Submission	
Submitter:	Mr Colin Doyle
Submission Title:	Submission by Colin Doyle P 1202-01
Submission Reference No.:	S011466
Submission Received:	13 January 2024
Application	
Applicant:	Crag Arklow Limited
Reg. No.:	P1202-01

See below for Submission details.

Attachments are displayed on the following page(s).

Submission on Application by Crag Arklow for Industrial Emission Licence : P1202-01

My main concern regarding the Proposed Development is with regard to the cumulative climate impact and the resulting significant adverse impact, within the framework of Ireland's climate change policy and legal greenhouse gas (GHG) reduction obligations.

In my view the EIAR submitted by the applicant in support of the licence application is inadequate. In accordance with (Environmental Impact Assessment) Regulations 2018 (S.I. No.296 of 2018), and the EPA Act 1992 (as amended) the EPA is required to review the EIAR (attachment 6-3-6) submitted with the IE licence application. I ask the EPA to take account of my submission in their review.

I set out my concerns in the following numbered points which describe a number of significant errors, defects and inadequacies in the documents submitted by the applicant.

Errors, Defects and Inadequacies in the EIAR

1. Having studied the climate section of the EIAR (attachment 6-3-6 in the EPA IE portal), I conclude that it contains serious errors and other deficiencies, and does not form a reliable basis for reaching a reasoned conclusion as to climate impact.

2. In Section 8.9.2.2 of the EIAR the GHG emissions are stated to be 448.3kt CO2/yr. I believe this calculation was based on a flawed assumption, and that the actual emissions may be more than twice this amount (as clarified and quantified later in this submission). The climate impact is stated to be as follows:

   > "The overall combined operational phase GHG emissions, after mitigation, due to the operational phase of the proposed development will be direct, long-term, negative and slight." (8.9.2.2)

3. In section 8.11 under the heading Residual Impact, it is stated:

   > "If the mitigation measures outlined in Section 8.7 are implemented, there will be no residual impacts of significance on air quality or climate from the construction or operational phases of the proposed development."

With regard to the above statement it should be noted that there were no mitigation measures for GHG emissions in Section 8.7.

4. The above assessments of climate impact were made on the basis of the specious and misleading argument that emissions will be only a tiny fraction of EU-wide ETS emissions. It is true that the emissions will be small in the EU context, but it is misleading to imply that the resulting impact is “slight” or “not significant”. Emissions of over 400ktCO2/year (or over twice that by my estimate) would have to be considered a significant impact in the national context.

5. The EIAR was prepared in August 2021, and I will discuss inadequacies in the EIAR with reference to the policies strategies and laws in force at that time. International and national GHG policies, and legal obligations were accurately described in section 8.2.1.4 of the EIAR. However, there was no assessment of impact relative to national targets.

6. The EIAR referred to the national reduction target of 51% in GHG emissions by 2030, but failed to assess the impact of the additional GHG emissions in the context of this target. Clearly an increase in GHG emission would have an adverse impact on achieving the target.

7. Climate Action Plan 2019 (CAP 2019) was referenced, but there was no consideration of the impact of the project in the context of the indicative emissions target for the Electricity Sector in 2030. This target for 2030 was in the range 4-5 MtCO2eq (and has since been revised down to 3 MtCO2eq in CAP23). Estimated GHG emissions of over 400 kt as presented in the EIAR would obviously have a severe adverse impact on achieving the indicative target range by 2030. There was no comment on this aspect in the EIAR.

8. A significant feature of the Climate Act 2015, CAP 2019, and in the draft 2021 Climate Bill is that climate policy at time of preparation of the EIAR in 2021 specifically and unambiguously included the Irish ETS-sector in the national GHG reduction efforts. Previously this sector had been left to its own devices within the EU-ETS.

9. CAP 2019 was the first published national strategy which set indicative national GHG emissions reduction targets for the Irish ETS sector. Operators within the ETS would naturally still operate within and be subject to the ETS system, but there would also be additional national measures aimed at reducing GHG emissions from this sector.

10. This crucial change in national policy and legal obligations was not addressed in the EIAR. The EIAR ignored the impact of the development on national targets based on the flawed reasoning that the development would be operating within the EU-ETS, and strongly implied that it would not be subject to any national GHG

considerations. The EIAR also suggested explicitly that the GHG emissions would be adequately accounted for and controlled within the EU-ETS, as stated in section 8.2.3.2:.

