



Commission for Energy Regulation
An Coimisiún um Rialáil Fuinnimh

Compressed Natural Gas Funding Request Decision Paper

Decision Paper

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Regulating Water, Energy and Energy Safety in the Public Interest

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Executive Summary

The Commission for Energy Regulation (CER) is today, 24 November 2016, publishing a decision regarding a funding request submitted in September 2016¹ to the CER by Gas Networks Ireland (GNI). The funding request (€12.83m) was for a trial to examine the impact of the introduction of Compressed Natural Gas (CNG) on the gas network through the installation of 13 CNG stations in Ireland.

In February 2016, GNI submitted an application (the Causeway Study)² to the Connecting Europe Facility (CEF)³. In July 2016, on foot of this application, GNI was provisionally awarded €5.96m to undertake the Causeway Study. However, the granting of the €5.96m was conditional on GNI committing to the total cost of the Causeway Study. The total cost of the study is €23.47m of which €5.96m will be CEF funding and €4.68m is available from previous innovation funding secured by GNI under Price Control 3, leaving a remaining shortfall of €12.83m. In September 2016, GNI submitted a request to the CER for the remaining amount of the cost of the Causeway Study (€12.83m).

On foot of this request for funding, the CER published a consultation paper (CER/16/258)⁴ which included the GNI submission, outlining the basis upon which the funding was sought. The CER sought the views of interested parties as to whether GNI should be allowed to recover the shortfall of €12.83m in funding for the project from the gas customer.

During the consultation period and in response to the GNI request, the CER sought further detailed costings from GNI to allow for a detailed review of the project to take place. Consequently, the CER in conjunction with its economic advisors carried out an analysis of the Net Present Value (NPV) of the proposed project and carried out a sensitivity analysis to test the underlying assumptions over a 25 year and 15 year basis.

Following this assessment the CER found that in the event of minor fluctuations in some of the GNI projections, the NPV gain over the lifetime of the 15 year assessment diminishes or turns negative. It was also the case that the underlying assumptions

¹ <http://www.cer.ie/document-detail/Compressed-Natural-Gas-Funding-Request/1107>

² See Section 2 for more detail

³ <https://ec.europa.eu/inea/en/connecting-europe-facility>

⁴ [Compressed Natural Gas Funding Request](#)

presented by GNI were uncertain. This uncertainty is driven by the fact that CNG as a transport fuel is very much in its infancy in Ireland, and therefore it is difficult to predict the demand for its use over the medium to longer term. As such, the CER view the GNI proposed project to be still very much at the innovation stage and has not, as yet, moved to a full viable business model.

However, recognising the potential benefits that CNG may bring to the gas customer and the positive responses received to consultation (CER/16/258), the CER has deemed it appropriate that GNI be provided with innovation funding of €12.83m as part of Price Control 4 (PC4), which will be recovered through network tariffs. Innovation funding is an allowance given to GNI for research and development and may include projects where the financial benefits are not yet certain.

The CER recognises that the allowance of €12.83m for innovation funding represents a significant increase when compared to the innovation funding of €8m allowed to GNI under Price Control 3. Given this large increase, it is difficult to see how the CER would agree to provide further additional funding for innovation under PC4 unless there were exceptional circumstances.

Should GNI use the innovation funding for the CNG trial it would be subject to a number of conditions set out in Section 4 of this paper. GNI will be required to:

- report on the findings of the pilot project to the CER on an annual basis;
- prepare and publish a final report on the benefits to the gas customer at the end of the project;
- install the infrastructure in line with CER safety requirements, and
- install the infrastructure in such a way so the assets can be sold once the pilot is complete.

The consultation paper (CER/16/258), stated that the CER would consider the regulatory treatment of the CNG infrastructure within the context of PC4. Such consideration will be informed by the CER's decision on regulatory treatment of Electric Vehicles (EVs) which is due for publication shortly.

Public/ Customer Impact Statement

The CER is aware of the potential benefits regarding the uptake of CNG which has the potential to bring, through increased demand, downward pressure on individual gas tariffs. The potential benefits of CNG are not limited to just the gas market, but may extend to wider societal benefits. As identified by GNI, the uptake of CNG also has the potential to:

- reduce emissions from the transportation sector;
- provide a pathway for Renewable Natural Gas (RNG) to access the transportation market;
- reduce Ireland's dependence on imported petrol and diesel;
- provide businesses the opportunity to reduce transportation costs; and
- provide businesses the opportunity to reduce their transportation emissions.

