GNI PC5 Consultation Response

Irish District Energy Association

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Price Control 5: Distribution, transmission & regulatory framework

Public Consultation Response, 20/09/2023

Executive Summary

It is IrDEA's view that the price control must be allowed to evolve if it is to better reflect and serve the decarbonisation agenda. Without urgent changes, it will hamper the ability to deliver decarbonisation at the pace needed to respond effectively to the unfolding climate emergency. This submission is premised on that position, and the comments and recommendations offered are rooted in the underlying assumption of the need to decarbonise Ireland's electricity and heating systems in line with stated government policy (as led by the current iteration of the Climate Action Plan (DECC, 2022)).

Key Recommendations

1. **Efficiency Targets within Price Control Framework**
   Recommendation: Apply a more searching and stretching efficiency challenge than 1% to bring about greater efficiencies in the operation of the gas network.
2. **Future Gas Use**
   Recommendation: Revise the PC5 to bring assumptions around the trajectory for gas grid development into line with national energy and environmental policy.
3. **Projected Hydrogen Applications**
   Recommendation: Ensure that any funds made available to GNI for hydrogen readiness activities are allocated for spending that is fully in line with the recently published National Hydrogen Strategy. The aim being to strike a balance between the need to innovate, provide value for money for consumers, and remain aligned with broader plans for the decarbonisation of heating and electricity.
4. **Incentivising gas grid expansion**
   Recommendation: Move away from a regime that incentivises the continued expansion of the gas grid and move towards a coherent regulatory and policy approach that supports and encourages consumers opting for decarbonised alternatives for electricity and heat generation and distribution.
5. **Promoting district energy through the price control framework**
   Recommendation: Review the potential for spreading the costs of regulating heat networks evenly across heat networks, gas, and electricity consumers as a way of supporting the delivery of government targets on the expansion of district energy.

We are grateful of the chance to contribute to this consultation and would be happy to supply any additional information or resources that might be needed to support or elaborate on the comments made here.

Price Control 5: Distribution, transmission & regulatory framework

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1. Introduction

The Irish District Energy Association (IrDEA) welcomes the chance to comment on the Price Control 5 (PC5) consultation, which is both relevant to the current carbon budget period and the next. The decisions to be made based on this consultation will affect whether Ireland meets its decarbonisation targets. We are keen to see a balance struck between meeting the current energy needs of Irish consumers and ensuring consistency across all energy and decarbonisation policy that sets out the pathway to Net Zero by 2050.

The efficacy of the price control process is a key concern for IrDEA considering the enduring nature of the organisational inefficiencies highlighted by the Commission for the Regulation of Utilities (CRU). The overall framework appears to assume a high volume of gas growth and does not seem to give sufficient regard to decarbonisation policy, likely hydrogen usage, and the need to replace gas consumption as a heating vector.

In our response, we address opportunities for promotion of district heating within the regulatory framework, and the need for a price control framework aligned with net zero and the declining utility of gas in both electricity and heating. We have focused our commentary on three documents: CRU/202368 – Consultation on PC5 Transmission Revenue for Gas Networks Ireland; CRU/202369 – Consultation on PC5 Distribution Revenue for Gas Networks Ireland; and CRU/202370 – CRU Consultation on the PC5 Regulatory Framework.

We would be happy to elaborate further on the commentary set out below should further information or context be needed and wish those tasked with carrying out with the review the very best in their work.