> "Any associated GHG emissions associated with the operation of the engines will be captured under the ETS which will have to meet a target of a 61% reduction by 2030 based on annual reductions of 4.2% compared to the previous annual reduction level of 2.2% per year (European Commission, 2021c) and thus it is likely that there will be a gradual reduction in GHG emissions from the facility under the facility's ETS Permit." (emphasis added)

11. The above statement regarding gradual reduction in GHG is false and misleading. The methodology used in the EIAR to assess the significance of climate impact was also quite primitive and misleading. Essentially it expressed the GHG emissions from the development as a fraction of the emissions from the entire EU-ETS, and as the resulting percentage was small, the impact was judged to be "slight". As stated in the EIAR:

> "On an EU-wide basis, the ETS market in 2019 was approximately 1,390 million tonnes CO2eq, the impact of the emissions, which are regulated under the ETS, associated with the facility is less than 0.032% of the total EU-wide ETS market, based on the proposed development emissions." (8.9.2.2, p.20)

12. Obviously, dividing the GHG emissions by a very large number worked out to be a very small percentage, and the impact was described as mentioned earlier as "slight" and "not significant". If this simplistic criterion were accepted, then any project in Ireland, operating within the ETS, emitting hundreds of thousands, or even millions of tonnes of GHG would be assessed as having only a "slight" impact.

13. It is evident that there is something fundamentally wrong with the methodology in the EIAR. There would be no point in conducting climate impact assessments at all, if the methodology results in all climate impacts being inevitably assessed as "slight".

14. The EIAR emphasises the role of the ETS, and that operators within the ETS must hold a GHG emissions permit. It follows this with a statement that GHG emissions would not impact on Ireland's obligations under the Effort Sharing Decision (i.e. reduction requirement for non-ETS sectors).

> "As the proposed development is over 20 MW, a greenhouse gas emission permit will be required for the facility which will be regulated under the EU-wide Emission Trading Scheme (ETS). The facility will form part of the ETS and thus greenhouse gas emissions from the facility is not included when determining compliance with the targeted 30% reduction in the non-ETS sector i.e. electricity associated greenhouse gas emissions will not count towards the Effort Sharing Decision target. Thus, any GHG emissions due to

> facility will have no impact on Ireland's obligation to meet the EU Effort Sharing Decision." (ch. 8, p.20)

15. It is of course true that the development would require emissions and GHG permits, for which the EPA is the Competent Authority. However the narrative in the EIAR created the impression that the GHG emissions would be subject to EPA approval. The EPA's function as the designated competent authority is a technical one of verifying for each ETS operator and for each new entrant that their monitoring and verification systems are adequate. It has no role in approving GHG emissions in the context of national carbon budgets.

16. The reference to the Effort Sharing Decision in the EIAR is irrelevant to the proposed development, as it would clearly be operating within the ETS. The reference to meeting "Ireland's obligation" was unhelpful, as it risked misleading the PA into thinking that the development would have no impact on national targets. Omission from the EIAR of any assessment of GHG impact in the national context reinforced the impression that there was no need to consider the impact in the national context, as it would be "captured" under the EU ETS as stated in 8.2.3.2.

Comments on Planning Report

17. It appears from the planning report (6-3-2, WCC 21/1080), that the PA may have been misled by the information provided in the EIAR as described above. I refer to page 50 of the Planning Report where in the context of the EPA Act it is stated:

> "It is therefore considered that the proposed development and associated emission are covered under the IED licence which is under the jurisdiction of the EPA."

and

> "….it is noted that the submitted EIAR refers in places that emissions to the environment will be controlled by an EPA licence and are therefore not assessed in detail."

18. The PA apparently accepted the assessment of GHG emissions in the context of the EU only:

> "From the submission, it is noted that the impact of the emissions from the proposed development is negligible on EU scale."

And reached the overall conclusion:

> "Having reviewed the schedule of significant impacts and remedial and mitigation measures in supplementary information submitted in conjunction

> the EIAR, it is considered proposed mitigation measures are satisfactory and therefore acceptable."

19. The applicant had provided further information on the emissions from the development which are detailed in a table on page 50 of the Planning Report. It is notable that CO2 was not listed as an emission to atmosphere. That this was accepted by the PA without question supports my assessment that the PA assumed that GHG emissions were a matter for subsequent consideration by the EPA or would be adequately dealt with in context of the ETS.

Misleading Assessment Methodology Reliant on EU ETS

20. As outlined above, the EIAR misleadingly implied that GHG emissions would be "captured" by the ETS and would be subject to a reduction target. It is factually not correct to state that operating within the ETS would be likely to reduce GHG emissions from the development. The ETS operates on a cap and trade market mechanism, which ensures that on an EU-wide scale GHG emissions from the ETS sector will definitely decrease to the desired target in 2030. However there is no mechanism in the EU ETS to require specified emissions reductions from any individual operators. An operator can emit whatever quantity of GHG is required for its facility, provided it pays for the emissions allowances. Thus emissions could also conceivably increase with time, provided the business is profitable enough to afford purchase of the emissions allowances.