The CER has reviewed the GNI submission, the responses received and also an economic report from the CER's advisors.

Given that the predicted demand of CNG is dependent on the level of vehicle uptake, the CER is, at present, not in a position to verify that the gas demand forecasts underpinning the projects will meet the level assumed by GNI. The CER has concerns that the level of forecast demand uptake may not be realised, given that CNG for transport purposes does not at this time exist in Ireland.

Notwithstanding this, the CER has deemed it appropriate that GNI be provided with innovation funding of €12.83m as part of Price Control 4 (PC4), which will be recovered through network tariffs. Innovation funding is an allowance given to GNI for research and development and may include projects where the financial benefits are not yet certain.

The CER is currently working on GNI's PC4, revenue allowances are not as yet known and it is not possible to accurately calculate the effect of this approval on overall revenue allowances. However, when compared to the Price Control 3 period the allowance equates to €2.56m per annum over a five year period. This would be the equivalent of 1.3% of distribution revenues for 2015/16. Based on the average customer bill for 2016/2017 this figure would translate to an additional €1.20 per customer per annum.

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Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
CER	Commission for Energy Regulation
CNG	Compressed Natural Gas
DTTAS	Department of Transport Tourism and Sport
GNI	Gas Networks Ireland
NGV	Natural Gas Vehicle
NPF	National Framework Policy
NPV	Net Present Value
PC	Price Control
RAB	Regulated Asset Base
RNG	Renewable Natural Gas

1 Introduction

This paper outlines the CER's decision in relation to a request submitted by Gas Networks Ireland (GNI) in September 2016, regarding funding for the roll out of thirteen CNG stations in Ireland.

The request from GNI was in response to the Alternative Fuels Directive, 2014/94/EU (the Directive). The Directive outlines a number of requirements regarding the deployment of alternative fuels for use in the transportation sector. With regard to CNG, the Directive states that:

“Member States should ensure, by means of their national policy frameworks, that an appropriate number of refuelling points accessible to the public for the supply of CNG or compressed biomethane to motor vehicles is built up, in order to ensure that CNG motor vehicles can circulate in urban/suburban agglomerations and other densely populated areas as well as throughout the Union, at least along the existing TEN-T Core Network.”

The Directive indicates, that an appropriate distance between refuelling points is approximately 150 km.

The CER is aware that the Department of Transport, Tourism and Sport (DTTAS) is currently consulting on a National Policy Framework (NPF) for the deployment of alternative fuels in Ireland. The Directive calls for Member States to notify the European Commission by November 2016, of their NPFs.

While not within the remit of the CER, GNI notes a number of other potential positive impacts of CNG such as:

- reduce emissions from the transportation sector;
- provide a pathway for Renewable Natural Gas (RNG) to access the transportation market;
- reduce Ireland's dependence on imported petrol and diesel;
- provide businesses the opportunity to reduce transportation costs; and
- provide businesses the opportunity to reduce their transportation emissions.

It is against this backdrop that GNI submitted a request for funding of €12.83m for the roll out of 13 CNG stations across the Ten-T Core network in Ireland.

Following this request, in September 2016, the CER published (CER/16/258). The purpose of (CER/16/258) was to seek the views of the gas industry, potential users and suppliers of CNG and any other interested parties on GNI's request for funding.

1.1 Consultation responses

The CER received 21 written submissions in response to (CER/16/258). In relation to (CER/16/258), submissions were received from the following organisations and have now been published on the CER's website alongside this decision paper:

- Air Liquide
- Bord Gáis Energy
- Bus Éireann
- Celtic Linen
- Diageo
- Department of Tourism, Transport, and Sport (DTTAS)
- Energy Cork
- ESB
- Farmgas
- Fingleton White
- Glanbia
- Green Forty
- Harris Transport
- Jerry Murphy
- NRGE
- Renewable Gas Forum Ireland
- SSE
- TCBB
- The Happy Pear
- Topaz
- Virginia Logistics.

