

Submission Details

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Note	

In relation to application

File Number	2460842
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For a fossil free future for Ireland

Planning Department
Meath County Council
Buvinda House
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Co Meath

13th November 2024

Planning Application Reference: 2460842

Applicant: Polarisgate Ltd

Location: CURRAGHTOWN,, BROWNSTOWN,, NAVAN, CO. MEATH

This submission is made on behalf of Not Here Not Anywhere (NHNA), a nationwide, grassroots, non-partisan group campaigning to end fossil fuel exploration and the development of new fossil fuel infrastructure in Ireland and across the world. We advocate for fair society-wide energy usage and a just transition to renewable energy systems.

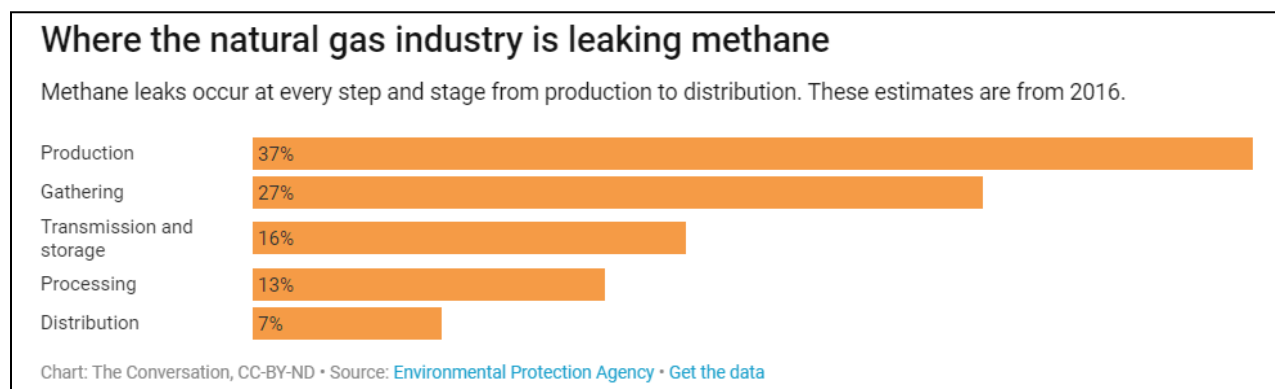
NHNA welcomes Ireland's commitment to transition to net zero by 2050 and the urgent adaptation of our energy supply. We recognise that the transition to renewables must be carried out in a way that guarantees nationwide energy security. However, we argue that the development of new fossil fuel infrastructure to facilitate this transition is not a viable solution.

International climate agreements

At COP26 in Glasgow in 2021, Ireland became a core member of the international Beyond Oil and Gas Alliance (BOGA), committing to align oil and gas production with the objectives of the Paris Agreement. In signing on to this international coalition, the government recognised that oil and natural gas demand need to decline by 75% and 55% respectively between 2020 and 2050 to achieve net zero, with nations of the global

North pioneering this transition (Beyond Oil and Gas Alliance [BOGA], 2021; International Energy Agency, 2021). In this light, we urge Meath County Council to reject the application made for a new gas power station proposed by Polarisgate Ltd .

COP26 also saw our government aligning with a global partnership to cut methane emissions by 30% by 2030. Methane is a potent greenhouse gas, with a Global Warming Potential 86 times that of CO₂ over a 20 year period (Myhre et al., 2013, p714, Table 8.7). Natural gas is frequently portrayed as a 'clean alternative' to coal and oil, as burning it emits less CO₂ than oil and coal. However, research emerging on the significant amount of methane leaked in the production and transport of natural gas disproves these claims (Borunda, 2020; Environmental Defence Fund, n.d). Leakage is an inherent part of the natural gas system as highlighted in the below graph (The Conversation, 2018) adapted from the US Environmental Protection Agency's 2018 inventory report on GHG emissions (EPA, 2018).



