Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

Review of Fuel Stock Obligations for Electricity Generators as specified in CER/09/001

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CER – Information Page

In 2009, the CER issued a Decision Paper – Secondary Fuel Obligations on Licensed Generation Capacity in the Republic of Ireland (CER/09/001). The 2009 Decision Paper specified the level of primary and secondary fuel stocks electricity generators are required to maintain. Since 2009, significant developments have taken place within Ireland's electricity and gas markets including increased renewable generation, the commissioning of the East West Interconnector, and the imminent first gas flows from the Corrib gas field. Such developments have implications for Ireland's energy security of supply. The purpose of this Consultation Paper is to consider whether current fuel stock obligations on Ireland's electricity generators are appropriate.

Target Audience:

This Consultation Paper is for the attention of energy customers, members of the public, the energy industry and all other interested parties.

Related Documents:

- Secondary Fuel Obligations on Licensed Generation Capacity in the Republic of Ireland (CER/09/001);
- EirGrid's Secondary Fuel Testing Arrangements Summary Document (July 2010); and
- EirGrid's Secondary Fuel Testing Compensation Arrangements Summary Document (July 2010).

The CER intends to publish all submissions received. Respondents who do not wish part of their submission to be published should mark this area clearly and separately or enclose it in an Appendix, stating the rationale for not publishing this part of their comments.

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1.0 Introduction

1.1 The Commission for Energy Regulation

The Commission for Energy Regulation (CER) is Ireland's independent energy and water regulator. The CER was established in 1999 and now has a wide range of economic, customer protection and safety responsibilities in energy. The CER is also the regulator of Ireland's public water and wastewater system.

The CER's primary economic responsibilities in energy cover electricity generation, electricity and gas networks, and electricity and gas supply activities. As part of its role, the CER jointly regulates the all-island wholesale Single Electricity Market (SEM) with the Utility Regulator in Belfast. The SEM is governed by a decision-making body known as the SEM Committee, consisting of the CER, the Utility Regulator and an independent member. The overall aim of the CER's economic role is to protect the interests of energy customers. The CER has an important related function in customer protection by resolving complaints that customers have with energy companies.

The CER's core focus in safety is to protect lives and property across a range of areas in the energy sector. This includes safety regulation of electrical contractors, gas installers and gas pipelines. In addition the CER is the safety regulator of upstream petroleum safety extraction and exploration activities, including on-shore and off-shore gas and oil.

In 2014, the CER was appointed as Ireland's economic regulator of the Irish public water and wastewater sector.

Further information on the CER's role and relevant legislation can be found on the CER's website at www.cer.ie.

1.2 Background information

In 2009, the Commission for Energy Regulation (CER) issued Decision Paper CER/09/001 ("2009 Decision") regarding secondary fuel obligations for licensed electricity generators in Ireland. The 2009 Decision identified which categories of electricity generators are required to hold fuel stocks and their associated fuel stock levels, with the purpose of protecting Ireland's electricity security of supply.[1]

[1] For the purposes of this Consultation Paper, fuel stock is viewed as the amount of electricity that could be generated in the plants available given the fuel stored at these plants.

The CER committed to keeping the 2009 Decision under "continuous review". In the intervening period, a number of significant changes have taken place in Ireland's electricity and gas sectors, while a number of changes are expected in the future including:

- a declining proportion of gas use in electricity power generation;
- opening and closure of a number of electricity generation plants;
- increased wind generation;
- commissioning of the East-West Interconnector;
- increased investment in gas infrastructure (e.g. twinning of gas pipeline in South West Scotland Onshore System);[2] and
- new sources of indigenous gas (i.e. Corrib) coming on stream.

1.3 Purpose of this paper

Given the developments outlined above, coupled with concerns regarding gas security of supply at a European level (due to a potential interruption of Russian gas supplies),[3] the CER is of the view that it is appropriate to consider whether changes to the existing fuel stock obligations on electricity generators are merited.[4] Therefore, this Consultation Paper affords members of the public, the energy industry, and all interested parties the opportunity to provide input into the review of its 2009 Decision.

1.4 Structure of this paper

The structure of this Consultation Paper is as follows:

- Section 2: outlines the legislative basis for the CER's electricity security supply obligations and functions, and outlines the key elements of the 2009 Decision;

- Section 3: identifies the key changes in Ireland's electricity and gas sectors since the 2009 Decision;

- Section 4: undertakes a sensitivity analysis of aggregate fuel stocks in the event of changes to fuel stock obligations set out in the 2009 Decision;

[2] See CER Decision (CER/15/102) for further details.

[3] The EU Commission's 2014 consultation on Regulation (EU) 994/2010 (Gas Security of Supply) noted that proposed revisions to the Regulation (EU) 994/2010 has been "inspired primarily by the risk of a disruption of Russian gas supplies".