1.1.1 Structure of Paper

This paper is structured as follows:

Section 1: Introduction

Section 2: Overview of the Causeway Study and with an overview of the responses received

Section 3: CER Decision

2 Overview of Causeway Study and Responses to Consultation

2.1 The Causeway Study

In February 2016, GNI and its project partners (Phoenix Natural Gas Ltd., Firmus Energy and the National University of Ireland Galway (NUIG)) submitted a funding application to the Connecting Europe Facility (CEF) which opened on the 5th of November 2015 ('The Causeway Study'). The Causeway Study involves the testing of the progressive and rapid deployment of CNG stations across Ireland and an analysis of their impact on the operation of the gas network.

The application outlined GNI's intention to undertake the study, which included the deployment of thirteen CNG refuelling stations in Ireland, a Renewable Natural Gas injection facility and the support of CNG vehicles, over a period of 5 years. As shown Figure 1 below the total cost of the GNI element of the Causeway Study is **€23.47m**, of which GNI has secured EU funding of **€5.96m**, and has previous funding of **€4.68m** from PC3. The EU funding is conditional on GNI securing the additional **€12.83m** shortfall to complete the study.

Causeway Action Cost - GNI		Original Submission	CEF Funding GNI	Innovation Fund	Shortfall
Activity 1	Project Management	€ 2,559,700	€ 1,037,702	€ 400,000	€ 1,121,998
Activity 2	Pilot CNG Network	€ 16,543,297.00	€ 3,152,457	€ 2,725,697	€ 10,665,143
Activity 3	CNG Vehicles and Supports	€ 760,385	€ 308,260	€ 400,000	€ 52,125
Activity 4	Biogas Injection Facility	€ 1,945,135	€ 788,558	€ 1,156,577	€ -
Activity 5	System Operation & Data Analysis	€ 1,491,167	€ 604,519	€ -	€ 886,648
Activity 6	Communication and Dissemination	€ 172,059	€ 69,753	0	€ 102,306
Total		€ 23,471,743	€ 5,961,249	€ 4,682,274	€ 12,828,220

Table 1 Causeway Study Action Cost

The CER's legislative role is outlined in the *Gas (Interim) (Regulation) Act, 2002*, as amended (the Act). Under the Act, the CER is responsible for regulating charges in the natural gas market. Under Section 14 of the Act, the CER may set the basis for charges for transporting gas through distribution systems.

2.2 Overview of Consultation responses

In (CER/16/258), the CER sought the views of the gas industry, potential users and suppliers of CNG and any other interested parties on (i) the proposal from GNI to undertake a study on the impact of CNG on the gas network and (ii) views on GNI's request for CER's approval to recover the shortfall from gas customers.

The CER received 21 responses to (CER/16/258) and most were broadly in favour of GNI carrying out the study. Responses received were from existing natural gas suppliers, potential users of CNG, and also from potential producers of Renewable Natural Gas (RNG). Seven respondents expressed an interest in using CNG as a transportation fuel. A number of responses were received from potential producers of RNG, such respondents view CNG as a potential future market for RNG and as such, were in favour of the roll out of the CNG stations.

Location of CNG stations

One respondent, while supportive of the project, stated that the roll out of CNG stations should extend beyond the Core Ten-T network.

CER Response

The CER acknowledges the positive responses received to (CER/16/258) signalling the interest amongst industry participants in the use of CNG. Regarding the roll out of CNG stations, the CER expect that GNI will provide the best value for the gas customer. As such, it will be a matter for GNI to consider whether CNG station installations located off the Core Ten-T network will provide a higher throughput than an installation on the Core Ten-T network.

Asset Ownership and Regulatory Treatment of Assets

Two respondents expressed reservations regarding the ownership of the CNG stations by GNI. The respondents are of the view that it would be preferable if the ownership and operation of the CNG stations were tendered to the private sector by GNI. The respondents argued that this would enable private competition in the marketplace from the outset. The respondents further stated that GNI could provide oversight of the technical and operating standards in addition to providing capital and operating funding support. The respondents were of the view that this arrangement would provide the best value for the CNG customer.

Another respondent, while supportive in general, was of the view that the CNG infrastructure should not be placed on the GNI Regulated Asset Base.

CER Response

The CER notes the views submitted regarding the status of the ownership of the assets developed during the trial. The CER will keep this issue under review over the course of the Causeway Study, and if appropriate, the CER will make a decision on this at the appropriate time. However at this point, it remains the position of the CER that should GNI use the innovation funding for the Causeway trial, the infrastructure should be developed in such a way so that it may be sold by GNI.