We cannot justify accompanying the transition to renewable energy with new gas-fueled power plants. McMullin and Price (2019, p6) emphasise the need for “extremely rapid and immediate absolute reductions in near-term fossil fuel usage, at a year-on-year rate of c. 20%, falling effectively to zero within 10-15 years (c. 2030-2035)” to achieve Paris-aligned climate targets. Further, we reinstate that the current application is not made in isolation. When considering a new gas plant, the cumulative impact of seven potential new gas plants in Ireland must also be considered.

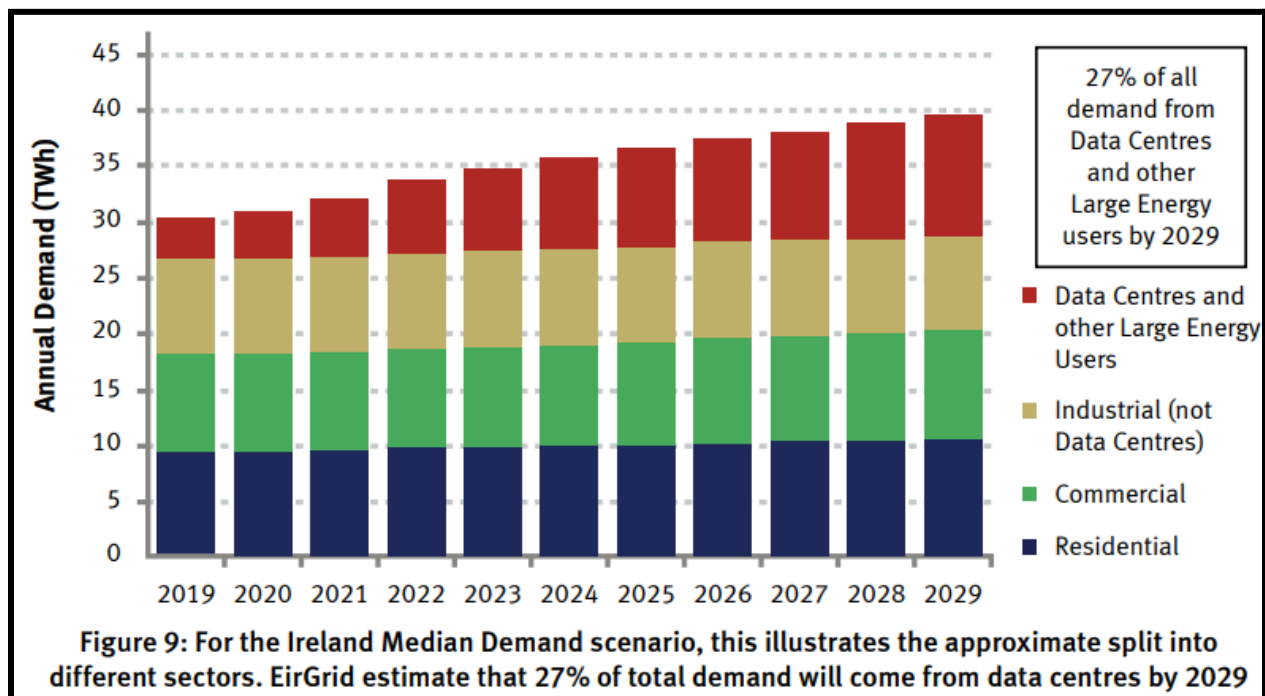
National and regional climate targets

The application by Polarisgate Ltd claims this new gas plant will be used only as a back-up energy source and only in the transition to renewables. However, the expansion of fossil fuel infrastructure inevitably leads to economic reliance on these dirty energy sources, and a 'lock-in' effect to fossil fuels (Borunda, 2020; McMullin & Price, 2019). It is crucial that Ireland does not further lock-in its dependence on fossil fuels if we are to meet our climate targets under the Paris Agreement and the Climate Action and Low Carbon Development (Amendment) Bill 2021 - which legally obliges us

to achieve a 51% reduction of our 2018 emissions levels by 2030 and net-zero by no later than 2050. Fundamentally, the climate risks of locking Ireland into new fossil fuel infrastructure far outweigh any potential energy security risks related to gas supply. Furthermore, developing new fossil fuel infrastructure is inconsistent with the Climate Change Strategy set out in Chapter 10 of the Meath County Council Development Plan 2021-2027, which lays out an overarching goal to “support the implementation of the Climate Action Plan 2019 and to facilitate measures which seek to reduce emissions of greenhouse gases in the **Electricity**, Enterprise, Built Environment, Transport, Agriculture and Waste sector” (Meath County Council, 2021, section 10.5.1).