[4] For the purposes of this paper, fuel stock refers to both primary and secondary fuel stocks that are available for use by generators in the event of a fuel shortage/emergency. The Grid Code defines primary fuel as the fuel or fuels registered in accordance with the Grid Code as the principal fuel(s) authorised for energy production by the Generation Unit. In circumstances, where generators cannot hold stocks of their primary fuel, their fuel stock obligations can be met by holding secondary/back-up fuel stocks, which can be used to generate electricity.

- Section 5: outlines current fuel stock testing arrangements and electricity generators compliance with fuel stock obligations; and

- Section 6: sets out the key consultation questions arising from this Consultation Paper and outlines the CER next steps regarding its review of the 2009 Decision.

1.5 Responding to this paper

Responses to this paper should be in the form of e-mail or post and marked for the attention of:

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The CER intends to publish all submissions received. Respondents who do not wish part of their submission to be published should mark this area clearly and separately or enclose it in an Appendix, stating the rationale for not publishing this part of their comments.

2.0 Legislative Basis for Fuel Stock Obligations & Overview of 2009 Decision

This section sets out the legal basis for fuel stock obligations placed on electricity generators operating within Ireland, and provides an overview of the 2009 Decision (see Section 2.2) regarding:

- requirement to hold primary/secondary fuel stocks;
- the monitoring of fuel stocks; and
- secondary fuel testing and cost recovery.

2.1 Legal Basis for Fuel Stock Obligations

The CER's statutory obligations in relation to electricity security of supply are detailed within the Electricity Regulation Act 1999 ("1999 Act") and Statutory Instrument 60 of 2005 (S.I. 60 of 2005).[5]

In accordance with Section 9(4) of the 1999 Act, the CER must have regard to the need "*to promote the continuity, security and quality of the supply of electricity*" and "*to secure that all reasonable demands by final customers of electricity for electricity are satisfied*".

Furthermore, section 28(5) of S.I. 60 of 2005 states that "*the Commission shall take such measures as it considers necessary, to protect security of supply.*" Such measures taken by the CER include imposing an obligation on electricity generators to hold fuel stocks, as stated in the 2009 Decision.

The CER enforces fuel stock obligations on electricity generators through the inclusion of conditions contained within the "Authorisation to Construct or Reconstruct a Generation Station" licence and the "Electricity Generation Licence". The relevant conditions are as follows:

- **Condition 6 of the Authorisation to Construct or Reconstruct a Generation Station Licence.**

  Requires that "*a generating station to be constructed or reconstructed shall be capable of storing and using a fuel source, other than that proposed to be used predominantly by the generating station, to generate electricity for a minimum continuous period*".[6]

[5] S.I. 60 of 2005 refers to the European Communities (Internal Market in Electricity) Regulation. S.I. 60 of 2005 transposed EU Directive 2003/54/EC and Directive 2005/89/EC (concerning common rules for the internal market in electricity) into Irish law. Since the 31st March 2011, Directive 2003/54/EC has been repealed and replaced by Directive 2009/72/EC. The requirements in Directive 2009/72/EC regarding security of supply replicate the requirements contained in Article 4 of Directive 2003/54/EC as transposed by S.I. 60 of 2005.

[6] S.I. 309 of 1999 "Criteria for Determination of Authorisations" sets out the criteria on which an Authorisation to Construct can be issued. Specifically, S.I.309 of 1999 states that an application for an authorisation may be

- **Condition 6 of the Electricity Generation Licence.**

  States that "*Where requested by the Commission, the Licensee shall co-operate with the Commission in strategic contingency planning in respect of fuel stocks and procedures under the Grid Code during periods when the Commission deems necessary for reasons of security of supply*."

2.2 Requirement of Generators to hold Fuel Stocks

The 2009 Decision specifies the fuel stock obligations for all licensed generators, as summarised in Table 2.1 below:

Table 2.1 Fuel Stock Requirements[7]

Primary Fuel Type of Generation Unit	Requirement to be capable of running on secondary fuel	Requirement to hold stocks of that fuel
Gas units and CHP units of more than 10MW	Yes	Requirement to hold secondary fuel
Non-gas units such as oil and coal (excluding renewable and peat units	No requirement	Requirement to hold primary fuel
Renewable units	No requirement	No requirement
CHP units of 10MW or less	No requirement	No requirement
Peat units	No requirement	No requirement

With reference to the quantity of fuel to be stored, a plant operating over 2,630 hours per annum (i.e. Higher Merit Generating Units) is required to hold 5-days (120 hours) of fuel stock while a plant operating below 2,630 hours per annum (i.e. Lower Merit Generating Units) is required to hold 3-days (72 hours) of fuel stocks.[8]

determined by the Commission in accordance with specific criteria, including where "the Commission is satisfied that the generating station to which the application relates will be capable of generating electricity for any minimum continuous period which is specified by the Commission in the authorisation using a primary fuel source of a nature other than that proposed to be used predominantly".

[7] The CER may grant a derogation from the requirements due to exceptional circumstances. In this case, a technically acceptable and valid case will have to be submitted to the CER, proving the derogation from a particular obligation is required.