21. Furthermore, for a new development designed in accordance with best available technology principles there is no credible technical scope for achieving significant emissions reductions on the time scale of a decade.

Error in Estimated GHG Emissions

22. From my study of the narrative and analysis of data in the supporting documents I conclude that there was a significant error in the estimated GHG emissions. A possible source of this error is confusion between the electrical and thermal ratings of the energy centre. The EIAR states that the Energy Centre will have an overall power rating of 250MW. I interpreted this as 250 MW electrical, which would be the default understanding. However, the cover letter submitted with the original planning application mentions "thermal":

> "5.9 Energy Centre 1 will provide thermal power output of c. 100MW, while Energy Centre 2 will provide c. 150MW, allowing for a maximum peak level of generation on site of 250MW." (John Spain Associates planning application letter 21st August 2021).

23. The consultants who prepared the EIAR also claimed that the project was below the threshold for a mandatory EIAR under the EIA Directive:

> "The project proposed is not listed under Annex I of the EIA Directive and it is below the relevant threshold as set out in the Planning and Development Regulations 2001-2019 for Annex II projects." (EIAR NTS, p.2)
>
> "The proposed development is not listed under Annex I EIA Directives." (EIAR 1.2.1, p.2)

24. The relevant threshold is 350MW thermal, which indicates that the consultants interpreted the 250 MW power rating as thermal output.

25. The estimated GHG emissions in section 8.9.2.2 of the EIAR appear to be calculated assuming that the power rating referred to thermal output, as the value I have calculated based on this assumption agrees with the value in the EIAR. I calculate the emissions based on 250MW thermal, fuelled by natural gas as follows:

    250MW(th) x 8760hr x 0.204 t/MWh(th) = 446,760 tCO2 = 447ktCO2/yr

    The estimated emission in the EIAR is 448 ktCO2/yr, which agrees closely with the above calculated value. I conclude that the EIAR was internally consistent in considering the power rating to refer to thermal output.

26. This interpretation is continued in the Project & Threshold Planning attachment 6-3-7. In Table 1 of this attachment it is stated that the threshold set out in Schedule 5 of the Planning and Development Regulations 2001 (as amended) was not exceeded.

    > "EIA threshold not exceeded.
    > Heat output of power generation facility will
    > be in the order of 250 MW (< 300 MW)."

27. The Operational Report (4-8-1) however explicitly uses the correct subscripts to differentiate between electrical and thermal rating, i.e. MWe and MWth. In section 1 of the report the power ratings are given as 100MWe for Energy Centre 1, and 150MWe for Energy Centre 2. According to these figures the total electrical power output for the two energy centres would be 250 MWe. Section 3.1, provides data on the thermal power rating as follows:

    > "Each individual gas engine unit will have a rated thermal input of approx. 19.355 MWth. Within Energy Centre 1, the 12 no. reciprocating gas engines will have a total rated thermal input of approx. 232.26 MWth (capable of generating 100 MWe). Within Energy Centre 2, the 18 no. reciprocating gas engines will have a total rated thermal input of approx. 348.38 MWth (capable of generating 150 MWe). "

28. The above indicates that the total thermal power rating of the two energy centres is 580.64 MWth. There is evidently a factor of more than 2 between the assumed thermal power in the EIAR and the value given in the Operational Report. This discrepancy will need to be put to the applicant to explain.

29. The implications of this discrepancy for the EIAR are quite significant. If the 580.64 MWth figure is correct, the calculated GHG emissions from the development would be over 1 million tonnes per year, which would be more than double the GHG emissions stated in the EIAR.

Impact in National Context

30. As specified in Annex IV of the EU EIA Directive, an EIAR must take account of national environmental protection objectives which are relevant to the project. The EIAR failed to comply with this requirement, as there was no consideration of the national objectives regarding GHG emissions and the impact of the development on these objectives.

31. In my opinion these impacts which the EIAR failed to address are significant. I will briefly summarise these potential impacts, based on the national policy and targets in place when the EIAR was prepared in 2021.

32. The national GHG reduction target was 51% by 2030 (re 2018[1]). The development would result in an increase in national GHG emissions of:

    448 ktCO2eq/yr, which is +0.7% re 2018 (on the basis of 250 MWth)
    1040 ktCO2eq/yr, which is +1.6% re 2018 (on the basis of 580.64 MWth)

    According to IEMA guidelines[2], in a policy environment which requires a trajectory leading to a 51% reduction by 2030, and net zero by 2050, any increase in GHG emissions would be considered a significant adverse impact.