Data centres and energy security

This application emphasises the contribution of the proposed gas plant to energy security, but we must acknowledge that Ireland’s energy security is greatly undermined by the recent and rapid growth of data centres in Ireland. Eirgrid (2020) estimates that data centres may account for up to 27% of Ireland’s electricity demand by 2028.



Currently, many companies claim to operate data centres powered by 100% renewable energy. However, the energy is largely sourced indirectly through Renewable Energy Certificates or Purchase Power Agreements (Chernicoff, 2016). If we continue to allow companies to virtually purchase clean energy where it is cheapest to create, while actually using and increasing demand for dirty energy in Ireland, we allow them to profit while our real emissions continue to rise. We cannot continue to increase Ireland’s energy demand so dramatically, only to continue building fossil fuel infrastructure to cater to this demand. As outlined in our policy briefing, a moratorium on data centre

development is imperative until an appropriate regulatory framework is in place (Not Here Not Anywhere, n.d.). We ask Meath County Council to be cognisant of data centre growth in Ireland when considering Ireland's energy demand, and to prioritise our climate targets and commitments over the continued expansion of the data centre industry.

Local climate commitments

We recognise that implementing a complete transition to renewables does not come without challenges. But, in the context of the climate emergency, increasing our use of and reliance on fossil gas cannot be the solution to Ireland's energy security. We encourage Meath County Council to review current energy use within their district, and consider the adaptations possible in order to bring about more efficient and more sustainable energy demand and consumption. Rather than focusing solely on sufficient infrastructure to guarantee energy security, there is an onus on all individuals and all communities to reflect on and readjust our energy demand. City and County Councils play an integral role in bringing about this transition. Section 10 of the Meath County Council Development Plan 2021-2027 lays out a policy objective "support the implementation of the Climate Action Plan 2019 and to facilitate measures which seek to reduce emissions of greenhouse gases in the **Electricity**, Enterprise, Built Environment, Transport, Agriculture and Waste sector" (Meath County Council, 2021, 10.5.1). The Development Plan includes a number of specific policy objectives which the development of a new fossil-fuel powered gas plant would contravene, such as NF POL 34: "To promote sustainable energy sources, locally based renewable energy alternatives, where such development does not have a negative impact on the surrounding environment (including water quality), landscape, biodiversity, natural and built heritage, residential or local amenities.", and INF POL 35-48. We urge Meath County Council to demonstrate their commitment to the policies laid out in the County Development Plan by prohibiting the development of new fossil fuel infrastructure and realising energy security through efficient and sustainable energy demand and the expansion of renewable energy supply.

Contravention of planning regulations: Need for Environmental Impact Assessment & Omission of methane leakage emissions

The applicant's EIA Screening contained in Appendix B of the Planning and Environmental Report states that a full EIA is required for "Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development, but which would be likely to have significant effects on the environment". Given the significant local effects the plant will likely have on air quality, and the very large greenhouse gas emissions from the development, we believe that the proposed development will clearly have "significant effects on the environment"

and therefore a full EIA should have been undertaken. By not undertaking and submitting a full EIA, we believe that the applicant has contravened the Planning and Development Regulations 2001, as amended.

Omission of methane leakage emissions

In addition, with regards to the specific application made for a new Open Cycle Gas Turbine power plant at Curraghtown, we would like to highlight several omissions and discrepancies in the emissions calculations of the Planning and Environmental Report.

Nowhere in the Planning and Environmental Report does the applicant outline the volume of natural gas which will be burned during the operational phase of the development. This is a serious oversight in the planning document resulting from the flawed EIA screening undertaken by the applicant.

Further, nowhere in the Report does the applicant account for CO₂e emissions from the leakage of methane. Methane has a Global Warming Potential 86 times that of CO₂ over a 20 year period and leakage has been demonstrated to add considerably to the total volume of natural gas used during the operational phase of power plants (Myhre et al., 2013, p714, Table 8.7).

