoining each of the three data centre buildings (1 no. for Data Centre E, 19 no. for Data Centre F, and 19 no. for Data Centre G);
- The development includes one diesel tank and two filling areas to serve the proposed emergency generators;
- Provision of ancillary structures including two MV buildings, water storage tanks and three bin stores;
- Construction of access arrangements and internal road network and circulation areas, footpaths, provision of car parking (105 no. spaces), motorcycle parking (12 no. spaces) and bicycle parking (56 no. spaces), hard and soft landscaping and planting (including alteration to a landscaped berm to the north of proposed Data Centre E), lighting, boundary treatments, and all associated and ancillary works including underground foul and storm water drainage network, and utility cables.

An EPA-Industrial Emissions Directive (IE) licence will be applied for to facilitate the operation of the proposed development. An Environmental Impact Assessment Report (EIAR) will be submitted to the Planning

Authority with the planning application and the EIAR will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy at the offices of the Planning Authority.

**Location:** Cruiserath Road, Dublin 15.

**Area:** Blanchardstown Mulhuddart

**Applicant:** Universal Developers LLC

**Application Type:** Permission

**Date Received:** 16 December, 2022

**THIS IS AN IMPORTANT DOCUMENT!**

KEEP THIS DOCUMENT SAFELY, YOU WILL BE REQUIRED TO PRODUCE THIS ACKNOWLEDGEMENT TO AN BORD PLEANALA IF YOU WISH TO APPEAL THE DECISION OF THE PLANNING AUTHORITY.

**Please note that all planning applications, including submissions/objections will be published on the Council's website.**

### Grounds for Appeal

1. I set out the main grounds for my appeal below. Please also take into account my original submission to Fingal County Council, and my subsequent submission on the Additional Information response. These submissions are appended, and are referred to where relevant in the appeal submissions below. A technical appendix is also included which provides supporting detail for my appeal.

### Errors and Deficiencies in Fingal County Council Grant of Permission

2. The decision to grant permission effectively amounts to an *ad hoc* allocation of a portion of the remaining limited national carbon budget to the applicant. I submit that Fingal County Council does not have the necessary competence or legal powers to make a decision of this profound nature, and has demonstrably made serious errors in the assessment of the application with respect to renewables and climate impact. In particular the following statements which appear in the report by the planning officer are demonstrably incorrect:
3. On page 40 under Item 1d and e of the Planning Report, it is stated:  
“Following IEMA methodology for assessment of effects, the assessed effect (without mitigation) is considered to be Moderate reducing to Minor (Slight) with mitigation measures in place.”
4. On page 42 the planning report states:  
“Following the implementation of the above measures, it is considered in the addendum that the impact will be to ensure that the Proposed Development and the Overall Project will have in effect net zero GHG emissions when the adaptive onsite measures and the commitment to compensate for the projects remaining emissions, through CPPAs, are accounted for.”
5. The above statements imply acceptance by Fingal County Council of claims by the applicant that proposed mitigation measures in the EIAR represent valid GHG offsets. This was in direct conflict with the reasoned case which I made in my submissions that such claims were invalid. Fingal County Council failed to present a reasoned basis for the dismissal of my arguments in reaching their conclusions.
6. Fingal County Council further erred in not explicitly specifying additionality in condition 13, in accordance with government policy. It also erred in adopting without question the self-serving wording for condition provided by the applicant.
7. I maintain that claims of a GHG offset in the applicant’s EIAR and supporting documentation are without foundation and invalid. Based on the public ally available data, the evidence shows that such a GHG offset claim cannot validly be claimed.

### Invalidity of CPPAs as a GHG Offset - General Considerations

8. The core question which I ask An Bord Pleanála to address is whether a Corporate Power Purchase Agreement for renewables (CPPA) as set out in the applicant’s documents and the

- Fingal grant of permission, represents an additional source of renewable electricity, which could be validly claimed as a Greenhouse Gas (GHG) Offset.
9. In general, proposing that the impact of new data centres in Ireland could be offset by wind generation is not a credible mitigation measure, given that new wind generation has failed to keep pace with increases in data centre energy consumption in recent years, and given the projected large increase in data centre power demand to 2030. To represent a credible mitigation, the growth of wind energy on an annual basis would have to be such that it can meet the national target of 80% renewable electricity to meet the decarbonising needs of the general economy plus the growth in data centres on an annual basis.
  10. The facts speak for themselves. CSO has been reporting metered data centre consumption since 2015. The increase in data centre electricity consumption from 2015 to 2022 was 4016 GWh, which represents an additional annual average load of 458 MW<sup>1</sup> on the electricity grid. Data from Eirgrid and ESB network shows that in the same period there was an increase of operating wind generation annual power of 655 MW<sup>2</sup>. Therefore the growth in data centre power consumption since 2015 represented 70% of the entire new wind power deployed nationally over this period. Or put another way, the growth of data centre power demand over this period has effectively undone 70% of the benefits of new renewable wind power deployed over this period.
  11. In recent years the power demand from data centres has increased more rapidly, and has exceeded the rate at which new renewable wind projects have been connected. If we take the three year period 2020, 2021, and 2022, growth in data centre annual power demand was equivalent to an additional load of 317 MW<sup>3</sup>. This was three times the increased power supply over this period from new wind power generation, which was just 101 MW<sup>4</sup>. In view of this situation where new renewable wind power connections to the grid are unable to keep up with the growth in data centre power consumption, the proposition that indirect GHG emissions from the proposed data centre can be offset by a wind CPPA is unfounded and ridiculous.

(supporting data and analysis for the above statements are included in the appendix).

12. The above describes the current situation, which is a cause for serious concern. Projections for 2030 are much worse, and are quite alarming. They show that the growth of data centre power consumption may well overwhelm all efforts at achieving 80% renewable electricity and completely derail the state's legally binding carbon budget and sectoral emissions ceiling for the electricity sector. The growth projected by Eirgrid<sup>5</sup> is due to a combination of increased energy demand by existing data centres to reach their existing maximum connection contracts, connection of new permitted data centres, and the planned construction of new data centres.

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<sup>1</sup> In this submission I refer to electrical power averaged over a one year period as MW. I use the symbol MWcap to represent the installed capacity of a windfarm, i.e. maximum output. The average power generated over a year by a windfarm would be approximately one third of the MWcap value, i.e. MW = MWcap/3

<sup>2</sup> 1964 MWcap / 3 = 655MW annual average

<sup>3</sup> Increase of 2774 GWh = 317 MW annual average load

<sup>4</sup> 304 MWcap

<sup>5</sup> Ireland Capacity Outlook 2022-2031, Eirgrid-SONI, October 2022

13. In analysis of the electricity market to 2031 by Eirgrid it is projected that data centre power demands are likely to increase by 891 MW in the Median Forecast Scenario, and by 1395 MW in the High Forecast scenario. For wind power to provide an offset for these increases, there would have to be an additional installed wind capacity of over 2600 MWcap for the Median growth scenario, and of over 4000 MWcap, under the High growth scenario. To represent an offset, these increases in wind capacity would need to be additional to the increases which were factored in to CAP23.
14. CAP23 envisages an increase in onshore wind of around 4500 MWcap to 2030. Most informed analysts believe that this will be quite challenging to achieve. Under the Median Forecast scenario for data centres, nearly 60% of this renewables increase would be nullified, and under the High Forecast scenario almost all of the state's planned new wind energy would be nullified. By nullified I mean that the expected benefit in terms of progression to 80% renewable electricity and reduction in emissions from the electricity sector would be impossible to achieve due to the additional large data centre electrical loads.
15. This mismatch between projected growth in data centre demand and growth in renewables supply means that reliance on wind energy to offset indirect emissions from data centres is inherently not a viable proposition taking account of the national circumstances. Given the limited remaining onshore wind energy resources in Ireland, it would be impossible to meet the decarbonising needs of the general economy plus the projected growth in data centre energy consumption.
16. Were An Bord Pleanála to accept the premise that new data centre projects could validly claim offsets from CPPAs, then the same treatment should logically apply to applications for other proposed large energy use developments. For example, an aluminium smelting plant requiring 200 MW of power should be permitted to develop if they can negotiate CPPAs with renewable generators. This approach would represent a planning free-for-all which could claim for the benefit of these projects all of the potential renewable electricity resources in the state.
17. While CAP23 has also targets for offshore wind of 5GW to be operational in the second half of the decade, I have not factored in these potential renewables into the above discussion. The second half of the decade is only 3 years away and there are no new offshore projects yet in the planning system. It would therefore be unwise to rely on any significant offshore supply to be achieved by 2030. Even if such supply should become operational by 2030, it has already been factored in to meet the targets of CAP23, with no spare capacity available to serve as offsets for median or high projected growth in the data sector.
18. The expert opinion of the Irish Wind Energy Association<sup>6</sup> is that Ireland may deliver only 0.67GW of the CAP23 offshore wind target by 2030. Taking account of the time for planning permission process, necessary grid strengthening, construction and commissioning, the IEWA estimated a timeline of up to 8 years for new offshore projects. This was their estimate made in 2020. There is no reason to believe that this timeline has shortened in the meantime. The offshore energy regulatory procedures were only introduced this year. The regulatory agency MARA has only recently been set up, and a reconfiguration of An Bord Pleanála will be required to deal with offshore wind planning applications. Furthermore the

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<sup>6</sup> Building Offshore Wind, IWEA, 2020

proposed new Planning and Development Act, which will be part of the governing legislation has been delayed, and is unlikely to be in place until 2024. If one also factors in delays due to objections, and appeals, an 8-year timeline appears quite optimistic.

### **No Valid Evidence of Claimed GHG Offset or Additionality of Proposed CPPA Renewables**

19. In my submission on Additional Information, I accepted that CPPAs provide a useful support for the deployment of renewables, that they have potential mutual financial benefits for both parties in the contract, and potentially could reduce the cost to the public. I pointed out also that they can result in increased costs to consumers when electricity prices are high as the CPPA power offtaker may have the advantage of lower prices through price hedging over the contract period. In their favour, it could validly be argued that CPPAs can accelerate the construction of existing permitted windfarm developments. While this project acceleration is beneficial in the short-term, it does not constitute an additional renewables source, as it just means that the planned and permitted windfarm in the existing development pipeline may come into operation marginally earlier than may otherwise have been the case.
20. There is a common misunderstanding that a renewables CPPA in itself constitutes an offset. There is in fact no inherent linkage between a CPPA and any potential GHG offset. The key factor which could in certain limited cases justify a claim of GHG off-set is the “additionality” of the renewables in question. Additional renewables would represent generating capacity which would not have happened without the intervention of the CPPA. The burden of proof is on the party claiming the offset to demonstrate this additionality.
21. In view of the potential financial benefits and to accelerate the rate of construction of renewable generation, both the government and the EU support CPPAs. Irish government policy on CPPAs expresses a preference for those with “additionality”, to ensure that CPPAs deliver on Ireland’s renewables and climate targets. To align with government policy a CPPA should comply with the principle that it:

“Clearly delivers additional GHG emissions reduction and contributes to Ireland's 2030 climate and renewable energy targets.”<sup>7</sup>

22. This policy was reinforced in the subsequent government statement on data centres, where one of the core principles is the additionality of renewables:

23. **“RENEWABLES ADDITIONALITY**

**The Government has a preference for data centre developments that can demonstrate the additionality of their renewable energy use in Ireland.**

Developments should provide clear additionality in renewable energy delivery in Ireland, whether through new generation, repowering or

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<sup>7</sup> Renewable Electricity Corporate Power Purchase Agreements Roadmap, DECC March 2022, P. 10

otherwise increasing in-country renewable energy capacity – proportionate to the impact of their energy demand.” (emphasis in original) <sup>8</sup>