33. CAP 2019 set out indicative emissions for the Electricity Sector in 2030. The impact of the development is considered relative to the emissions from the Electricity Sector in the reference year 2018[3], and as a percentage of the indicative target for 2030.

    448ktCO2eq/yr = 4.4% increase re Electricity Sector in 2018 (based on 250MWth)
    1040ktCO2eq/yr =10% increase re Electricity Sector in 2018 (based on 580.64 MWth)

34. Again, according to IEMA criteria increases of either 4.4% or 10% in a policy environment where substantial annual cuts are required would be considered a significant adverse impact. An impact descriptor of Major Adverse could be justified.

[1] Emissions in 2018: 62526 ktCO2eq, excl LULUCF (NIR 2019)

[2] Institute of Environmental Management & Assessment (IEMA) Guide: "Assessing Greenhouse Gas Emissions and Evaluating their Significance", 2nd Edition, February 2022

[3] 10110 ktCO2eq in 2018

35. CAP 2019 projected indicative MACC achievable emissions from the Electricity Sector in 2030 in the range 4-5 MtCO2eq. The impact of the development relative to this target range would be:

    10% to 11% of 2030 target (based on 250 MWth)

    21% to 26% of 2030 target (based on 580.64 MWth)

36. Clearly a single project which potentially could consume such a large part of the entire emissions target for the Electricity Sector in 2030 would be classified as a significant adverse impact. In the absence of mitigation, an impact descriptor of Major Adverse would be justified.

37. The EIAR also failed to adequately assess the "the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;", as is required under the EIA directive.

38. The EIAR did not extend the boundary of the analysis to include cumulative direct and indirect emissions from other permitted or planned projects outside of the immediate vicinity of the Proposed Development. This would admittedly be a challenging task as there is no collated national database of GHG emissions from relevant permitted or planned projects. It would have required a search of all permitted developments in the databases of all national planning authorities, and a search for planned projects reported in the media.

39. However, the consultants who prepared the EIAR were certainly familiar with many relevant developments, as based on the planning records they had prepared the EIARs for at least seven other relevant projects. A similar climate impact assessment methodology was used for these projects. It would have been a simple matter to have included these cumulative impacts in the EIAR, as all of the data was available to the consultants. There were no issues of client confidentiality, as all of this data was in the public domain. Yet, the EIAR has failed to mention these cumulative impacts.

40. In the table below, the GHG emissions and assessment of impact are summarised for these projects, based on data from the respective EIARs. The assessed impacts range from "imperceptible" to "slight" or "minor". It is impossible to reconcile these impact descriptors with the projected individual emissions, which in all cases are significant. The cumulative impact of these eight developments is significant, in the range 2.5 to 3.4MtCO2eq/yr.

41. Regarding cumulative impact it is relevant to compare the cumulative emissions in the table below with the national carbon budget for the Electricity Sector for 2026-2030, which is 20 MtCO2eq (as set out in CAP23 Table 3.2). As can be seen from the table below, these eight projects could potentially consume between 62% and 85%

of the entire national carbon budget for the Electricity Sector in the second budget period 2026 to 2030. Such an impact could justifiably be described as profoundly adverse in terms of national climate policy.

42. This analysis starkly illustrates the underlying flaw in the current EIAR and governance regime, where individual projects are submitted to the Planning Authorities, which are then considered in isolation, with no consideration of the cumulative impacts of all projects currently before the Planning Authorities nationwide. It highlights the absence of a designated national body with authority to assess and allocate appropriate emissions allowance consistent with the legally binding national carbon budgets.

Development	Planning ref	Declared GHG Emissions tonnes ktCO2eq/year	EIAR Climate Impact Assessment	Reference
Amazon Drogheda	LB/191735 EPA P1181-01	183	long-term, negative, and imperceptible	EIAR ch.9, p. 24
Tunis Properties LLC, Drogheda	ABP-310729-21	473	indirect, long-term, negative and slight	EIAR, Ch.9, P.24
Crag Wicklow Ltd., Arklow	ABP-311778-21	361	indirect, long-term, negative and slight	EIAR Ch.8, P. 22
Data and Power Hub	SD20A/0058, SD20A/0324 ABP 309773-21 EPA P1165-01	262 - 400	indirect, long-term, negative, and imperceptible	EIAR, p. 150
Art Data Centres Ltd. Ennis	ABP-314474-22	293 - 657	indirect, long-term, negative and slight	EIAR NTS, P.2, and AWN Report to ABP Table 5
Crag Arklow Ltd.	WCC 21/1080 EPA P1202-01	448	direct, long-term, negative and slight	EIAR ch8., p. 20
Universal Developments (Overall Project)	FW22A/0308	196-457	Imperceptible to Slight (original EIAR) minor adverse (FI)	EIAR Ch.9 P. 42 AWN FI response, P. 43
EdgeConnex	ABP-317802-23 EPA P1204-01	331-420	moderate adverse prior to mitigation, minor adverse with mitigation	EIAR May 2023 Table11.10 + Table 11.11
Total for above 8 developments		2500 – 3400 ktCO2/yr		
Total		2.5 – 3.4 MtCO2eq/yr 12.5 to 17 MtCO2eq over 5 years 2026 - 2030 62% to 85% of 2nd carbon budget for Electricity Sector		