Usually in observations to gas power plant developments we would demonstrate the impact methane leakage can have on emission calculations however no baseline figure was given by the applicant of this development to work off. Figures for previous gas plants indicated that using leakage rates from Howarth et al., 2012, p2, Table 1 and Hayhoe et al., 2002, total CO₂eq emissions from the operational phase of the gas plant were 66% higher using standard “best estimates” for leakage rates, or 300% higher using a high estimate.

Given the impact methane leakage can have on the operational emissions of such a development, it is illogical to proceed with the planning process until this is understood and accounted for. A full EIAR, including an assessment of the volume of natural gas to be used during the operational phase of the development, including accounting for leakage must be undertaken.

Greenhouse Gas Emissions

The applicant supplies a figure in the Planning and Environmental Report of Greenhouse Gas (GHG) emissions of 63,806 tCO₂e/year from operation of the gas power plant.

However as outlined above, this figure, which accounts for 0.7% of the sectoral carbon budget, does not account for methane leakage. Methane has a Global Warming Potential 86 times that of CO₂ over a 20 year period and leakage has been demonstrated to add considerably to the total volume of natural gas used during the operational phase of power plants (Myhre et al., 2013, p714, Table 8.7). The best estimate methane leakage is 2.5% for gas power plants (Howarth et al., 2012, p2, Table 1; Hayhoe et al., 2002). Based on calculations undertaken for previous gas power plant applications, it is likely that emissions will be in the order of 50% higher than stated when methane leakage is considered. To back up this claim, calculations undertaken for an observation on a power plant application in Derryfrench, Galway are supplied below under the conclusion. Adding this 50% results in yearly GHG emissions of 95,412 tCO₂e and 1.1% of the carbon budget for the energy sector to 2030 over the budget period.

We would also like to highlight the risk of actual emissions being considerably higher than the scenario proposed in the Planning and Environmental Report by the applicant of operation for only 2 hours a day during the peak evening period. If instead the power plant was to be in operation for 6 or 8 or 10 hours a day this would lead to 3x, 4x or 5x the GHG emissions. As an illustrated example, continued operation at 8 hours a day would result in actual GHG emissions of 381,648 tCO₂e/year or 4.4% of the carbon budget. From this, it is clear that the proposed development could have a significant impact on the environment and is likely not in alignment with the Climate Act 2021.

Conclusion

We urge Meath County Council to reject the application made for the new gas power station proposed by Polarisgate Ltd for the following reasons:

- New fossil fuel infrastructure, such as the proposed development, is not in line with Ireland's international climate commitments.
- New fossil fuel infrastructure of this type threatens our national and local climate targets.
- Failure of the applicant to submit an EIAR for a development that is likely to have a significant impact on the environment.
- Failure of the applicant to account for damaging methane leakage in the Planning and Environmental Report.

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Yours sincerely,

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Derryfrench, Galway Example: Methane Leakage Calculation Example.

NOTE: for illustration only

In addition, with regards to the specific application made for a new Open Cycle Gas Turbine power plant at Derryfrench, we would like to highlight several omissions and discrepancies in the emissions calculations of the EIAR (EP Energy Developments, 2021)

On page 22 of the Environmental Impact Assessment Report Volume II - Appendix 7B - Greenhouse Gas Emissions (the EIAR), item 7.1.1 states that approximately 83,527,397 m³ of natural gas will be burned each year. Item 7.1.2 states that 214,598 tonnes of CO₂ equivalent (tCO₂e) will be emitted each year from operating the plant. This is summarised in Table 1 below.

Table 1- Operational emissions from combustion as per EIAR Volume II

Variable	Value
Total gas (m ³ per year)	83,527,397
Emissions proposed (tCO ₂ e per year)	214,598

Nowhere in the EIA Report does the applicant account for CO₂e emissions from the leakage of methane. Methane has a Global Warming Potential 86 times that of CO₂ over a 20 year period (Myhre et al., 2013, p714, Table 8.7). Table 2 below proposes three different leakage scenarios (Howarth et al., 2012, p2, Table 1; Hayhoe et al., 2002) and calculates the volume of leaked gas and the volume of gas that would actually be combusted under each scenario. Again let it be stated that the applicant has not considered leakage anywhere in their application and so our calculations below may currently be the only estimation for this project. We have used a range of industry averages within which the specific proposed project may lie.