24. I submit that no evidence was provided by the applicant in the original application nor in the Additional Information response to demonstrate that the proposed CPPAs represented additional renewables. Furthermore, the applicant has explicitly refused to provide details of claimed renewables associated with the existing AWS data centres in the request for Additional Information (details of this aspect are in my submission on Additional Information attached).
25. The grant of permission by Fingal County Council was based on the erroneous assumption that CPPAs as described by the applicant would off-set the indirect GHG emissions from the proposed development. As discussed below, it would not be possible for the applicant to ensure such renewables additionality from wind energy.
26. Fingal County Council’s planning Condition 13 concerning CPPA was based on a wording proposed by the applicant. This was clearly biased in favour of the applicant, and was not supported by any evidence or argument in the planner’s report. Moreover, it failed to have regard to objective evidence to the contrary presented in my submissions.
27. The planning condition 13 proposed by the applicant, and endorsed by Fingal County Council does not include the words “additional” or “additionality”. Consequently this condition does not comply with stated government policy.
28. Superficially, Condition 13 appears to imply “additionality”, but on closer analysis it in fact precludes a CPPA representing additionality. To ensure that the renewables are up and running prior to commencement of the development, and taking account of the timeframe of the planning permission of 7 years, the only realistic option would be to engage in CPPAs with onshore renewables generators who are already in the development pipeline. These are renewables projects which already have planning permission, and have grid connection contracts. These projects would have happened anyway over the coming few years and so are not additional.
29. According to data provided by the Transmission System Operator (TSO: Eirgrid)<sup>9</sup> and the Distribution System Operator (DSO: ESB networks)<sup>10</sup>, there are currently a total of approximately 1800 MWcap of wind generating capacity at an advanced stage in the existing development pipeline, but which have not yet been connected. These windfarms have already obtained planning permission, and connection contracts with the TSO or DSO. In most cases these projects have typically been up to a decade in planning. I refer to these renewables projects in the discussion below as being in the “existing development pipeline”.
30. TSO and DSO data also indicates that there is at present 4400 MWcap of wind capacity connected and operating. The baseline scenario for renewable wind energy is that connected and operating wind capacity will increase to 6000 MWcap by 2025, as per the projection in Climate Action Plan 2023 (CAP23). This would clearly require almost all of the

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<sup>8</sup> Government Statement on the Role of Data Centres in Ireland’s Enterprise Strategy, March 2022, P. 21

<sup>9</sup> <https://www.eirgridgroup.com/site-files/library/EirGrid/ContractedTSO-Wind-Farms.pdf>

<sup>10</sup> <https://www.esbnetworks.ie/docs/default-source/publications/dso-contracted-wind-generators-q2-2023.pdf?>

“existing development pipeline” of 1800 MWcap to be operational by then, which is 2 years from now.

31. To achieve the baseline CAP 23 projection of 9000 MWcap onshore wind by 2030 would require an additional 2800 MWcap of wind energy capacity to enter the final stages of the development pipeline, i.e. secure planning permission and connection contracts with TSO/DSO. This will prove a difficult challenge, given the long delays in the planning process, the high levels of opposition in local communities, opposition by elected politicians of all parties, and the high rate of project refusal.
32. Therefore I submit that the “existing development pipeline” projects must inevitably become operational over the coming few years either through the Renewable Energy Support Scheme (RESS) auctions, or through CPPA, whichever is most economically favourable to the windfarm developers. It is not credible that a windfarm developer would write off their significant investment and abandon these projects, or that the state would leave these projects “stranded” in the “existing development pipeline”.
33. In the discussion below I refer to the six subsections of Fingal planning Condition 13, a) to f), and show how the applicant can comply with all of these conditions by entering into CPPAs with projects in the “existing development pipeline”, with no additionality over the baseline renewables projection.
34. *(a) The new renewable energy projects shall not be supported by government, consumer or other public subsidies*

This is easily complied with if a standard (non-additional) renewables CPPA is negotiated with a project in the “existing development pipeline”.

35. *(b) The new renewable energy projects shall be located in Ireland and full details of these including consent details shall be provided;*

No difficulty here. There are 1800 MWcap of projects in the “existing development pipeline” that comply

36. *(c) The new renewable energy projects shall be provided by the applicant's group, that is Amazon.com, Inc.*

This condition is not as onerous as it may first appear. A CPPA can be negotiated to give Amazon.com Inc what is termed effective operational control over a windfarm, or indeed could enter a contract to purchase a windfarm in the “existing development pipeline”. They can then rename the windfarm “Amazon” and say that the renewables are provided by Amazon.com Inc, which would be technically and legally true, but would entail no additionality. This has happened with a windfarm at Esk in Cork, which was renamed Amazon Esk.

37. *(d) The new renewable energy generation shall relate to energy that is not being generated at the date of grant of this permission.*

No difficulty complying – none of the 1800 MWcap in the “existing development pipeline” are operating at present.

38. (e) *The amount of electricity generated by the new renewable energy projects shall be equal to or greater than the electricity requirements of the data centres in operation at any given time.*

If CPPAs totalling around 220 MWcap<sup>11</sup> from the “existing development pipeline” are secured, the above condition can readily be complied with.

39. (f) *The new renewable energy projects shall be fully operational prior to the commencement of operation of the data centres having regard to the phased nature of the proposed development.*

This can be complied with by selecting windfarms which are at a sufficiently advanced stage in the “existing development pipeline” to comfortably ensure that they will be operational within the 7 year time-frame of the planning permission. Condition f), also perversely excludes from consideration projects which could demonstrate real additionality, such as a new projects initiated and developed entirely by the applicant. The time-frame for a renewables project from initiation to generating is unlikely to be less than 7 years.

40. In summary, regarding Condition 13, the applicant can easily comply by taking advantage of the low-hanging fruits and negotiating CPPAs for projects in the “existing development pipeline”. However, as under the baseline scenario these projects would all have happened anyway, there would be no additionality, and no credible argument to claim a GHG offset of indirect emissions from the proposed development. In fact, in view of Condition 13 f), the applicant is effectively restricted to CPPAs in the “existing development pipeline”.
41. In the above discussion on compliance with Condition 13, I have excluded the possibility of the applicant entering a CPPA with offshore wind energy projects. These could potentially represent additional renewables if they are initiated and entirely funded by Amazon.com Inc. But given the 7 year duration of the planning permission, there is no credible prospect of offshore wind energy making a contribution in this limited time-frame.
42. In the Report submitted by John Spain Associates (JSA) in response to the Additional Information request, the following is stated:
- In conclusion, it is respectfully submitted that Amazon's commitment aligns fully with the Government's preference for data centres that “can demonstrate the additionality of their renewable energy use in Ireland” and that Amazon's track record on this issue, both in Ireland and around the world, demonstrates our ability to deliver on our ambitious commitments.**
- (JSA Additional Information Response, P. 11)
43. I ask ABP to note that no independently verifiable proof was provided in support of this claimed additionality. The applicant also had an opportunity to produce evidence to support its claim regarding Amazon's track record on this issue. In the Additional Information request, the applicant was specifically asked in Item 3(b) to provide details of the use of

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<sup>11</sup> To compensate for 1MW demand on an annual basis would require approximately 3MW of installed wind capacity

renewables by the existing development in Ireland. The applicant declined to provide this requested information on dubious pretexts (see further details in my submission on Additional Information appended).

44. Amazon's track record in Ireland on the issue of additionality is not good, and gives no grounds to believe they are genuinely committed to sourcing additional renewables through CPPAs. From a review of the planning files for the existing data centre developments (FW 17A/0025, ABP PL06F.248544, FW 19A0087), it is evident that commitments were made only to purchase Guarantees of Origin (GOs) certificates for renewable electricity supply to match their power consumption. Such certificates are a valid market support for renewables generation, but to imply that they constitute an offset is grossly misleading.
45. GOs can be purchased anywhere in the European Economic Area (EEA), and no connection to the Irish grid is required. GOs can also be traded, even if the renewables generator sells the underlying renewable electricity to another party through a CPPA. A GO is simply a certificate that a corresponding quantity of renewable electricity has been produced somewhere. In terms of verifiable GHG offsets, GOs have junk status (see further details in my submission on Additional Information appended).
46. While reference was made to proposed CPPAs in the planning files for the existing development, no supporting details were provided and there was no commitment to additionality, nor was there a planning condition requiring CPPA additionality. As the applicant has failed to provide any details of claimed additionality of contracted renewables for the existing development, as sought in the request for Additional Information, one can conclude that the existing development is operating without any verifiable purchase of additional renewable energy in Ireland, and has not demonstrated offset of any of its emissions.
47. In the application for the proposed development reference was made to three CPPAs, with windfarms in Cork, Galway and Donegal. No details were provided to identify these windfarms, nor to confirm the basis of the CPPAs.
48. From a search of planning files I established that these three windfarms were most likely Amazon Esk (Cork), Arderoo (Galway), and Meenbog (Donegal). The Esk windfarm is already operational, and Arderoo and Meenbog are firmly in the "existing development pipeline". All of these projects would have happened in any event, and could not be considered additional (see further details in my submission on Additional Information appended).
49. In the responses to the Additional Information request Amazon's commitment to renewables worldwide was repeated many times along with a claim that their performance was independently audited. Web addresses were helpfully provided so that planning authorities and the public could fully inform themselves of this happy state of affairs. In studying the energy audit conducted by Ernst and Young Accountants, I can confirm that no breakdown was provided in the published renewable energy audit by region or country. Therefore there is no audited statement regarding the additionality of renewable energy CPPAs entered into by Amazon in Ireland. Nor do the words "additional" or "additionality" appear in the EY audit. The methodology treats renewables projects "enabled" by Amazon as a verified source of the claimed renewables:
50. "Amazon calculates the renewable energy percentage as the amount of renewable energy in the grid Amazon utilizes plus the amount of energy generated from renewable energy

projects enabled by Amazon and divides this number by the total energy used by all Amazon business operations globally during the reporting year.”<sup>12</sup> (emphasis added)

51. The description “projects enabled” by Amazon” is not defined in the EY audit report, and is open to a wide range of interpretations. It could simply mean projects where a CPPA has been negotiated. Furthermore, the EY audit methodology permits Amazon to count the renewable electricity on the grid feeding its operations as contributing to Amazon’s overall renewable energy use. Consequently, at present for its operating data centres in Ireland, and in accordance with its accounting rules, it can claim approximately 41MW of renewable electricity<sup>13</sup>, and add this to its world total.
52. By this accounting rule, the more data centres it connects in Ireland, the more renewables Amazon can claim. In fact the proposed development of 73 MW would add another 27 MW of “Amazon renewables” to their tally<sup>14</sup>, bringing it to 68MW, which clearly this does not represent additionality. If Amazon did not exist this renewable power would have existed anyway, and would have been fully used by the general economy.
53. It should be emphasised that it is quite appropriate for a company to document and publish its purchases of renewable electricity, and to set targets, such as purchase of 100% renewable electricity supply by certain dates. This demonstrates support for the renewable electricity market, gives financial support to renewables suppliers, and is a standard element in many corporate Environmental and Social Governance frameworks.
54. However claiming all accounted purchases of renewable electricity as additional renewables and offsets, in the absence of supporting evidence, is evidently flawed. The kindest assessment of this approach to these claimed renewables GHG offsets is to dismiss it as greenwashing nonsense, but a more critical assessment could well conclude that it is deliberately misleading.

### **Deficiencies in Assessment of Climate Impact**

#### **Optimistic Best-Case 80% Renewables Assumption**

55. In the analysis in the AWN Additional Information response report, the projected indirect emissions are best case estimates and substantially lower than alternative and more credible and reasonable worst case estimates (calculated and presented in appendix to this appeal).
56. The EIAR and revised EIAR in the Additional Information are based on an assumed successful linear trajectory to 80% renewable electricity in 2030. This is an absolutely best case scenario, as achieving 80% renewable electricity is by no means guaranteed even with no growth in electricity demand. Given the pressures of very large increased power demands by data centres, reaching this goal is made much less likely. Based on this optimistic assumption of 80% renewable energy, and speculative anecdotal projections quoted in the EIAR, the GHG emissions for the proposed development and for the Total Project are calculated based on a grid emission factor of 0.237 kg CO<sub>2</sub>/kWh in 2025, and 0.1 kg CO<sub>2</sub>/kWh in 2030.