The above approach is similar to the previous CER decision regarding the treatment of Electric Vehicle (EV) infrastructure⁵. In this instance, the CER provided ESB Networks with monies for the roll out of EV charge points. Following this decision, the CER published a consultation paper (CER/16/286)⁶ on a range of potential options regarding the ownership of EV assets.

The CER is of the view that achieving interoperability should be an important element of this trial. The CER expects that GNI will engage with stakeholders and leverage different areas of expertise and experience. It is up to GNI to work with the appropriate agencies involved in the promotion of CNG infrastructure to attempt to safeguard interoperability. From the CER's point of view, interoperability should facilitate greater use of the CNG infrastructure and so should facilitate a more successful and robust trial.

The CER also notes the comments that the assets should not be placed on GNI's Regulated Asset Base. The consultation paper (CER/16/258), stated that the CER would consider the regulatory treatment of the CNG infrastructure within the context of PC4. Such consideration will be informed by the CER's decision on regulatory treatment of Electric Vehicles (EVs) which is due for publication shortly.

Scope of Study

One respondent was of the view that the scope of the study was too narrow and should be broadened. The respondent stated that the Causeway Study should report detailed analysis on the following:

- The appetite for CNG conversion amongst transport fleet owners;
- The scope for and cost of the development of renewable gas in Ireland; and
- That the study should consider the overall impact on the gas customer.
-

⁵ [CER/14/057](#) CER Decision Paper on ESB Electric Vehicle Pilot.

⁶ [CER/16/286 ESNB Electric Vehicle Pilot and Associated Assets](#)

CER Response

The CER agrees with the response regarding the reporting arrangements. As such, should GNI use the innovation funding for the CNG trial it would be subject to a number of conditions as outlined in Section 4.

Summary

In summary, most responses to (CER/16/258) were positive and in favour of the progression of the Causeway Study and the roll out of the thirteen CNG stations in Ireland.

3 CER Analysis of GNI Submission

3.1 NPV and Sensitivity Scenarios

Following an assessment of the submission from GNI the CER performed a sensitivity analysis (see Table 2) of the NPV of the project over a 25 year and 15 year basis. The CER were of the view that given the uncertainties associated with CNG infrastructure and potential for technological developments in this area that the analysis carried out over the 15 year period should be the focus.

Scenario	Description
Sensitivity 1a	<p>Slower station roll out was assumed as follows:</p> <ul style="list-style-type: none"> • 2 stations in 2016; • 3 stations in 2017; • 3 stations in 2018; • 5 stations in 2019. <p>The slower station roll-out profile also results in lower CNG take up in the first years. The maximum demand level is reached one year later than the original forecast.</p>
Sensitivity 1b	As above plus assumed that capex unit costs increase by 10% for the 11 stations delivered after 2016.
Sensitivity 1c	<p>As above plus assumed that:</p> <ol style="list-style-type: none"> 1) opex base cost increases from €12,000 to €15,000 per station per year; and 2) electricity costs increase by 1.5% per year from 2019 onwards.

Table 2: Scenario sensitivity analysis -15 years

The CER found that in the event of minor fluctuations in some of the GNI projections, the NPV gain over the lifetime of the project diminishes or turns negative. The impact of these fluctuations are outlined in Figure 1 below.