Other Comments on IE Application

43. The EIAR and the planning report refers to the presence of deposits of phospho gypsum within the site. This type of waste product from the fertilizer industry is known to contain the radionuclide Radium-226. The first radioactive decay element is Radon-222 which is highly mobile and could potentially have human health implications for the proposed development. The full decay chain has nine radioactive elements, finishing with Polonium-210, which is an alpha emitter and decays to stable Lead-206. I can find no reference in the EIAR or other planning documents to a radiological assessment of this waste material. Either such an assessment should be carried out, or justification should be presented for the absence of such an assessment.

44. The predicted concentrations of nitrogen dioxide are very close to the limit values (72% of hourly limit, and 90% of annual limit). The EPA should consider if this indicates the need to revise the stack heights to ensure a greater margin of environmental protection.

45. In the Stakeholder Engagement (attachment 6-1) I note that no other planning permissions are listed. In my opinion the data centre development 20/1285 should have been included, as it is stated in the application documents that it is to be powered by the energy centre.

Summary and Conclusion

- The EIAR was fundamentally inadequate in that it did not assess the impact in the context of national climate action policies and targets, as required under the EIA Directive and Irish law.
- The claims in the EIAR that operation of the development within the EU-ETS would take account of climate impact were false and misleading.
- The EIAR failed to comprehensively address cumulative impacts as required under the EU EIA Directive.
- There is an error in excess of a factor of two for the power rating of the energy centres either in the EIAR (6-3-6), or in the Operational Report (4-8-1).
- Consequently GHG emissions may be in fact be more than twice the quantity stated in the EIAR.
- If the power rating is 580.64 MWth as stated in the Operational Report, then incorrect information regarding project threshold was presented in the EIAR and in Project and Threshold Planning (6-3-7)
- Overall, the climate section of the EIAR submitted along with the IE Licence application is seriously flawed and could not form a reliable basis for arriving at a reasoned conclusion on the environmental impact of the development.
- The presence of phospho gypsum within the site raises concerns regarding radiological safety. It appears that no assessment of Radium-226 concentrations or implications for associated radiation exposure has been conducted. Either such an assessment should be conducted, or a robust justification provided as to why a radiological assessment is not required.
- The predicted nitrogen dioxide levels are very close to the air quality limits, and the stack heights should be reviewed to ensure a margin of safety.

Section 15 of The Climate Action and Low Carbon Development Act 2015 requires that the EPA as a relevant body shall:

" in the performance of its functions, have regard to—
(a) the most recent approved national mitigation plan,
(b) the most recent approved national adaptation framework and approved sectoral adaptation plans,
(c) the furtherance of the national transition objective, and
(d) the objective of mitigating greenhouse gas emissions and adapting to the effects"

A decision by the EPA to grant an IE licence for a development where the cumulative impact results in an increase in national emissions in contravention of legally binding obligations would be open to legal challenge.

Under the Environmental Protection Agency Act 1992 (as amended) the EPA is obliged to review the EIAR. Where it determines that the EIAR material is not adequate the Agency shall:

> "…… give notice in writing to the applicant for the licence requesting further information, which notice shall—
> (I) identify the manner in which the content of the environmental impact assessment report and other material is inadequate, and
> (II) require the applicant for the licence to furnish to the Agency additional information required to correct the inadequacy so identified."

I ask the EPA to carry out such a review of the EIAR, taking account of my submission, and to take appropriate action in accordance with the legislation.

The EIAR relevant to this IE application was prepared in August 2021. In the interim a significant climate policy development has been the publication of sectoral emissions ceilings. In requesting additional information to address identified inadequacies, the EPA should also request an update of the EIAR to take account of sectoral emissions ceilings and any other relevant policy developments which have occurred since preparation of the original EIAR.