<sup>12</sup> Independent Accountants’ Review Report, Ernst & Young, Seattle, July 14<sup>th</sup> 2023

<sup>13</sup> The EIAR states existing data centres use 110.6MW, current renewable electricity is around 37%, hence Amazon lays claim to  $110 \times 0.37 = 40.7\text{MW}$  which is then included in their world total

<sup>14</sup>  $73 \times 0.37 = 27\text{ MW}$

57. The proposed development when connected to the grid would cause an immediate increased power demand of 73 MW. As there is no evidence of additional compensating renewables, and in any case since renewables generation cannot instantly adjust to match a new base load, the additional generation will in fact be provided by existing fossil fuel power plants. In the lowest emission scenario this would be provided by efficient combined cycle gas fuelled power plants.
58. I contend that the emissions calculations should be based on the resulting indirect emissions from fossil fuel power plants supplying the additional grid demand of the proposed development, as this reflects the physical reality of what will happen in terms of emissions to atmosphere. According to my calculations, this will result in an additional emission to atmosphere which are a factor of 4 times higher than the values presented in the AWN EIAR and in the AWN Additional Information response report (see details in the appendix). A greater increase would occur if the Moneypoint coal fired generating station is still operating at that time.
59. Furthermore, in the absence of proof of additional renewables supply, there are good grounds for carrying out emissions calculations based on 0% renewable electricity supply for data centres, as such new large energy users in fact significantly impede and reduce the percentage of renewable electricity on the grid. The fundamental general question is whether a proposed development which has characteristics which severely impede or erode a planned national mitigation measure, is entitled to claim a benefit from this same mitigation measure.
60. The effect of increased data centre power consumption on the supply of renewable electricity on the grid is evident from published SEAI data <sup>15</sup> which shows that the percentage of renewables on the national grid has stalled over the past three years. A significant reason is the growth of electricity demand exceeding the rate of deployment of renewables:
- “Ireland’s 2022 renewable energy share of electricity (RES-E) result was 36.8%, which is a small increase over the 2021 RES-E result of 36.4%. Ireland’s RES-E results in 2021 and 2022 are lower than in 2020 due to changes in the REDII calculation methodology, and because electricity demand increases in Ireland have outpaced our deployment of renewable generation.” (emphasis added)
61. In fact data centres account entirely for the increase in electricity demand in recent years, and this growth is accelerating. In 2021, data centres accounted for 14% of metered energy consumption. In 2022, this had increased to 18% (see CSO data in appendix).
62. From analysis of CSO metered electricity consumption it can be seen that the electricity consumption of data centres in Ireland increased by 317 MW annual average load in the three years 2020, 21, 22 (see data and calculations in appendix). To compensate for this increased consumption would have required approximately 750MWcap of additional wind generation capacity to have become operational over the past three years. From TSO and DSO data, the actual additional wind energy which became operational over this period was just 304 MWcap, which is equivalent to 101 MW annual average power.

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<sup>15</sup> Key Insights from SEAI’s 2022 National Energy Balance 5th September 2023, Version 1.1

63. It is clear that installation of renewables is falling significantly behind the growth in data centre power demand, thus reducing the percentage of renewable electricity on the grid. Furthermore it demonstrates the futility of seeking GHG offsets for data centres whose power consumption evidently currently overwhelms the deployable new wind energy capacity in the development pipeline.
64. The impact of the growth in data centre demand on the percentage of renewable electricity on the grid is easy to calculate. If one hypothetically excludes additional data centre demand over the past three years, Ireland would now potentially have 40% renewable electricity on the grid, compared with the present 37%. If there had been no growth in data centre power demand since 2015, there would be almost 6% points more renewable electricity on the grid. For the Proposed Development, the additional load of 73MW would reduce the percentage renewables on the grid by almost one percentage point (see appendix for details).
65. This dilution effect of data centre power demand on grid renewables fully justifies the government policy which expresses a preference for data centres that can demonstrate additional renewables through their CPPAs. In principle, if this were complied with, the new data centres would not compromise the achievement of the national renewable electricity target, and would not interfere with the existing pipeline of planned renewables supply.
66. In carrying out a climate impact assessment the environmental practitioner has to inevitably make certain assumptions, and provide a justification for these assumptions. In the AWN EIAR analysis they have assumed that the proposed development will benefit from the 80% renewables electricity on the national grid in 2030. This represents a speculative best case assumption, as it takes no account of evident difficulties in achieving this target, nor of the effect of increasing data centre loads on the percentage renewables on the grid.
67. In my view, since the connection of new data centres acts against the national transition to 80% renewable electricity, and in the absence of evidence of additionality of a CPPA, a blanket assumption of 80% renewable electricity claimed for the development in 2030 is problematic and questionable.
68. In such situations of uncertainty, the precautionary principle should be applied. The analysis should default to the assumption of maximum emissions, based on powering the proposed data centres from fossil fuel generation, which is a credible worst case scenario, and represents the most likely physical reality. This approach would be in accordance with IEMA guidelines which states:
- “The assessment should seek to present a reasonable worst case” (IEMA, 2022, P. 15).

### **Deficiencies in Climate Impact Assessment**

69. The applicant has presented two analyses of climate impact, firstly in the original EIAR which determined at most a slight adverse impact. A second revised assessment was provided in the additional information provided. This was in response to the request by Fingal County Council to carry out an analysis in accordance with the Institute for Environmental Management and Assessment (IEMA) methodology. The revised analysis was presented in the AWN Additional Information response report. While the revised assessment was based

on the same emissions data, the climate impact was upgraded from “slight” to “moderate adverse”.

70. Referring to the original assessment, in section 9.7.2.3 of the EIAR it was stated, without supporting argument that:

"The indirect CO2 emissions from electricity to operate the facility will not be significant in relation to Ireland's national annual CO2 emissions."

And in section 9.9, the climate impact of the operational phase of the proposed development was stated to be:

“ ..... long-term, negative and ranging from imperceptible to slight”

71. I do not accept these statements as being correct, and explained my reasoning in my original submission, which included among other points, that the assessment did not consider the impact with respect to Ireland's emissions ceiling for the Electricity Sector in 2030 (see original submission appended). This was a serious omission.
72. The second assessment presented in the AWN Additional Information response report was conducted in accordance with IEMA methodology. According to IEMA, any development which results in emissions not consistent with a pathway to net zero emissions must be considered to have a significant adverse impact (see criteria in appendix).
73. As any additional emissions from the proposed development would not be in alignment with a pathway to net zero, and would not be consistent with the national target of 51% reduction by 2030 (with associated legally binding carbon budgets), the impact must be categorised as Significant Adverse. This holds for both the best case (80% renewable electricity) and worst case (fossil fuel generation) scenarios, as there are additional GHG emissions in both cases.
74. By IEMA criteria the level of significance for the impact assessed under the best case scenario (80% renewables) could reasonably be termed “Moderate Adverse” as was concluded in the AWN Additional Information response analysis (Table 1.10, P.43).
75. In the alternative worst case, but credible scenario, based on fossil fuel generation, emissions would be 4 times higher than the values presented in Tables 1.8 and 1.9 on pages 36, 37 of the AWN Additional Information response. Emissions from the proposed development would be in such a scenario 260,000 tonnes CO2eq/yr, and emissions from the Overall Project would be 780, 000 tonnes CO2eq/yr. Given these large additional emissions, the description of the impact would a shift from “Moderate Adverse” to at least “Major Adverse” assessed impact. In the context of the national emissions ceilings, an even greater adverse impact could also be reasonably assigned, as discussed below.
76. Referring to Table 1.10 on page 43 of the AWN Additional Information response report (reproduced below), I submit that comparison with emissions in the EU ETS is not a relevant consideration in terms of national climate change policy. I presented a supporting argument for this view in my original submission (which is appended). The table does however present emissions as a percentage of the national emissions ceiling for the electricity sector in 2030,

which was missing from the original EIAR. This inclusion is highly relevant as it permits the scale of the adverse impact to be revealed.

Scenarios	% Of 2030 ETS Total <sup>Note 1</sup>	% Of Electricity Emission 2030 Ceiling <sup>Note 2</sup>	Significance (Prior to mitigation)	Significance (After mitigation)
Proposed Development	0.009%	2.2%	Moderate Adverse	Minor Adverse
Overall Project	0.028%	6.5%	Moderate Adverse	Minor Adverse

Note 1 ETS 2030 Total = 690.91 Million Tonnes CO<sub>2eq</sub>

Note 2 Based on 5-year average 2026 - 2030

**Table 1.10** GHG Emissions Associated With Each Scenario Compared To Sectoral Emission Ceiling & ETS

77. Referring again to Table 1.10, in the column headed "Significance" it is stated that it is "prior to mitigation". This is misleading, as it already includes the mitigating effect of an assumed 80% renewable electricity supply in 2030. As discussed earlier this is a highly questionable assumption, as 80% renewable electricity is unlikely to be achieved with the current rate of growth in large energy users in Ireland.
78. In the "prior to mitigation" column in Table 1.10, the Proposed Development and the Overall Project are stated to account for 2.2% and 6.5% of the Electricity Emission Ceiling in 2030. Another way of expressing this is that the entire national electricity emissions ceiling in 2030 would be consumed by 45 developments of the same scale as the proposed development (100/2.2). For the Overall Project at Cruiserath, just 15 developments of the same size would consume the entire national emissions ceiling (100/6.5). Such an impact on the national emissions ceiling would certainly have to be classified as a "Major Adverse".
79. In the reasonable worst case scenario, which would result in 4 times more emissions, the Proposed Development and the Overall Project would consume 8.8% and 26% of the national emissions ceiling respectively. This would leave room for the national emissions ceiling to accommodate just 11 developments (100/8.8) of a similar size to the proposed development, and at most 4 developments (100/26) of the same size as the Overall Project at Cruiserath. There is no significance descriptor in the IEMA guidelines to adequately describe such an extreme adverse impact, but "Catastrophic and Unacceptable Adverse Impact" might do for the present.
80. The last column of Table 1.10 shows the assessed impact with mitigation measures in place, where the impact is reduced from "Moderate" to "Minor". The mitigation measures listed in section 6, and repeated elsewhere in the AWN Additional Information response, rely entirely on the use of CPPAs to offset the GHG emissions brought about by the development. If, as I have argued earlier there is no evidence to believe that a CPPA with genuine renewables additionality will be in place, then there is no further meaningful mitigation feasible, and the adverse impact remains "Moderate" under the AWN optimistic best case scenario, and at least "Major" or more accurately "Catastrophic and Unacceptable) under my more credible worst case scenario.

81. The additional mitigations mentioned in section 6 and repeated elsewhere in the Awn Additional Information response report are likely to be ineffective or trivial, as discussed briefly below:
- a. HVO diesel : benefit not quantified, but there is likely to be negligible benefit from reduced emissions from occasional use of the back-up generators
  - b. PV Array: benefit not quantified, but I calculate that an 85.5KWp PV system would supply at most 0.01% of the 73MW power consumption
  - c. Facilitate district heat: As discussed further later, given the low area density of heat loads in the vicinity of the site the projected number of properties that could be served is small and the benefit is tiny. The same benefit could be achieved much more cost effectively with alternative existing technologies. Such small putative district heating benefits, which may not ever materialise, could not be used to justify grant of permission.
  - d. Climate Neutral Data Centre Pact: while there are targets for members to purchase renewable electricity, there is no commitment for signatories of the pact to guarantee additionality
  - e. Low energy lighting: not quantified, but likely to be trivial
  - f. Amazon world-wide initiatives: these are laudable but not directly relevant to planning decisions in Ireland. Furthermore the applicant declined to provide a regional or country breakdown of Amazon's claimed renewables initiatives (see my submission on Additional Information). Based on the EY audit, it is clear that Amazon takes a maximalist approach to accounted renewables, including grid renewable supply, and CPPAs. There is no reason to believe that the claimed renewables worldwide represent any additionality.