2. About Us

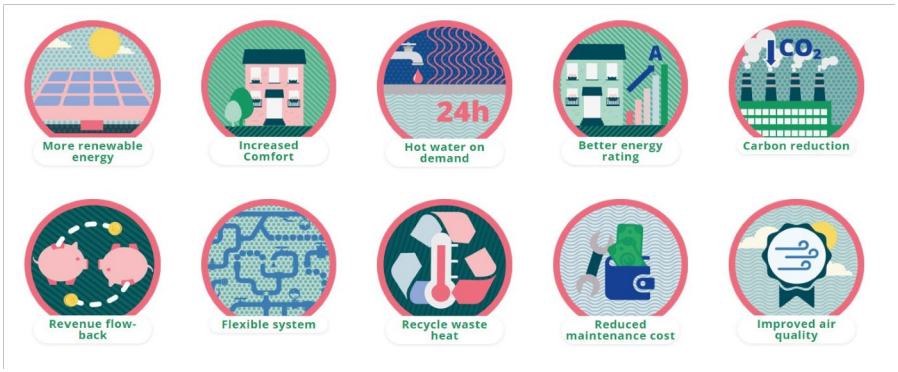
About IrDEA

IrDEA was founded in 2017 to promote the development of low-carbon district energy in Ireland. We currently represent over 30 member organisations boasting a range of specialisms across the value chain of the district heating and cooling sector both in Ireland and abroad. We are the only association in Ireland dedicated to supporting and representing the interests of the district energy industry in Ireland.

Countries across Europe with similar climates, populations, and energy systems to Ireland have proven that district energy can deliver sustainable and cost-effective heating to urban areas serving millions of people. There is, however, currently a shortage of knowledge, policy support, capacity, standards, and regulations to facilitate the implementation of large-scale district energy networks in Ireland.

IrDEA aims to address these barriers to see Ireland meet the targets of delivering 0.8 TWh of district energy to Irish consumers by 2025 and at least 2.7 TWh by 2030.

About District Energy



Benefits of district heating (HeatNet NWE, 2021)

How it works.

District energy systems deliver hot water and space heating or cooling to buildings using water that is heated or cooled centrally and transmitted through insulated pipes. Heat exchangers are placed inside buildings instead of individual boilers or heat pumps (saving on space and maintenance costs), allowing consumers to control the temperature using a thermostat and access hot water at the turn of a tap.

Flexible, locally produced, low carbon heat source.

One of the key benefits of district energy is that it is fuel agnostic, i.e., any energy source that can heat or cool water can be used to drive the system. This means district energy systems are not limited to a single fuel/heat source, rather multiple locally available, renewable heat sources can be used. As a result, system operators can configure the system to select the most efficient or affordable heat source at any given time, which helps to keep costs low.

District energy systems are made even more efficient by the fact that they can incorporate waste heat that is otherwise dispersed into the surrounding environment from processes such as electricity generation, hydrogen production, industrial processes, data centre cooling, wastewater treatment, waste incineration, and brewing. As a result, district heating has many economic, environmental, and social benefits, such as lower carbon emissions, cleaner air, reduced maintenance costs, increased comfort, and less fuel poverty.

Internationally proven.

As of mid-2023, there were just over 17,000 district heating networks across Europe supplying heat to 70 million people (Piel et al., 2023). It is no coincidence that some of the countries with the highest shares of renewable heat across Europe are also heavy users of district energy – they include Sweden, which boasts a renewable heat share of 68.6%, Estonia (61.3%), Latvia (57.4%), Finland (52.6%), and Denmark (51%). By contrast, Ireland has the lowest renewable heat share in Europe at 5.2% (Eurostat, 2023), with less than 1% of heat demand being met by district energy (SEAI, 2022).

Key growth market in Ireland.

SEAI's National Heat Study (SEAI, 2022) provides a comprehensive assessment of the options available to decarbonise Ireland's energy used for heating and cooling homes, businesses, and inAdustry. Published in February 2022, the study indicates that up to 54% of Irish buildings could be suitable for connection to district heating networks. This is in line with similar findings from the Irish Heat Atlas developed by Flensburg University on behalf of the Irish District Energy Association (Irish District Energy Association, 2020). According to this work, one-third of the heat used for buildings in cities, towns, and villages in Ireland is suitable for district heating technology that is widely deployed across Europe today. A further 21% of the heat demand is capable of being satisfied through more advanced 4th Generation District Heating, bringing the total predicted potential to 57% (ibid.).