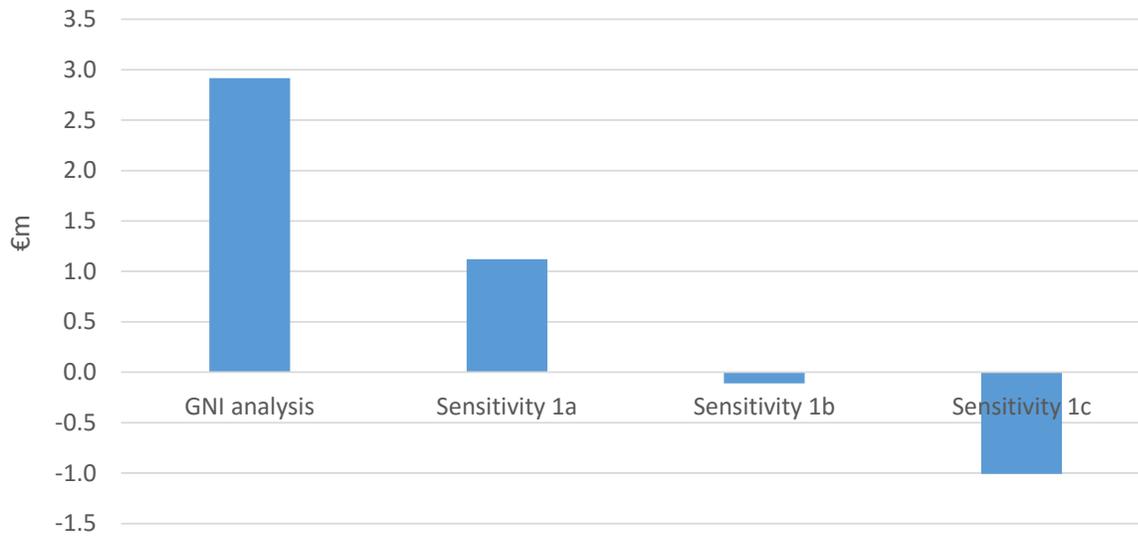


Figure 1 Sensitivity analysis 15 year appraisal

It was also the case that the underlying assumptions presented by GNI were uncertain. This uncertainty is driven by the fact that CNG as a transport fuel is very much in its infancy in Ireland, and therefore it is difficult to predict the demand for its use over the medium to longer term. As such, the CER view the GNI proposed project to be still very much at the innovation stage.

It is important to note that the CER is supportive of projects that increase gas demand and place downward pressure on individual gas tariffs. In the case of new towns the CER is in a position to examine the previous energy demands of companies connecting to the gas network and make a determination with regard to future energy demands. This allows the CER to determine whether or not a new connection is likely to be NPV positive or NPV negative.

In relation to GNI's submission, it is assumed that by 2024, the CNG market will be made up of 266 trucks and 254 busses, this assumption feeds into the projected demand of CNG and hence, the positivity of the assessment from GNI. However, given the uncertainties regarding the GNI assumptions the CER is not confident, at this juncture, that the growth of CNG will meet the levels that GNI is predicting.

4 CER Decision

Recognising the potential benefits that CNG may bring to the gas customer and the positive responses received to consultation (CER/16/258), the CER has deemed it appropriate that GNI be provided with an innovation funding of €12.83m as part of PC4. Innovation funding is an allowance given to GNI for research and development and may include projects where the financial benefits are not yet certain.

By way of precedent, the CER as part of Price Control 3 (PC3) allowed for the establishment of an innovation fund by GNI to support innovation in the gas industry. A total of €8m was allocated to this fund. To date, approximately 50% of the fund has been spent on CNG research and the conducting of trials with a number of potential commercial operators. The research from these trials indicated a significant interest in the use of CNG for vehicular transport. This further innovation funding will provide GNI with the opportunity to progress CNG to the next phase.

The CER recognises that the allowance of €12.83m for innovation funding represents a significant increase when compared to the innovation funding of €8m allowed to GNI under PC3. As stated earlier, given this large increase, it is difficult to see how the CER would agree to provide further additional funding for innovation under PC4 unless there were exceptional circumstances.

The consultation paper (CER/16/258), stated that the CER would consider the regulatory treatment of the CNG infrastructure within the context of PC4. Such consideration will be informed by the CER's decision on the regulatory treatment of Electric Vehicles (EVs) which is due for publication shortly.

Should GNI proceed with the Causeway trial it must meet the following safety requirements:

Safety Requirements

GNI will be required to install and maintain the infrastructure in line with CER safety requirements.

Additionally should GNI use the innovation funding for the CNG trial it would be subject to a number of conditions. GNI will be required to meet the following conditions:

Reporting

GNI will be required to provide an innovation report to the CER on an annual basis outlining the findings of the trial. GNI will also be required to prepare and publish a final report on the benefits to the gas customer at the end of the trial.

Sale of Assets

GNI will be required to install the infrastructure in such a way so the assets could be sold to a third party once the pilot is complete.

5 Conclusion and Next Steps

In conclusion, the CER deem it appropriate that GNI be provided with innovation funding of €12.83m as part of Price Control 4 (PC4), which will be recovered through network tariffs.

The CER also notes that the Department of Transport, Tourism & Sport is currently consulting on a Draft National Framework Policy (NPF) for alternative fuels. The NPF makes a number of references to CNG and potential incentives to drive the development of CNG. The CER will engage with DTTAS regarding the draft NPF and welcomes the finalised National Framework Policy for alternative fuels.

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