### **Comments on Cumulative Impact of Data Centres**

82. The Climate Act which underlies CAP23 aims for rapidly reduced GHG emissions to 2030 with legally binding carbon budgets. Emissions Ceilings for the various sectors of the economy are an important element for achieving overall budget compliance. Ideally, all new developments should be assessed at central level by a state body to determine their potential impact on the emissions ceiling in their sector, and projects either refused, or only limited emissions assigned to ensure that the ceilings are not breached. There is however no body with the statutory powers to undertake such assessments and rational allocation of the remaining carbon budget.
83. The responsibility for such assessments defaults to the planning authorities, who in turn must rely upon the accuracy and impartiality of the expert assessments provided in the EIARs submitted with the planning applications. This is clearly an unsatisfactory situation, as the EIAR considers only an individual project, and lacks overview of the cumulative effect of other similar proposed developments or planned future developments in the state, which may be unknown to the professional environmental assessor. A situation can then arise that the potential cumulative impact of similar developments is not communicated to the planning authorities, leading to a grant of planning permission, or grant of a series of planning permissions, which compromise the national GHG targets. This piecemeal approach to planning approval for projects entailing GHG emissions is clearly flawed.

84. In the case of the proposed development, the EIAR addressed cumulative impact of indirect emissions from power plants only in the context of activities within the physical boundary of the site in question. While it would be unreasonable to expect the environmental assessor to have knowledge of all proposed current and future developments in the state, the assessors would have had knowledge of other projects which they had worked on. It is not a requirement of an EIAR that an assessor include the impact of their full portfolio of completed similar projects, however An Bord Pleanála may find details of such a cumulative impact assessment relevant in deciding this case.
85. The environmental consultants (AWN) who prepared the EIAR for the proposed development, have also prepared EIARs for a number of similar developments. From the planning files I have identified three additional projects, and this may not be an exhaustive list. The table below identifies these projects, together with the proposed development, along with the declared cumulative emissions, and associated climate impact assessment.

Development	Planning ref	Declared Cumulative GHG Emissions tonnes CO <sub>2</sub> eq/year	EIAR Climate Impact Assessment	Reference
Tunis Properties LLC, Drogheda	ABP-310729-21	473,040	indirect, long-term, negative and slight	EIAR, Ch.9, P.24
Art Data Centres Ltd. Ennis	ABP-314474-22	292,704 to 657,000	indirect, long-term, negative and slight	EIAR NTS, P.2, and AWN Report to ABP Table 5
Crag Wicklow Ltd., Arklow	ABP-311778-21	361,350	indirect, long-term, negative and slight	EIAR Ch.8, P. 22
Universal Developments (Overall Project)	FW22A/0308	195729-456592	Imperceptible to Slight in original EIAR minor adverse in AI	EIAR Ch.9 P. 42 AWN AI response, P. 43
Total for above 4 developments		1322823 to 1947982		
		1.32 to 1.95 million tonnes		
		44% to 65% of 2030 ceiling for Electricity Sector in 2030		

86. The cumulative impacts of these four projects, as assessed by just one environmental consultancy company range, from 1.3 to almost 2 million tonnes of GHG in 2030, which would account for between 45% and 65% of the national emissions ceiling for the electricity sector in 2030. All of these projects were assessed as "slight" or at most "minor" adverse

impact, yet the cumulative impact of these projects could not be described as “slight”, as the adverse impact on national GHG targets would be profound.

### Just Transition

87. The Climate Bill 2021<sup>16</sup> includes provisions in section 4 (8) regarding a just transition to a climate neutral economy, and this principle is embedded in CAP23. Any planning decisions which may impact on activities generating GHG emissions should have appropriate regard to this principle.
88. The concept of a Just Transition is not just confined to easing the difficulties of labour sectors migrating from fossil fuel intensive activities to the greener economy, or of ensuring communities are not adversely affected by the necessary energy transitions. A broader definition by The National Economic and Social Council (NESC) has defined a just transition as ‘one which seeks to ensure transition is fair, equitable, and inclusive in terms of processes and outcomes’<sup>17</sup>.
89. In the case of the proposed development the applicant is effectively seeking approval through the planning process for a project, which by the applicant’s best-case estimate will emit 65,124 tonnes of GHG per year. Furthermore they are seeking approval that their proposed CPPA from a windfarm in the existing development pipeline represents a valid GHG offset.
90. A grant of permission on this basis would have significant implications for Ireland’s policy with respect to the principle of a just transition. Firstly, if the permission is granted on the basis of the proposed and conditioned CPPAs (Condition 13), it would effectively assign a national renewable energy resource to a corporation which would profit from this resource. It would deprive the remaining economy and society of this same resource, which was originally devised and progressed through the state’s planning systems in the interests of the common good. There would consequently be an additional burden transferred to society and the economy to re-instate at additional cost the necessary compensating renewables supply. Such an outcome would not be in compliance with criteria for a just transition.
91. Secondly, a grant of permission would divert a significant quantum of national GHG emissions from the national carbon budget to a corporation which would use this allowance for generation of considerable profit for itself, with possibly negligible benefit in terms of high value employment in the state.
92. Until such time as zero GHG emissions are achieved, hopefully by 2050, all economic activity will inevitably entail a certain emission of GHG per job. Given the limited remaining national carbon budget it is desirable that the maximum employment should be supported by the remaining available carbon budget. This will require a move to less carbon intensive jobs.

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<sup>16</sup> Climate Action and Low Carbon Development (Amendment) Bill 2021

<sup>17</sup> NESC (2020) Addressing Employment Vulnerability as Part of a Just Transition in Ireland  
[http://files.nesc.ie/nesc\\_reports/en/149\\_Transition.pdf](http://files.nesc.ie/nesc_reports/en/149_Transition.pdf)

93. The proposed development would be extremely carbon intensive in terms of jobs. If the proposed development creates for example around 100 jobs within new the data centres<sup>18</sup>, then the emission per job would be over 650 tonnes GHG per job per year, based on the applicants best case scenario. Currently, for the wider industrial economy emissions per job are less than 20 tonnes GHG/job/yr. For the same level of GHG emission of 65,000 tonnes GHG, over 3000 jobs could be facilitated in the wider industrial economy<sup>19</sup>.
94. The above are best case estimates. In my own credible worst case estimate, GHG emissions could be in excess of 260,000 tonnes per year, if as I expect the development will induce additional base load gas fuelled power generation. These emissions would equate to 2600 tonnes GHG per job per year. Were the same emission budget assigned to the wider industrial sector, it could provide for 13,000 jobs.
95. Data centre development could clearly not be justified in terms of the immediate jobs created. However, as presented in the Planning Report submitted with the original application, it would contribute significantly to the economic output of the economy. There would therefore be potential for a tax contribution to the state. Corporation taxation is a complex area, and it may be difficult to quantify the overall benefit to the state. However I note from a recent article in the Irish Times that Amazon Data Services paid only €25m in corporation tax in 2022, which represented 0.5% of the reported turnover of €4.8bn.<sup>20</sup>
96. Such a low tax return to the state would hardly justify approval of a project, given that the project would lay claim to over 220MWcap of wind generation in the “existing development pipeline”, and would consume between 65,000 and 260,000 tonnes of the limited budget of GHG for 2030.
97. Regarding additional jobs facilitated by the increased data centre capacity and associated economic activity, it is not at all clear that a significant number of these new technology jobs would be in Ireland. Clients making use of the data services will inevitably be located worldwide, and employment may be generated abroad. In a world digital environment where data travels at the speed of light in fibre optic cables, location of clients of the data centres is not a critical factor. No evidence was presented in the application that location of data centres in Ireland in proximity to other digital enterprises operating in the state is technically required, based on data latency or other considerations.

### **Consideration of Compliance with Government Policy on Data Centres**

98. While Government policy supports data centre development, this does not mean such developments should be unlimited. As strongly implied in the government statement on data centres<sup>21</sup> there are situations envisaged in which new data centres could not be justified. The Government has set out six principles that should inform and guide decisions on

<sup>18</sup> 104 stated as maximum in the Transportation Report

<sup>19</sup> In 2021 there were approx 470,000 employed in industry. Emissions from the Industrial sector were 6.58MtCO<sub>2</sub>eq, plus around 2MtCO<sub>2</sub>eq indirect emissions from electricity consumption. This works out to be less than 20 tCO<sub>2</sub>eq per job.

<sup>20</sup> “Data centres in Ireland: the grey, windowless structures causing controversy”  
Colm Keena, Irish Times 29<sup>th</sup> September 2023

<sup>21</sup> Government Statement on the Role of Data Centres in Ireland’s Enterprise Strategy, July 2022

future data centre development. These were discussed in the EIAR, and compliance was claimed by the applicant with all six principles. I contend that the principles are not complied with, as discussed below.

99. **“ECONOMIC IMPACT**

The Government has a preference for data centre developments associated with strong economic activity and employment. “

This aspect was addressed under the heading “Just Transition above”. The additional number employed in the data centre would appear to be about 100, and while there obviously will be an economic impact in terms of additional turnover for Amazon Data Services (ADS) and its Irish operations, it is not at all clear that there would be a resultant general economic stimulus in Ireland. Much of the additional services will most likely result in growth in economic activity and increased employment elsewhere in the world. As mentioned earlier, tax contribution to the Irish exchequer from existing Amazon operations in Ireland appear to be miniscule.

100. **“GRID CAPACITY AND EFFICIENCY**

The Government has a preference for data centre developments that make efficient use of our electricity grid, using available capacity and alleviating constraints.”

While power infrastructure funded by the developer is already in place, with capacity at distribution level to power the proposed development, there is no evidence that the proposed development will serve in any way to alleviate potential future national electricity grid constraints. The development will simply be an additional constant load of 73 MW drawing from the national electricity grid. There is no discussion or commitment in the application documents to provide power demand flexibility to alleviate grid constraints.

The proposed development would in fact be effectively precluded from providing any significant alleviation of stress on the grid by switching over to back-up diesel generators, as air quality standards would inevitably be breached at residential receptors in proximity to the site. In the EIAR (ch. 9, p.31) it is stated that the predicted annual nitrogen dioxide (NO<sub>2</sub>) concentration at residential receptors was 80% of the annual limit value, based on just 72 hours operation per year of 97 back-up generators. Protracted operation of these generators would exceed the air quality limit value for NO<sub>2</sub>. Furthermore, planning conditions 11 and 12 set by Fingal County Council imply a restriction on operation of the back-up diesel generators to minimise air pollution. The back-up diesel generators could therefore not be relied upon to provide a regular service to alleviate strain on the Irish electricity grid.

101. **“RENEWABLES ADDITIONALITY**

The Government has a preference for data centre developments that can demonstrate the additionality of their renewable energy use in Ireland.”

As discussed in detail earlier, the documents submitted by the applicant do not demonstrate additionality of their renewable energy use in Ireland.

102. **“CO-LOCATION OR PROXIMITY WITH FUTURE-PROOF ENERGY SUPPLY**

The Government has a preference for data centre developments in locations where there is the potential to co-locate a renewable generation facility or advanced storage with the data centre, supported by a Corporate Power Purchase Agreements, private wire or other arrangement.”

This principle cannot be complied with for the proposed development, as it is a sub-urban area with limited space, and is distant from renewables sources which could provide a private wire connection. The applicant has proposed that a district heating system would address this aspect. This is discussed in section 7.30 of the JSA Planning Report, but does not stand up to close scrutiny, and can be dismissed as greenwashing. Housing density in the vicinity of the site is quite low, and there are no significant local heat loads.

Construction of district heating infrastructure in nearby housing estates, and installation of heat exchangers in houses, would be extremely costly and disruptive. The projected savings of 1500 tonnes CO2 are insignificant compared with the indirect emissions resulting from the Overall Project. Such reductions could readily be achieved through the thermal upgrades of houses, and use of heat-pumps which are envisaged in CAP23. This could be achieved at a lower cost, and without tying the heating needs of the community into the continued operation of data centre facilities, which may have a limited commercial lifespan.