Ready to deliver for 200,000 homes and 2500 public/commercial buildings by 2030.

Delivering 2.7 TWh of district energy by 2030 will mean connecting approx. 200,000 homes and 2500 public/commercial buildings with low-cost, low-carbon heat. The total investment required is estimated at between €2.7 and 4 billion (approx. 40% public piping, 20% homes & buildings, and 40% new low-carbon production plants) for the deployment of the heat networks and associated heat production plants (mostly surplus heat recovery systems) (Government of Ireland, 2023a). This target can be met primarily due to the well-established district heating industry in Europe, which can be leveraged for the rapid roll out of district heating in Ireland. For example, there are already over 30 million homes with district heating in Europe, so connecting 200,000 in Ireland by the end of the decade will require less than 1% of what the industry has already delivered in Europe (Piel et al., 2023).

A further benefit is that the development, operation, maintenance, and supplying of heat to district heating networks would likely lead to the creation of over 2,000 full-time jobs over the next decade. District heating skills and training requirements exist at the interface between energy, engineering, and construction. Often workers operating in heat networks development, operation, and maintenance have undertaken training or worked in one or more of these sectors. As a result, significant cross-over is likely between the district energy sector and these three broad areas of skills and training and it may be a key avenue for workers seeking to transition from fossil intensive industries to renewables (Vogeley et al., 2020). Some typical examples of this include,

1. Gas network installation contractors installing whose re-skilling requirement is typically less than 1 month to qualify for district heating pipe installation.

2. Plumbers who can very readily swich from gas/oil boiler installation to heat exchangers, a well-established technology that most plumbers would be familiar with.

3. Mechanical contractors installing fossil fuel plant rooms could transition to low-carbon energy centre development and installation as this requires a near identical skillset. The key difference being the purchase and connection of heat pump units as opposed to boilers.

3. Price Control 5 (PC5)

At the outset, we are keen to say that the comments below relate to the distribution and transmission elements of the price control. Unless specified within the text, or obvious from the context, it can be assumed that comments are relevant across both areas.

Efficiency Targets within Price Control Framework

We welcome that CRU has reduced the allowances requested by GNI and has committed to their achievement. However, we are concerned by the results of CEPA's Top-Down benchmarking analysis that suggests “GNI's efficiency ranges from 3-9% below the industry average” (CRU/202369 2023, p. 147). The experience of the previous price control PC4(CER, 2017a, 2017b) lends weight to these concerns, particularly given CRU’s comments that “GNI underdelivered on a quantity basis compared to its plans, while also overspending on a unit cost basis in many instances” (CRU/202368 2023, p. 4).

We are concerned that a robust argument has not been made in the consultation documents to support the continued use of the 1% figure, which if adopted will be in use for the next 5 years. This is noteworthy given that 1% was also used in both the PC4 and PC3 (CER, 2012b, 2012a). It is recommended that a more searching and stretching efficiency challenge than 1% be used to bring about greater efficiencies in the operation of the gas network.

Recommendation: Apply a more searching and stretching efficiency challenge than 1% to bring about greater efficiencies in the operation of the gas network.

Future Gas Use

As of 2022, electricity generation was responsible for approx. 58% of gas consumption with most of the remainder going towards heat (20% industry, and 19% buildings) (SEAI, 2023). In its current form, the price control appears to assume the sustainment of this pattern and continued growth in demand for gas. This contradicts current national and international decarbonisation policy that aims to significantly reduce dependency on fossil-based energy sources (Government of Ireland, 2022). Both the electricity and heat sectors are undergoing structural changes that suggest scenarios of robust gas growth may be overstated, in which case the assumptions underpinning much of the proposed cost increases from PC4 to PC5 should be revisited and revised downwards.

This represents an open challenge for alternative sources of renewable heat and electricity generation, which must compete with an already dominant market player to gain market share in a bid to meet government-led decarbonisation targets.