Table 2 - Volumes of gas for combustion accounting for leakage

Variable	Low Estimate	Best Estimate	High Estimate
Leakage rates	0.2%	2.5%	10%
Total volume of gas (m ³ per year)	83,527,397	83,527,397	83,527,397
Total gas leaked (m³ per year)	167,055	2,088,185	8,352,740
Total gas to be burned (m³ per year)	83,360,342	81,439,212	75,174,657

Once the volume of gas likely to be combusted, accounting for leakage, has been calculated, the new emissions value from burning this gas was estimated as per Table 3 below. The estimation is based on the proportions provided by the applicant as shown in Table 1 of this document and items 7.1.1 and 7.1.2 of the EIAR.

Table 3 - CO2 Emissions from combustion after leakage volume has been accounted for

Variable	Low Estimate	Best Estimate	High Estimate
Gas to be burned (m ³ per year)	83,360,342	81,439,212	75,174,657
Total Emissions from burning (tCO₂e per year)	214,169	209,233	193,138

Table 4 takes the volume of gas leaked, assumes it contains 85% methane (Britannica, 2019) and calculates the emissions from this leaked gas in tCO₂e by applying the Global Warming Potential of methane over a 20 year period. Please note that 85% is somewhat conservative and it's not uncommon for natural gas to be comprised of 95% methane.

Table 4 - Emissions from leaked methane

Variable	Low Estimate	Best Estimate	High Estimate
Gas leaked (m ³ per year)	167,055	2,088,185	8,352,740
% Methane of natural gas	85%	85%	85%
Methane leaked (m ³ per year)	141,997	1,774,957	7,099,829
- Density of methane (kg/m ³)	0.7165	0.7165	0.7165
- Methane leaked (kg per year)	101,741	1,271,757	5,087,027
- Methane leaked (tonnes per year)	102	1,272	5,087
- GWP ₂₀ of methane	86	86	86
Total Emissions from leakage (tCO₂e per year)	8,750	109,371	437,484
Total Leakage emissions over 25 years (tCO₂e)	218,742	2,734,277	10,937,109

In Table 5 the new total operational emissions per year are calculated by combining the emissions from leakage with the emissions from combusting a lower volume of gas due to leakage. This is compared with Item 7.1.2 of the EIAR. The difference is displayed in both tCO₂e and as a percentage and shows how significant the omission of leakage can be if even a small percentage of the gas escapes.

Table 5 - Additional emissions per year once leakage has been accounted for

Variable	Low Estimate	Best Estimate	High Estimate
Total operational emissions (tCO ₂ e per year)	222,918	318,604	630,623
Reported estimate as per EIAR (tCO ₂ e per year)	214,598	214,598	214,598
Total emissions unaccounted for (tCO₂e per year)	8,320	104,006	416,025
Difference (%)	4%	48%	194%

Table 6 shows the potential difference in operational emissions over the full 25 year lifecycle of the proposed development when leakage is accounted for.

Table 6 - Difference over 25 years once leakage has been accounted for

Variable	Low Estimate	Best Estimate	High Estimate
Total operational emissions (tCO ₂ e)	5,572,962	7,965,103	15,765,564
Reported operational emissions as per EIAR (tCO ₂ e)	5,364,956	5,364,956	5,364,956
Total emissions unaccounted for (tCO₂e)	208,006	2,600,147	10,400,608
Difference (%)	4%	48%	194%

Given the impact methane leakage can have on the operational emissions of such a development, it is illogical to proceed with the planning process until this is understood and accounted for. We commend the applicants for including figures for embodied carbon emissions during the construction phase but if they are willing to account for somewhat negligible values like that there is no excuse for excluding such an impactful figure as leaked methane emissions.

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