As An Bord Pleanála will be aware from the Poolbeg waste incinerator experience, it is one thing to produce planning reports saying that a project can be justified based on efficient use of waste heat for district heating, and quite another matter to implement such a project. In hindsight it is easy to see why a district heating project at Poolbeg failed to progress, given the absence of municipal district heat regulations or of any legal mechanism to require the many large urban heat loads adjacent to Poolbeg to accept this heat. The Poolbeg project, which was granted permission supported by putative waste heat recovery currently operates with no district heating.

103. **“DECARBONISED DATA CENTRES BY DESIGN**

The Government has a preference for data centres developments that can demonstrate a clear pathway to decarbonise and ultimately provide net zero data services.”

As discussed earlier, the proposed development will rely on the national grid for power, and it is most likely that the additional base load will need to be supplied by fossil fuelled power plants, with resulting indirect annual emissions of between 65,000 tonnes CO2 (best case) to 260,000 tonnes CO2 (worst case). There is no prospect of the proposed development providing net zero data services in the time-frame to 2030.

104. **“SME ACCESS AND COMMUNITY BENEFITS**

The Government has a preference for data centre developments that provide opportunities for community engagement and assist SMEs, both at the construction phase and throughout the data centre lifecycle.”

The outline of community benefit initiatives in the Planning Report indicate compliance with the above Government preference. It would however have been helpful to have included a report showing what was specifically achieved in the locality, with the budget allocated. For example community benefit schemes for wind energy projects publish funding for local community projects, which may amount to a budget of many million euros per project.

**105. Summary of Grounds for Appeal and Conclusion**

The grounds for my appeal are summarised as follows:

Errors and deficiencies in Fingal County Council's analysis of the application, including failure to consider valid objections, and error in the grant of permission based on an assumed additionality of CPPAs, and unsupported conclusion that the proposed development would be net zero

CPPAs with wind farms could not offer a credible GHG offset, in the context of the limited remaining onshore renewables, and projected large growth in data centre power demand in Ireland

No valid independently verifiable evidence was submitted which could demonstrate the claimed additionality of renewable CPPAs

Condition 13 set in the grant of permission could be complied with by entering into CPPAs with windfarm projects which are already approved and have connection contracts, and therefore do not represent additional renewables

The three windfarms claimed as CPPAs have been in the existing development pipeline for many years, and cannot be classified as additional renewables

The applicant refused to provide details of renewable power use in Ireland for the existing development

There is no realistic prospect of the applicant securing a verifiable additional renewable electricity supply within the 7 year time-frame of the grant of permission

Audited renewable energy for Amazon worldwide does not specify a requirement for additionality, and furthermore counts renewable energy on the supply grid towards Amazon's total

The additional load of data centres tends to dilute renewables on the grid reducing the percentage renewable electricity

The EIAR was based on an unrealistic best-case scenario of 80% renewables on the grid in 2030,

An alternative realistic worst-case assessment based on powering by fossil fuel power stations shows that emissions would be four times higher than the emissions tabulated in the EIAR

The revised EIAR assessment determined a "Moderate Adverse" impact. For a realistic worst-case scenario with four times the emissions, this would be a "Major Adverse" impact

As there is no proven additionality of the proposed CPPAs, there is no further mitigation possible to change the assessed impact to "Minor Adverse"

The additional mitigations listed in the EIAR are trivial

The cumulative climate impact of this project and other proposed data centre projects analysed by the same environmental consultants (AWN) would have a “Catastrophic and Unacceptable” climate impact, and completely undermine national carbon budgets and emissions ceiling for the electricity sector. All of these projects were incorrectly assigned a “slight” climate impact individually.

Granting permission would breach the principles of Just Transition, as it would effectively transfer a portion of the remaining national budgeted emissions to the Amazon data centre, thus depriving the general economy of these allowances, and pose risks for future employment in the state

Granting permission on the basis of renewables CPPAs would effectively remove these renewables from the service of the common good, thus incurring greater costs on society who would have to bear the cost of compensating for this loss

There is substantial non-compliance with the Government’s stated six principles for data centre development

In my considered opinion, the application is invalid and the Board lacks jurisdiction to grant the development on the basis of the information before it, so the application should be refused.

Should the Board decide to grant, it is asked to be clear in its reasoning to grant permission for this development so observers can know precisely what the reasons are and how the legitimate concerns have been addressed. This level of reasoning is required under European and domestic law in relation to AA and EIA so that one can decide whether a judicial remedy is required in the event of a decision to grant planning permission.

## Appendix

### Inherent Impossibility of Meeting Data Centre Loads with Wind Power

Referring to the CSO and TSO/DSO tables above, and taking 2015 as the reference year the following statements can be made and conclusions drawn:

In 2022 the increase in data centre energy demand re 2015 was 4016 GWh, which corresponds to annual average power demand of 458 MW. The increased wind power connected over this period was 655 MW. Thus the increase in data centre power consumption represented 70% of the entire wind generation power connected over this period.

In the 3 years 2020, 2021, 2022, growth in data centre power consumption has accelerated greatly. The increased data centre power consumption over this period was 317 MW, which was more than three times the additional wind power connected over this period, which was 101 MW.

Given that power demands of data centres are so high in proportion to deployed and deployable wind energy, the acceleration in data centre power consumption in recent years, and expected further growth to 2030, it is not credible that there would be any spare national wind energy capacity to offset specific new power demands of data centres.

CSO				
Year	Data Centre	Other Metered Customers	Gigawatt hours	
			Total	% of Total
2015	1,236	23,364	24,600	5
2016	1,477	23,879	25,356	6
2017	1,755	23,970	25,725	7
2018	2,172	24,558	26,730	8
2019	2,478	24,027	26,505	9
2020	3,019	24,037	27,056	11
2021	4,001	24,505	28,506	14
2022	5,252	24,248	29,500	18

CSO Metered Electricity Consumption 2015-2022 <sup>22</sup>. To convert from energy consumption in GWh to annual average power demand MW, multiply by 0.114.

<sup>22</sup> <https://www.cso.ie/en/releasesandpublications/ep/p-dcmec/datacentresmeteredelectricityconsumption2021/keyfindings/>

Year	Additional Wind Power Generation in Year			
	DSO MWcap	TSO MWcap	DSO+TSO MWcap	DSO+ TSO MW
2015	75	106	181	60
2016	124	219	342	114
2017	287	220	508	169
2018	182	183	365	122
2019	288	158	446	149
2020	85	132	217	72
2021	0	9	9	3
2022	34	43	77	26
growth 2016-22	1000	965	1964	655
growth 2020-2022	119	185	304	101

Annual increased wind power generation in Ireland, compiled from data provided by Eirgrid (TSO<sup>23</sup>) and ESB Networks (DSO<sup>24</sup>). Data accessed September 2023. MWcap indicates the installed wind power capacity (i.e. max output). MW indicates the annual average power delivered to the grid, which is approximately one third of the installed capacity (allowing for variable wind conditions).

#### **Impossibility of Offsetting Rapidly growing Data Centre Demand by Onshore Wind Energy**

Electricity demand projections by Eirgrid to 2031 are shown in the figure below. It can be seen that electricity demand for the Residential, Commercial and Industrial (excluding data centres) sectors are projected to be relatively stable with only a gradual slight increase over the coming decade. Planning decarbonisation for electricity demand sectors can reasonably be based on an assumption of small growth in demand and achievement of the national target of 80% renewable electricity.

Providing additional power for the e-car and heat-pump applications will be more challenging, as an additional annual average demand of around 600 MW<sup>25</sup> is projected, assuming national targets for e-vehicles and heat-pumps are achieved. With increased renewables from onshore wind and solar PV, it would however be technically achievable within the renewables targets of CAP23. However even if the grid failed to provide sufficient renewables to match this increased load, there would still be inherent GHG mitigation. Even if powered from a grid with substantially less than 80% renewables there would still be a significant reduction in GHG emissions from these sectors as the e-car and heat-pump technologies are at least three times more energy efficient than the petrol/diesel cars, and gas/oil central heating technologies which are being replaced. Therefore even in the event of failure to reach overall renewable electricity targets, these sectors would nevertheless be on a GHG reduction trajectory which aligns with the national GHG transition objective. For these sectors, it is therefore reasonable to model future emissions based on whatever % renewable electricity is achieved on the grid, which will hopefully be 80% by 2230.

<sup>23</sup> <https://www.eirgridgroup.com/site-files/library/EirGrid/TSO-Connected-Renewable-Generation.pdf>

<sup>24</sup> <https://www.esbnetworks.ie/new-connections/generator-connections-group/generator-connections/generator-connection-statistics>

<sup>25</sup> Increase of ~ 5.3 TWh

The projected additional demand of 891MW under a median growth scenario for the data centre and new tech sector (Eirgrid report Table 1) represents more than a doubling of demand in this sector. As can be seen in the figure below this is projected to be the fastest growing electricity demand sector and will account for 28% of electricity consumption in 2030. Unlike the e-car/heat-pump sector, there is no inherent compensating GHG mitigation – all additional data centre and large tech developments will exert significant pressure for increased GHG emissions.

Were this increased load to be matched on an annual basis by new wind generation, an additional installed onshore wind capacity of at least 2600 MW cap would be required. This would consume around half of the additional wind capacity that is envisaged to 2030, which would have evident impact on national renewable electricity plans.

Under the Eirgrid High Forecast Scenario for data centres, the power consumption would increase by 1395 MW. To be matched by wind generation this would require over 4000 MW cap of new wind generation, which is almost the entire projected new wind capacity projected under CAP23.

The scale of the looming problem can be appreciated by considering the credible situation that this growth will have to be powered by fossil fuelled generation, as the projected growth is greatly in excess of what could credibly be compensated by additional renewable electricity. The potential impact can be quantified by estimating the GHG emissions which would result from powering these additional demands of 891MW, or 1395MW, under the median and high forecast scenarios respectively. In the lowest emission scenario, with power from CCGT gas power stations, calculated emissions are 3 million tonnes of GHG per year (in the form of CO<sub>2</sub>), which corresponds to Ireland's entire emissions ceiling for the Electricity Sector in 2030. In the High Forecast Scenario, GHG emissions would be 5 million tonnes per year, which would be +166% of the national emissions ceiling for the electricity sector in 2030.

The responsibility of Eirgrid and CRU is primarily to ensure adequacy of supply. While they take account of national climate action plans and renewables targets in their projections, their job is to ensure that expected demand growth from permitted developments can be powered in some manner, not necessarily through renewables. They have no statutory role which would permit them to decline connections on the basis that a proposed development may breach national GHG targets. Their objective is "to keep the lights on", and to deal with what is in front of them in terms of load demands. Consequently any permitted new data centres and large new tech loads will increasingly be required to have on-site generation assets which would be called upon when the grid is under strain. These will inevitably be on-site fossil fuelled generators, as the area required for renewable deployment on site would not be adequate.