Electricity Generation

With current government targets aiming to reach 80% RES-E by 2030 (Government of Ireland, 2022), the assumption that gas will continue to be the key source of electrical production towards the end of the decade is problematic. Based on this target alone, it is estimated that gas will solely be eligible to compete for up to 20% market share in flexible electricity generation by 2030. In real terms, however, the share is likely to be lesser again given that renewable alternatives to flexible gas fired electricity generation must also be built into market predictions.

Market indicators already exist to suggest that investment behaviour around gas development is changing. For example, developers of gas plant, such as ESB and EP Energy Developments Limited, have cancelled planned investments in gas generators. In addition to which, the timelines on the emergency gas capacity procured by EirGrid must also be read with some caution when we consider that in August 2023, ESB's generation division publicly warned that over a third of that capacity procured for this winter may not be ready (Allen, 2023).

This trajectory demands reflection as part of the PC5 process to ensure prudent and forward-looking investment decisions are made in line with the interests of the consumers who will pay the bill for them and in line with the broader interests of the decarbonisation agenda.

Heating

The decarbonisation of heat is of key national and international importance in the race to reach carbon neutrality, with the stated intention of government policy being to move entirely away from gas towards district energy and heat pumps by 2050 (Government of Ireland, 2022). It is, therefore, concerning to see that the PC5 appears to be shaped around the assumption that a substantial expansion of gas infrastructure is needed to meet growing demand at a time when we have been tasked with reducing and transferring that demand to renewable alternatives.

For example, the district energy sector is tasked with delivering 2.7 TWh of renewable heat to buildings by the end of the decade and is expected to continue growing substantially beyond that point in time. If the continued growth of the gas grid is assumed from a regulatory and pricing standpoint, it will become increasingly difficult to plot a pathway towards transitioning to alternatives such as district energy as consumers receive the message that gas remains a viable and well-promoted source of space and water heating. This directly contradicts the Climate Action Plan 2023 (Government of Ireland, 2022), which, *inter alia,* sets out to,

1. Introduce regulations in 2024 to ban fossil fuel boilers in new builds and those undergoing renovation where practicable.
2. Update energy efficiency standards in 2025 for major renovations for new non-residential buildings to effectively ban fossil fuel boilers where practicable.
3. Install 0.8 TWh district heating by 2025.
4. Install 170,000 new and 45,000 existing homes using heat pumps by 2025.
5. Reduce fossil fuel demand by 7% in manufacturing by 2025.

The Plan further states,

> All buildings will need to switch to heat pumps or district heating by 2050, meaning that the gas grid will no longer supply existing homes and commercial premises. It will also require the urgent ending of new gas connections or the installation of new fossil heating systems in new or refurbished buildings. Where heating systems are being upgraded, this should be to non-fossil fuel systems. (pp. 163)

Decisions taken for this price control could lock in gas usage and network expansion in direct contravention of government policy. IrDEA, therefore, strongly urges that the underlying assumptions surrounding the likelihood and benefits of continued gas grid expansion be re-examined to ensure consistency with national and international policy on the phasing out of fossil fuel dependency for electricity and heating use.

Recommendation: Revise the PC5 to bring assumptions around the trajectory for gas grid development into line with national energy and environmental policy.

Projected Hydrogen Applications

We are deeply concerned at the proposal to provide €35.8m for hydrogen readiness activities at GNI. The case for such activities is not well supported by the evidence at hand and this approach is also at odds with the National Hydrogen Strategy (Government of Ireland, 2023b), published on 12 July 2023.

It is important that all potential avenues for decarbonisation are examined and explored to ensure that the most relevant and efficient applications for hydrogen can be identified and adapted to. We, therefore welcome the somewhat cautious approach to allow a minority portion of €9.4m for foundational activities, with a requirement for GNI to further justify the remaining €26.2m through an uncertainty mechanism. We would, however, caution that a robust evaluation mechanism be put in place to ensure those initial activities are truly essential, foundational, and in line with the National Hydrogen Strategy. This is vital to ensuring the greatest level of efficiency and applicable insights result from exploring the innovation potential of green hydrogen in the Irish context.