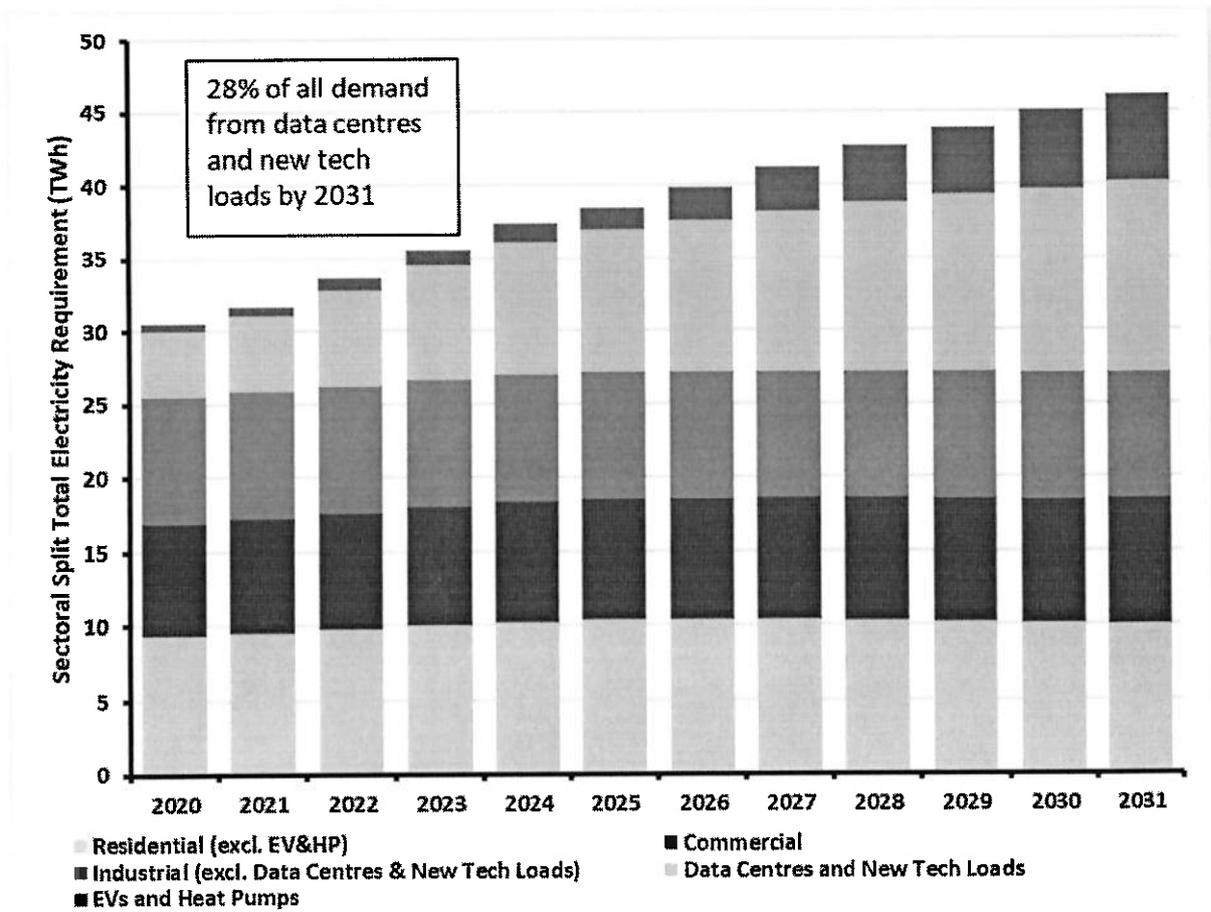


Figure 2.5 - For the Ireland median demand scenario, this illustrates the approximate split into different sectors. EirGrid estimate that 28% of total demand will come from data centres and new tech loads by 2031

(copy of figure from Eirgrid-SONI report<sup>26</sup>)

**Assumption of 80% Renewable Electricity in EIAR**

The EIAR assumes that the development benefits from 80% renewable energy on the grid in 2030. As discussed in the appeal, a realistic and precautionary worst-case assessment should assume that the data centre is supplied by increased output from fossil fuel power plants. The lowest emissions would be if the additional power is from combined cycle gas power plants. The resulting emissions of GHG for the proposed 73MW data centre would be as follows:

$$640 / (1-9\%) / 55\% \times 0.2047 = 261, 754 \text{ tonnes GHG (in the form of CO}_2\text{)}$$

Where 640 represents energy consumption of 640 GWh as per AWN report, 9% represents grid transmission loss, 55% the efficiency of the gas CCGT, and 0.2047 is the GHG emissions factor for natural gas.

<sup>26</sup> Ireland Capacity Outlook 2022-2031, Eirgrid-SONI, October 2022

In the AWN Additional Information response report the emissions are calculated to be 65,124 (assuming 80% renewable electricity with an emission factor of 0.1 kgCO<sub>2</sub>/KWh in 2030)

The ratio between my estimate and the AWN estimate is :  $261,754/65,124 = 4$

Consequently I believe a truer scale of the GHG impact would be conveyed by multiplying all of the projected emission values in the AWN report by a factor of 4. Applying this factor of 4 to the emissions estimates presented in Tables 1.8 and 1.9 of the AWN Additional Information response report, the emissions in 2030 under this scenario would be:

Proposed development:  $65,124 \times 4 = 260,496$  tonnes CO<sub>2</sub>eq/yr

Overall project:  $195,729 \times 4 = 782,916$  tonnes CO<sub>2</sub>eq/yr

### Effect of Data Centres on % Renewable Electricity

From the CSO table of metered electricity consumption (see below), it can be seen that total metered electricity consumption in 2022 was 29,500 GWh. SEAI data shows that the percentage of renewable electricity in 2022, was 36.8%<sup>27</sup>, which corresponds to 10,856 GWh.

As additional large loads are added to the electricity grid they have the effect of diluting and reducing the % renewables on the grid. The effect of data centre consumption on % Renewable Electricity under various scenarios is as follows:

Over the three years 2020, 21, 22 energy consumption by data centres increased by 2,774 GWh. If this increased data centre consumption had not happened, the % renewables in 2022 would have been:

$10856/(29500 - 2774) = 39.6\%$ , i.e. almost 3% points higher than the 36.8% reported for 2022.

The proposed development which has power consumption of 73 MW would add 639 GWh of energy demand and such a load if connected now would change the % renewables to:

$10856/(29500 + 639) = 36.0\%$ , i.e. almost 1%-point reduction on the 36.8% reported for 2022.

If there had been no increase in data centre energy consumption at all since 2015, the % renewables would be:

$10856/(29500 - 4016) = 42.5\%$ , i.e. almost 6% points more than the 36.8% reported for 2022.

<sup>27</sup> Key Insights from SEAI's 2022 National Energy Balance 5th September 2023, Version 1.1

**Assumption of 80% renewable supply in impact assessment of data centres invalid**

It is easy to see that there is a flaw in the assumption of 80% renewable electricity for new data centres. If one considers for example the case of a second hypothetical project with say a power consumption of 73 MW, i.e. the same as that of the proposed development. Would it be valid to say that it too can benefit from 80% renewable electricity on the grid? Could we add other hypothetical loads of 73MW, and at what stage would the assumption of 80% renewable electricity break down? One is reminded of the parable of the straw that broke the camel's back. The point is that each additional new load on the grid reduces the likelihood of achieving the 80% renewables, as each new load will require compensating additional renewables, beyond those planned, to ensure that the 80% renewable fraction is maintained.

**Why should 80% be assumed for rest of economy but not for data centres?**

The objective of CAP23 with respect to renewable electricity is to progressively decarbonise the electricity grid, and to provide the resulting reduced carbon electricity supply to power the existing electricity loads and to power the projected increased load in some sectors of the economy as these sectors progressively electrify.

For the ordinary industrial sector (excluding data sectors) and the built environment sector it is a reasonable assumption to expect that additional electrical loads in these sectors will be compensated by reductions in existing loads due to the increased efficiency of existing and future technologies. For replacement of facilities and equipment, it is also reasonable to assume that the replacements will be more energy efficient. These energy efficiency technologies are already currently commercially available. For these sectors therefore it is possible to reliably project decarbonisation through a trajectory to 80% renewables in 2030, as growth in these sectors can take place without significantly increased electricity demand.

Sectors of the economy which switch to electricity such as heating and transport will certainly require an increased electricity supply, but these technologies can avail of demand management which can maximise use of renewable electricity which would otherwise have to be exported or curtailed. But even if the target 80% renewable supply is not achieved because of growth in these sectors, this transition will still result in a reduction in national GHG emissions, which is the fundamental national objective. The reason for this is that heat pumps and e-cars are inherently at least 3 times more energy efficient than the fossil fuel alternatives. Even at present, with just 37% renewable electricity on the grid these technologies have substantially lower GHG emissions than petrol/diesel cars and fossil fuel central heating.

In carrying out environmental assessments which require modelling of GHG emissions from the industrial (excluding data centres) and built environment sectors to 2030, it is therefore quite reasonable and justifiable to base it on a trajectory to a target of 80% renewable electricity, as there is no inherent conflict between the expected evolution of electricity demand in these sectors of the economy, and the national targets in terms of renewable electricity and GHG reduction.

In contrast, a new data centre just represents an additional large electrical load on the national grid, causing additional GHG emissions, with no compensating reduction elsewhere in the state. As discussed, such loads reduce the % of renewable electricity on the grid, and the growth in their

energy consumption cannot credibly be compensated by the most optimistic projected deployment of renewables generation in the time frame to 2030, as set out in CAP23. Consequently an environmental impact analysis which assumes 80% renewable electricity supply to such developments is misleading as it masks and understates the actual net impact. It is consequently a more honest and transparent approach to assume that such developments are supplied by fossil fuel power stations. This approach represents the physical reality, as for each MW of increased data centre base load demand, the dispatchable generation from fossil fuel power plants must increase to match this demand, resulting in a net increase in GHG emissions.

**Impact Assessment Criteria used in the AWN Additional Information Response Report**

**Major or moderate adverse impact (significant):** A project that follows a 'business-as-usual' or 'do minimum' approach and is not compatible with the 'net zero' trajectory by 2050 or sectoral based transition to net zero targets, results in a significant adverse effect. It is down to the consultant completing the assessment to differentiate between the 'level' of significant adverse effects e.g. 'moderate' or 'major' adverse effects. A project's impact can shift from significant adverse to nonsignificant effects by incorporating mitigation measures that substantially improve on business-as-usual and meet or exceed the science-based emissions trajectory of ongoing but declining emissions towards net zero. Meeting the minimum standards set through existing policy or regulation cannot necessarily be taken as evidence of avoiding a significant adverse effect. This is particularly true where policy lags behind the necessary levels of GHG emission reductions for a science based 1.5°C compatible trajectory towards net zero.

**Minor adverse impact (not significant):** A project that is compatible with the budgeted, science based 1.5°C trajectory (in terms of rate of emissions reduction) and which complies with up-to-date policy and 'good practice' reduction measures to achieve that has a minor adverse effect that is not significant. The project may have residual impacts but is doing enough to align with and contribute to the relevant transition scenario. A 'minor adverse' or 'negligible' non-significant effect conclusion does not necessarily refer to the magnitude of GHG emissions being carbon neutral<sup>2</sup> (i.e. zero on balance) but refers to the likelihood of avoiding severe climate change and achieving net zero by 2050. A 'minor adverse' effect or better is a high bar and indicates exemplary performance where a project meets or exceeds measures to achieve net zero earlier than 2050.

**Negligible Impact (not significant):** A project that achieves emissions mitigation that goes substantially beyond the reduction trajectory, or substantially beyond existing and emerging policy compatible with that trajectory, and has minimal residual emissions, is assessed as having a negligible effect that is not significant.

IEMA Criteria in EIAR. Extracts from AWN Report page 18.

Copy of original Submission  
to be included in appeal

Planning Department  
Fingal County Council

Colin Doyle  
12 Cottage Gardens  
Ennis  
Co. Clare  
30/1/2023

Sent electronically

**Ref: FW22A/0308**

**Submission on Application by Universal Developers LLC Data Centre Development**

A Chara,

I have concerns regarding the Proposed Development with regard to the emissions of Greenhouse Gases (GHG) and the resulting significant adverse impact, within the framework of Ireland's climate change policy and legal GHG reduction obligations. Furthermore I have concerns regarding the proposed mitigation in the form of Corporate Power Purchase Agreements (CPPAs).

I ask Fingal County Council to request the following Further Information from the applicant which will assist the Planning Authority in reaching a decision:

1. Analysis of the impact of the Proposed Development in the context of Ireland's 51% GHG reduction target for 2030, and Ireland's declared GHG Emissions Ceiling of 3 Mt for the Electricity sector by 2030. Such analysis is entirely absent from the EIAR.
2. Details and analysis to demonstrate that the CPPAs contracted represent additional renewables capacity. Such details and analysis are entirely absent from the Energy Statement and from the EIAR.

#### **1. Concerns regarding Climate Impact**

In the EIAR the quantitative GHG impact of the development and the cumulative impact is considered only in the context of the EU Emissions Trading Scheme (ETS). Cumulative impact is stated to be no more than 0.046% of total EU-wide ETS market which is described in the EIAR as "imperceptible". While emissions in the context of the EU may be very small, this is of no relevance in the national context. Compliance with ETS requirements does not imply compliance with national policy. This is in fact pointed out in the EIAR:

"Under the ETS scheme, there are no country-specific targets: the scheme works on a "cap and trade" principle ...."

While there is no specific EU ETS target for Ireland, there are national GHG reduction targets for the Irish ETS sector. These targets are much more onerous than the EU ETS reduction targets for 2030. National GHG reduction policy has clearly set out additional reduction requirement for the Irish ETS sector which must be taken into consideration by planning authorities.

The relevant national policy and legal framework are mentioned in section 9.1 of the EIAR, and are: Climate Action Plan 2021, and Climate Action and Low Carbon Development (amendment) Act 2021. The latter sets a legally binding GHG reduction target of 51% by 2030 (re 2018). While this national target was mentioned in the EIAR no attempt was made to consider the implications of the Proposed Development for achieving this target, or its overall impact in the context of this target.

The EIAR shows the national carbon budget in Table 9.5, but fails to point out that according to the latest EPA report<sup>1</sup> no progress has been made in reducing emissions in the first budget period to 2025. This makes any additional emission of GHG a significant impact, i.e. there are at present no compensating reductions.

In section 9.7.2.3 of the EIAR it is stated:

"The indirect CO<sub>2</sub> emissions from electricity to operate the facility will not be significant in relation to Ireland's national annual CO<sub>2</sub> emissions."

The above statement is manifestly incorrect, and cannot be reconciled with the estimated GHG emissions of 202,139 tonnes/year from the Proposed Development, and the 607,523 tonnes cumulative emissions of the Proposed Development along with existing permitted and planned future developments (figures given in section 9.5.2.2 of EIAR).

In the context of the legally binding national GHG policy to reduce emissions by 51% over the coming decade, any increase in emissions would have to be considered a significant adverse impact.

National sectoral GHG emissions ceilings were published in September 2022, and these are presented in Table 9.6 of the EIAR. Of relevance to the Proposed Development is the emissions ceiling for the Electricity sector. This sector is supposed to reduce its emissions by 75% by 2030, at which point a GHG emissions ceiling of 3 million tonnes/year is specified. There is no assessment in the EIAR of the impact of the Proposed Development nor of the cumulative GHG impact in the context of this important national objective.

It is evident that any increase in emissions from the Electricity sector is going in the wrong direction and seriously threatens attainment of the national target. Indirect GHG emissions from the proposed development of 202,139 t/yr would represent 7% of the emissions ceiling for 2030, and the cumulative GHG emissions of 607,523 t/yr would represent 20% of

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<sup>1</sup> Ireland's Greenhouse Gas Emissions Projections 2021-2040, EPA, June 2022

the emissions ceiling for 2030. These represent significant adverse impacts, which were not addressed in the EIAR.

In section 9.7.2.4, emissions of the pollutants NO<sub>x</sub>, SO<sub>2</sub> and NMVOC were assessed against the relevant national emissions ceilings. This indicates that the consultants who prepared the EIAR were aware of the need for an assessment against national emissions ceilings. They did not assess GHG emissions against national emissions ceilings, which is a striking inconsistency which led to a flawed conclusion.

## 2. Concerns Regarding Proposed Mitigation

The Proposed Development, with a power demand of 73.1MW (NTS, P.9), will immediately cause large indirect additional emissions of GHG of 202,139 tonnes/year from power plants connected to the national grid.

The applicant states that these emissions will be offset by renewables generation through Corporate Power Purchase Agreements (CPPAs) with wind farms in Cork, Donegal and Galway, with a total installed wind capacity of 229 MW. If this represents additional wind energy capacity, which would not have occurred otherwise, then it could be validly claimed that the emissions from the Proposed Development have been offset<sup>2</sup>.

However there is insufficient information provided in the EIAR or in the Energy Statement to enable this claim to be objectively verified. The windfarms have not been identified, and no information was provided on the planning history of these windfarms. If it is the case that these wind farm projects were already planned and in the national wind energy planning pipeline prior to the CPPAs, or were already projected in County Development Plans, then there would be no additionality, and from the national perspective no benefit. These projects may have progressed in any event.

CPPAs are a recent development in the context of Ireland's national renewable energy strategy, and exactly how these can contribute to national targets has not been fully defined. Climate Action Plan 2021 (CAP 2021) included consideration of the role of CPPAs in achieving national renewables targets, but with no specific proportion of the target assigned to CPPAs. Under Action 99 of CAP 2021 it was planned to publish a High Level Roadmap on Corporate Power Purchase. This roadmap was published in 2022<sup>3</sup>. A key concern with CPPAs is that they should demonstrate additional renewables generation, and result in a reduced costs to consumers. The CPPA Roadmap states (P.8):

“Additionality and Avoiding Greenwashing: If CPPAs simply purchase certificates from projects that would have existed anyway, especially those that have already been funded under schemes supported by the PSO levy (REFIT schemes or the

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<sup>2</sup> 229 MW installed wind capacity could generate approximately 70MW annual average, at a capacity factor of around 0.3, which would approximately offset the expected load of the Proposed Development

<sup>3</sup> Renewable Electricity Corporate Power Purchase Agreements Roadmap, Government of Ireland, March 2022

RESS), they may not contribute to additional decarbonisation, which would not achieve the benefits of such contracts for all electricity users and harm public trust. CPPAs for new non-subsidised or repowered projects should be prioritised.”

Claiming an offset from a CPPA is not simply a matter of nominating wind farms where a contract has been signed. A full analysis is required to demonstrate that the development would not have proceeded, or would not have continued to exist in the absence of the CPPA. The CPPAs in themselves are complex contracts, and details of these contracts would have to be submitted to the planning authority for review to determine compliance with national policy.

Further information should be requested from the applicant regarding details of the CPPA contracts, along with an analysis report which demonstrates that the contracted renewables generation is in fact additional.

Yours sincerely

**Colin Doyle Ph.D.**

**Qualifications:**

BA (mod) Physics, M.Sc. Physics, PgDip Environmental Pollution, Ph.D. Climate Science

**Relevant Experience:**

Over twenty five years working in environmental science in Ireland, as a consultant in the preparation of environmental impact assessments, and emissions monitoring for a wide range of industrial and commercial projects.

Copy of submission on Additional Information  
to be included in appeal

Planning Department  
Fingal County Council

Colin Doyle  
12 Cottage Gardens  
Ennis  
Co. Clare  
23/08/2023

Sent by email

Ref: FW22A/0308

Submission on Further Information

Universal Developers LLC Data Centre Development

A Chara,

### 1. Introduction

The primary concern in my original submission was with regard to the climate impact of the proposed development. I am not in any way reassured by the Further Information provided.

In assessing the sustainability of large energy user projects such as data centres the Planning Authorities are faced with an enormous challenge in attempting to sift through the various sustainability claims of the applicants, while giving due consideration to the critiques of objectors.

A particular difficulty faced by Planning Authorities is that while Ireland now has carbon budgets established in law, there is a lacuna in how emissions from new developments are assessed at a national level in terms of compliance with national targets. It is hard to believe, but it is the case, that there is no national statutory body or authority which can prioritise essential developments, assess proposed mitigations, and ensure equitable allocation of the remaining national carbon budget. This heavy responsibility falls on the Planning Authorities, who have been provided with absolutely no guidance on how to decide these matters.

The proposed development will consume large quantities of electricity which will result in increased emissions of greenhouse gases (GHG) from power plants. These are termed "indirect emissions". Operation of electricity markets is an exceedingly complex area, and GHG offset accountancy procedures are also complex, and open to various interpretations. The applicant has access to vast scientific, engineering and legal resources, and the onus therefore lies squarely on the applicant to provide straight answers to the further information requests. Furthermore, the applicant has the responsibility and the resources to make a clear case regarding the claimed environmental sustainability of the proposed development in terms that both the Planning Authority and the public can readily understand.

For the present application Fingal County Council is entirely reliant on the accuracy and reliability of the EIAR submitted, and in the Further Information to flag potential breaches of national laws and policies on climate impacts. I submit that the EIAR and Further Information submitted is deficient, and in error in many respects. It cannot be relied upon to form a basis for granting planning permission.

I consider that the information sought by Fingal County Council regarding climate impact has not been satisfactorily provided. The applicant's responses are confusing, repetitive, include much unsolicited irrelevant information, and in a number of respects are evasive, and misleading. I summarise here in section 2 the core issues and my significant concerns, which I will discuss further in section 3 of this submission:

## **2. Summary of Inadequacies in FI Responses Regarding Climate**

### **Item 1(d)**

#### **IEMA Climate Impact Assessment**

I conclude from the data presented in the AWN report (Table 1.10, P. 43) that the climate impact is at least "minor adverse", and possibly "major adverse". The overall assessment by AWN that the operational impact will be "minor adverse" and "non-significant" is fundamentally flawed, and cannot be justified based on the information presented.

#### **Reliance on Mitigation Measures Outside Control of Applicant**

Maximum assumptions have been made with respect to mitigation measures being achieved at national level which are completely outside of the control of the applicant.

#### **Reliance on Corporate Power Purchase Agreements (CPPAs) as a Mitigation**

The climate impact assessment hinges critically on the credibility of the mitigation measures proposed by the applicant. The three wind farm projects mentioned by the applicant have been many years in the planning system, have been approved, and would have proceeded in any event. Claiming these projects as offsets is invalid.

### **Item 1(e)**

#### **Carbon Emissions During Construction**

Regarding carbon emissions during the construction phase, the applicant has taken a minimalist interpretation of the Further Information request, and has excluded embodied carbon in the very large quantities of concrete and steel used in the construction. This greatly underestimates the carbon impact of the project.

### **Item 3(b)**

#### **Use of Renewables by Existing Development**

The applicant has explicitly refused to answer the question regarding renewables used by the existing development, on the dubious basis that as the Government policy is "forward looking" only, i.e. they do not have to address the energy use of the existing development.

#### **Irrelevant Unsolicited Further Information**

There are repetitive references in the Further Information to the commitment of the applicant's parent company to powering its worldwide operations from renewable energy. This is not relevant in the Irish planning context and just serves to confuse and evade provision of specific relevant information sought by Fingal County Council in the Irish context.

### 3. Discussion of Misrepresentations and Errors in Further Information Provided

#### **IEMA Climate Impact Assessment**

*I conclude from the data presented in the AWN report (Table 1.10, P. 43) that the climate impact is at least "minor adverse", and possibly "major adverse". The overall assessment by AWN that the operational impact will be "minor adverse" and "non-significant" is fundamentally flawed, and cannot be justified based on the information presented.*

The updated EIAR provided in the AWN report includes useful additional quantitative information which enables the impact of the development to be assessed according to IEMA methodology. Referring firstly to Table 1.9, and leaving aside for the moment the very ambitious underlying assumptions for renewables on the national grid, we see that the cumulative emissions of the overall project are projected to be 195,729 tonnes CO<sub>2eq</sub> per year in 2030 (overall project = existing + proposed + future).

Ireland has a target to reduce emissions by 51% by 2030, so in accordance with IEMA guidelines any projected increase in emissions is considered a significant adverse climate impact. The judgement of the environmental practitioner is used to determine if the adverse impact is "moderate" or "major". Table 1.10 of the AWN report restates the projected emissions as a percentage of the European Emissions Scheme (ETS) emissions, and as a percentage of the national emissions ceiling for the Electricity Sector. The percentage as a fraction of the ETS is not relevant in the Irish context, as the ETS is governed centrally in the EU, with no specific national targets. The percentage of the national emissions ceiling is however quite relevant to consider.