GNI has been a prominent advocate for the use of hydrogen on the national gas network and for the use of hydrogen ready boilers, yet the National Hydrogen Strategy sets out that,

1. There will be a small number of niche applications for network blending of hydrogen and a national hydrogen network is unlikely to exist.
2. For many end use sectors, alternative decarbonisation solutions such as direct electrification proffer a more efficient and cheaper option.
3. Hydrogen will play a very minor role for building heat demand.

This approach is consistent with much of the emerging research on the potential role of hydrogen in decarbonising the heating and electricity sectors, which overwhelmingly finds that the combination of low energy efficiency and high investment costs undermines the case for pivoting heavily to green hydrogen as a mode of generating and distributing heat to buildings (Aunedi et al., 2023; Korberg et al., 2023). By the date of submission for this consultation, at least 44 peer-reviewed studies in internationally recognised academic journals made findings of this sort (Rosenow, 2023). This is compounded when the ready availability of proven decarbonisation alternatives such as district energy are considered, further undercutting the investment incentive case for largescale hydrogen readiness activities for GNI in heat distribution and production.

IrDEA supports Government's view that hydrogen use should focus on hard to abate sectors rather than heat generation and transmission; in this regard, it is important that the proposed scope of hydrogen readiness activities be directly consistent with the limited role for hydrogen envisioned by government's National Hydrogen Strategy.

Recommendation: Ensure that any funds made available to GNI for hydrogen readiness activities are allocated for spending that is fully in line with the recently published National Hydrogen Strategy. The aim being to strike a balance between the need to innovate, provide value for money for consumers, and remain aligned with broader plans for the decarbonisation of heating and electricity.

Incentivising Gas Grid Expansion

Gas-Fired Generation Connections Incentive

The necessity and appropriateness of the Gas-Fired Generation Connections Incentive is questionable given the overall decarbonisation goal to reduce demand and supply of gas in the Irish energy market. Work such as *Decommissioning* by the UK Regulatory Assistance Project (Lowes, 2023) has detailed the importance of decommissioning the gas network to facilitate climate goals. This is based on the assessment that in the UK, as with Ireland, a large proportion of the gas distribution grid serves the needs of heat customers. As a result, failure to arrest future expansion and decommission the grid ultimately undermines decarbonisation through electrification and heat networks.

The inclusion of the Gas-Fired Generation Connections Incentive in the PC5 must be considered from the perspective of the stranded asset risk it poses. This is important given its aim to incentivise continued grid expansion at a time when decarbonisation policy is set to continue promoting a shift in consumer behaviour away from gas to renewable forms of heating. The UK gas distribution sector indeed acknowledged this risk in appealing the current UK price control to the Competition and Markets Authority (CMA) for higher costs of capital than allowed for by Ofgem, citing that the regulator had failed to account for the gas stranding risk considering the Net Zero agenda (*Final determination: Volume 2A: Joined Grounds: Cost of equity*, 2021).

In undertaking its own price control consultation, Ofgem considered the regulatory framework for electricity and gas networks (Ofgem, 2023). This focused on future price controls and how to efficiently deliver the

infrastructure needed to meet long-range net zero targets. In discussing gas transmission and distribution networks, Ofgem suggests it may be prudent to not simply continue with the existing price control model or price control periods, until they are certain of delivering on the net zero agenda. One question that arose was whether to roll the existing gas price controls over by two years to allow for further reflection, which Ofgem contextualised by stating,

> There are two large-scale uncertainties hanging over the sector: what scale and type of hydrogen conversion should we plan for; and what heating decarbonisation solutions are envisaged on what timetable? These have such a fundamental impact on the future of gas networks that there is an argument for delaying a completely new price control until these uncertainties are resolved to a greater extent. This could suggest a role for a simplified short-term price control (ibid. 2023, p. 44).