The assessed significance of impact is given as "moderate adverse". Note this column is headed "Significance (prior to mitigation)". This is highly misleading as maximum assumptions of national mitigation in terms of renewable electricity have already been factored into the analysis. The assessed "moderate adverse" impact therefore represents the residual impact of the project, allowing for assumed achievement of national renewables targets for electricity in 2030. The final column of this table reduces the assessed impact to "minor adverse, non-significant" based on the list of mitigation measures presented in pages 42 and 43 of the AWN report. The only listed mitigation measure that could explain the reduction from "moderate" to "minor" is the claimed CPPA. However, no evidence has been provided that the existing or proposed CPPA would result in additional renewables which could off-set the projected emissions. It must therefore be concluded that the residual impact is at best "moderate adverse". Given that the overall project is projected to consume 6.5% of the national emissions ceiling for the Electricity Sector in 2030 a good case can be made for classifying the impact as "major adverse".

#### **Reliance on Mitigation Measures Outside Control of Applicant**

*Maximum assumptions have been made with respect to mitigation measures being achieved at national level which are completely outside of the control of the applicant.*

The emissions data presented in Tables 1.7, 1.8, 1.9 are absolutely best-case estimates, and assume that the state achieves all of its renewable electricity targets by 2030. The projections are based on an assumed emissions factor for the electricity grid of 0.1 kgCO<sub>2eq</sub>/KWh in 2030, compared with the current emissions factor of 0.35 kgCO<sub>2eq</sub>/KWh. Considering the high rate of refusal for renewables projects in recent years, this low emission factor in 2030 is by no means guaranteed. It would have been prudent to have made a conservative estimate of the assumed emission factor, in accordance with IEMA guidelines, which state:

“The assessment should seek to present a reasonable worst case” (IEMA Guidelines ,P15).

It is a principle of planning that mitigation measures should either be under the complete control of the applicant to ensure implementation, or if reliant on other parties that there is an absolute irrevocable commitment and guarantee that the measures will be implemented. For example it is unlikely that planning permission could be validly granted for a large residential development with no access to a road or a WWTP, on the basis that there is a plan to have these facilities in place by 2030. Likewise, it would be premature to grant permission for a large energy user such as a data centre in the absence of the required mitigation infrastructure.

### **Reliance on Corporate Power Purchase Agreements (CPPAs) as a Mitigation**

*The climate impact assessment hinges critically on the credibility of the mitigation measures proposed by the applicant. The three wind farm projects mentioned by the applicant have been many years in the planning system, have been approved, and would have proceeded in any event. Claiming these projects as offsets is invalid.*

### **Overview of CPPAs**

The response from the applicant implies that CPPAs inherently represent a mitigation measure. This is a common misunderstanding. While CPPAs present benefits for the development of renewables, it does not follow that one can claim them as an offset against additional emissions brought about by a development.

Corporate Power Purchase Agreements provide a valuable support for renewable energy projects, and also provide financial security for the corporation purchasing the power. In the case of a wind farm the price paid in the CPPA will be higher than the guaranteed minimum price which would have been secured in an open auction, and if the CPPA is for a long-term contract this contributes to a stable investment return. The power purchaser also benefits in negotiating a fixed future price for its energy, i.e. price hedging. When gas prices are high, as has been the case since the start of the war in Ukraine, the purchaser is insulated from the increasing price of electricity. CPPAs are private contracts so it is not possible to quantify these savings accurately. But just for illustration, at present corporations with CPPAs in place for renewable energy are most likely paying less than 15 cents per unit of electricity, while the rest of the consumers in the state are typically paying in excess of 40 cents per unit. On the other hand if gas prices reduce substantially, the price of renewable energy may drop to the minimum guaranteed price, and the CPPA will result in the purchaser paying more than the market rate. An additional benefit of a CPPA is that the purchaser is exempt from the excise duty known as Electricity Tax, which is a small saving of €1/MWhour.

Irish government policy has promoted CPPAs primarily as a means of reducing the need for public subsidies for renewable electricity generation. These subsidies appear on the consumers' bills as a Public Service Obligation (PSO). However, the costs of renewable generation have been steadily declining in recent years, and the need for PSO is diminishing. In 2022, the PSO was negative, which represented a refund to consumers. For the coming year the PSO will be zero. Thus the benefit of CPPAs in reducing the need for public funding supports for renewables is at present a moot point, as the expectation is that the cost of generating renewables will continue to be substantially lower than gas fired power generation, and there will be no need for public subsidies.

There is no requirement for a CPPA to demonstrate additionality, unless the power purchaser is claiming that the renewables purchased offset other GHG emissions caused by the purchaser. 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.

### **GOs**

Corporations can additionally support renewables generation through the purchase of Guarantee of Origin certificates (GOs), or simply by sourcing electricity from a supplier who either owns renewables capacity, or who in turn purchases GOs. This is a market mechanism whereby operators of renewable generation can sell these certificates to generate additional revenue. The GOs are tradeable internationally, and there is no requirement for the renewables generation to feed into the purchaser's electricity grid. GOs from mainland Europe or Iceland could for example be purchased by Irish companies, even though there is no physical electricity connection. GOs are simply a market support mechanism to enable customers to express a preference for renewable supplies, and do not imply any measures of GHG offset for the purchaser.

For the existing development (FW17A/0025/ABP PL06F.248544 and FW19A0087), the only mitigation measures volunteered and required were in the form of Guarantees of Origin (GOs). As explained above these GOs do not represent a GHG offset which could validly be claimed by the purchaser.

### **Claimed Existing Wind Farm CPPA Offsets**

As mentioned earlier, the Applicant has adopted a minimalist approach to providing further information. This extends to withholding the identities of the three wind farms mentioned in their FI response, other than they are in Cork, Galway and Donegal. It is left as an exercise for Fingal county Council and the public to find further details.

From a trawl of publicly available information and planning files, I conclude that the three CPPA wind farms referred to are as follows:

Amazon Esk 23MW in Cork  
Arderoo 115MW, Galway  
Meenbog 91MW, Donegal  
Total 229 MW

To claim that these wind farms offset emissions from the proposed development it would need to be demonstrated that these wind farms would not operate without the CPPAs negotiated with the applicant. The planning history for these wind farms indicates that they had all progressed through the planning system prior to any CPPA.

Amazon Esk is an existing operating windfarm in County Cork. Planning for wind generation at this location was in progress over ten years ago. Planning permissions were applied for by Esk Windfarm Ltd. In 2011 and 2014, and granted in 2012 and 2015 respectively (Cork Ref 11/5276, 14/ 5602). I presume that Amazon Esk refers to contracted CPPA generation from one or both of these sites, or that Amazon has perhaps purchased the wind farm. In either case this renewable capacity would have existed in any event and does not represent additional renewables capacity in the national grid which could be claimed as a GHG offset.

Ardderroo Wind farm in County Galway was initially proposed over seven years ago. An application by Ardderroo Windfarm Ltd in 2015 was refused by An Bord Pleanála (ABP) for the reason of a deficient bat and bird survey methodology (07.PA0036). A subsequent application in 2018 by the same applicant was granted by ABP in 2019. Connection contracts were issued by the Transmission System Operator (TSO) in October 2018. It is not credible that this development would have been

reliant on a CPPA or indeed purchase of the windfarm by Amazon or other corporate entity in order to proceed.

Meenbog Wind Farm in County Donegal 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). I understand from the TSO Contracted Wind Farms list that a grid connection contract was signed in December 2019.

Having received planning permission and grid connection contracts, it is not credible that the developers of the Ardderroo and Meenbog windfarms would have been reliant on a CPPA or indeed purchase of the windfarms by Amazon or other corporate entity in order to proceed. Given the ambitious national targets for renewable electricity there is no doubt but that these projects would have proceeded in the absence of any commercial arrangement with the applicant. There is therefore no additionality represented by these CPPAs.

The applicant has indicated that they will continue to pursue commercial arrangements for renewable energy delivery in Ireland. Presumably this is through CPPAs or perhaps purchase of generating assets. In the response they indicated that they have received submissions totalling 1 GW capacity. Unfortunately they cannot share any details as these are confidential, and therefore it is not possible to analyse this proposal. If, as I strongly suspect they are referring to projects already in the development pipeline then there would be no additionality of renewable energy. According to the Transmission System Operator (TSO) there are approximately 1.4GW of planned wind farm capacity with connection contracts. All of these projects have been in the development pipeline for many years, and the applicant would be free to agree to purchase power from any or all of these projects. This would be commercially beneficial to the applicant, its parent company, and the wind farm developers. But it would make absolutely no difference to overall national GHG emissions, and would not result in a single MW of additional renewables capacity.

#### **Item 1(e)**

##### **Carbon Emissions During Construction**

*Regarding carbon emissions during the construction phase, the applicant has taken a minimalist interpretation of the Further Information request, and has excluded embodied carbon in the very large quantities of concrete and steel used in the construction. This greatly underestimates the carbon impact of the project.*

The Report by Henry J Lyons has confined the assessment of impact to Transport and Construction (items A4 and A5 in the assessment methodology). The carbon associated with raw materials and manufacture has been excluded (items A1 to A3 in the methodology). Based on the quantities of concrete and steel listed in the report, and using typical factors for associated emissions, I calculate emissions of over 27,000 tonnes, which would be 664kgCO<sub>2eq</sub>/m<sup>2</sup>, when added to the approx. 100/m<sup>2</sup> for A4 and A5 gives a total of 764 kg/m<sup>2</sup>. This is more than seven times the estimate by Henry J Lyons.

#### **Item 3(b)**

##### **Use of Renewables by Existing Development**

*The applicant has explicitly refused to answer the question regarding renewables used by the existing development, on the dubious basis that as the Government policy is "forward looking" only, i.e. they do not have to address the energy use of the existing development.*

Regarding renewable electricity for the proposed development, the applicant has provided no proof of additionality. While CPPAs in Ireland are mentioned, the applicant has refused to provide details of renewable energy in Ireland on the basis that:

“We do not release a breakdown of energy use or renewable energy generation in individual regions”.

A plausible reason for refusal to provide this information is that the putative renewables assigned to the existing development, as described in the planning files, derived from Guarantee of Origin certificates (GOs). Such GOs can be purchased at a very low price in the international carbon markets and could represent renewables generation outside of Ireland, with no proof of additionality.

The applicant’s request for a grant of planning based on a condition requiring CPPA should be rejected on the basis that the applicant has already claimed to have this CPPA in place, but refuses to provide proof of additionality. Furthermore, the proposed specific formulation of the condition would enable the applicant to enter into a CPPA with a project which has already been approved and which has a grid connection contract, i.e. it would have happened anyway.

#### **Irrelevant Unsolicited Further Information**

*There are repetitive references in the Further Information to the commitment of the applicant’s parent company to powering its worldwide operations from renewable energy. This is not relevant in the Irish planning context and just serves to confuse and evade provision of specific relevant information sought by Fingal County Council in the Irish context.*

While the FI response contains much general promotional information on Amazon’s laudable commitment to renewable energy worldwide, the core issue is whether the existing and proposed CPPAs in Ireland actually represent mitigation, which the applicant has failed to demonstrate. This would require the applicant to demonstrate that indirect emissions from electricity generation would be higher in the absence of the contracted CPPA. In other words one would have to prove that the renewable energy was additional, i.e. the renewables project would not have happened without the CPPA. As no supporting evidence has been provided by the applicant, and from a review of the planning history of the wind farms, I submit that there will be no additionality associated with the CPPAs mentioned by the applicant.

#### **Conclusion**

I ask you to refuse planning permission for the following principal reasons:

- The applicant has not provided the requested further information.
- The claimed CPPAs offer no renewables additionality.
- The revised impact assessment data presented by AWN shows a likely “moderate” to “major adverse” climate impact.

Mise le meas,

**Colin Doyle, Ph.D.**

Qualifications:

BA (mod) Physics, M.Sc. Physics, PgDip Environmental Pollution, Ph.D. Climate Science