A decision on the consultation is pending. However, it may be worthwhile for CRU to undertake some deep reflection on these questions in the Irish context.

Gas connection efficiency

With the goal of maximising efficiency of gas connections and ensuring only necessary and efficient cost recovery through the price control, IrDEA requests that CRU query GNI's connection policy (GNI, 2018). Annex 3 shows that many categories of industrial and commercial customers pay just 30% of the connection cost, with GNI subsidising 70% of the cost. This could be justified where gas is facilitating an alternative low-carbon solution such as an industrial heat pump or a low-carbon energy centre for district heating networks. Gas is often required as a back-up to these new solutions to encourage end users to switch, and in this context a subsidy could be justified.

However, a broad approach to enhancing the attractiveness of connecting to the gas network by shielding customers from the full economic costs of connection is not desirable where the intention of government policy is to transition away from fossil dependency. It is our understanding that these costs are also socialised through gas tariffs that result from regular review of the price control process, which means they are borne by all users, rather than those generating the cost. If this is the case, this policy poses a significant challenge to decarbonisation policy as it directly incentivises the expansion of the gas grid to new largescale users. Meanwhile, it is our understanding that domestic customers seeking to terminate their connection to the gas grid incur a fee of approx. €850.

We question the regime of incentivising gas grid expansion and disincentivising disconnection operated by GNI and would welcome clarification over whether such practices fall under the remit of the PC5.

Recommendation: Move away from a regime that incentivises the continued expansion of the gas grid and move towards a coherent regulatory and policy approach that supports and encourages consumers opting for decarbonised alternatives for electricity and heat generation and distribution.

Promoting District Energy Through the Price Control Framework

In 2022, the UK Department for Business, Energy, and Industrial Strategy mandated that the costs of regulating heat networks by Ofgem would be spread evenly across heat networks, gas, and electricity consumers (UK Government, 2022).

Analysis supporting this approach found that subsidisation across customer segments was warranted as it resulted in an annual increase of £0.10 per electricity and gas customer as opposed to an annual increase of at least £10 per heat network customer were the costs recovered from them alone. The impact assessment accompanying an open joint consultation between Ofgem and the Department for Energy Security and Net Zero on consumer protection elements of its forthcoming heat network regulatory regime, estimated a substantial consumer benefit from such a regulatory regime (UK Government, 2023). Their best estimate of the benefit was a Total Net Present Social Value of £596.7m, which suggests real consumer value can be delivered *via* regulatory mechanisms addressing district energy. At a minimum, it would be wise to consider whether price control funding could unlock district energy at scale.

Recommendation: Review the potential for spreading the costs of regulating heat networks evenly across heat networks, gas, and electricity consumers as a way of supporting the delivery of government targets on the expansion of district energy.

4. Conclusion

The PC5 evaluation and consultation process offers a chance to build shape the transition from the current trajectory of gas grid development to one that is in better alignment with the ambition to decarbonise Ireland's electricity and heating sectors. This is particularly important given that the PC5 will apply during the most influential years of this decade when it comes to delivering our 2030 climate targets. It is vital that mechanisms such as the PC5 are shaped in response to clearly defined government targets and policies. This is key to ensuring that the regulatory system aids the delivery of policies aimed at pivoting consumer and sectoral behaviour in favour of more sustainable practices.

We strongly urge a departure from the traditional approach to the price control to limit the growth of fossil-based energy production and distribution. A disruption of the status quo is needed to deliver decarbonisation at the pace needed to avert the worst excesses of the climate emergency. It is our hope that the PC5 can aid that disruption by curtailing the growth of Ireland's gas distribution network over the coming years.

We are grateful of the chance to contribute to this consultation and would be happy to supply any additional information or resources that might be needed to support or elaborate on the comments made here.

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