[8] CHP units greater than 10MW are required to hold 1 day of fuel stock, as per the 2009 Decision. 1 day of fuel stock refers to the amount a fuel required for an electricity generator to operate continuously for 24 hours.

Additionally, generating units required to run on a secondary fuel must be capable of generating on its secondary fuel at no less than 90% of the unit's capacity on its primary fuel. For example a 100MW generation unit must be capable of an output of at least 90MW on secondary fuel.

The 2009 Decision also provides for two options for the holding of fuel stocks:

- **Option 1:** Stocks can be held on the generating unit's own site for its full requirement; or
- **Option 2:** Stocks can be held on the generating unit's own site equivalent to one-days running at full output. The remainder of the stocks can be stored by a third party for the generator's full requirement subject to specific arrangements.[9]

2.3 Monitoring of Fuel Stocks

The 2009 Decision provides for the monitoring and replenishing of fuel stocks as follows:

- EirGrid may examine the fuel stocks of the electricity generator to ensure compliance with the requirements of the 2009 Decision. At EirGrid's request, generators are required to declare the amount of usable fuel;
- Arrangements for replenishment of secondary and primary fuel stocks and demineralised water, if applicable, are to be advised to the CER on an annual basis. If the fuel is used, then the generator should make arrangements immediately to replenish the stock; and
- Fuel stocks should be stored in a usable form.

2.4 Secondary Fuel Testing & Cost Recovery

The 2009 Decision confirms that EirGrid can perform up to two successful tests per year on each generating unit, and that EirGrid (following consultation) will develop the necessary arrangements and procedures to be followed for the tests (see section 5 for further details).[10] Additionally, the 2009 Decision states that the variable costs for testing the unit on its secondary fuel would be remunerated through the Ancillary Services Mechanism.[11]

Payments for a failed test will only be made once in a calendar year and only in the event that the generator has completed a successful secondary fuel re-test within a calendar month of the secondary fuel test fail. In that instance, the generator will be paid for both the failed test and the re-test. If on re-test the generator fails again, the generator will not be compensated for either the failed test or the re-test.[12]

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[9] These specific arrangements include that the fuel is stocked in close vicinity to the generating unit. A dedicated supply line (pipeline) with a dedicated pump must also be in place between the secondary fuel tank off-site and the generating station or the storage tank onsite. Furthermore, a legal agreement that enables the generating unit to draw down its fuel stock to comply with security of supply requirements should be in place and a copy provided to the CER.

[10] In July 2010, EirGrid published its Secondary Fuel Testing Arrangements Summary Document.

[11] Information regarding cost recovery is available within EirGrid's Secondary Fuel Testing Compensation Arrangements Summary Document (July 2010).

[12] Secondary Fuel Testing Compensation Arrangements

3.0 Developments in Electricity & Gas Sectors since 2009 Decision

Significant developments have taken place within Ireland's electricity and gas sectors since the 2009 Decision, while some developments are expected in the future including:

- a declining proportion of gas use in electricity power generation;
- opening and closure of a number of electricity generation plants;
- increased wind generation;
- commissioning of the East-West Interconnector;
- twinning of gas pipeline in SWSOS; and
- new sources of indigenous gas (i.e. Corrib) coming on stream.

Such sectoral developments are relevant to the review of the 2009 Decision as they impact on Ireland's energy security of supply. Consequently, these developments are discussed in Section 3.1, followed by CER commentary on the implications for the 2009 Decision (see Section 3.2).

3.1 Sectoral Developments

3.1.1 Changes in Gas Consumption for Electricity Generation

While electricity demand in Ireland is met through various sources of electricity generation, gas fired electricity generation remains Ireland's dominant source of electricity generation (gas accounted for approximately 48% of electricity production in 2014).[13] Despite Ireland's dependence on gas for electricity generation, significant changes have occurred regarding the use of gas. In particular, gas consumption for electricity generation has decreased compared to its peak of 62% in 2010[14], which is in part due to increased renewables generation and coal-fired generation.

3.1.2 Opening and Closure of Electricity Generation Plants

Since the 2009 Decision, a number of generation plants have opened including:

- 431 MW Combined Cycle Gas Turbine (CCGT) plant in Aghada, Co. Cork;
- 442 MW CCGT plant in Whitegate Co. Cork; and
- 431 MW CCGT plant in Great Island, Co. Wexford.

[13] Sustainable Energy Authority of Ireland (SEAI): Energy in Ireland, Key Statistics

[14] SEAI Energy Statistics in Ireland 1990-2011

Despite these new generation plants, it should be noted that a number of generation units at Poolbeg[15] and Great Island[16] have closed. Furthermore, Tarbert power station is expected to decommission its Heavy Fuel Oil (HFO) units TB1, TB2, TB3 and TB4 in 2022/23, which have a combined generation capacity of 590 MW. [17]

3.1.3 Increasing Wind Generation

In 2008, the Government set a renewable energy target of 40% by 2020, which will be met predominantly by wind power generation.[18] Consequently, the percentage of renewables on the electricity system has increased significantly since 2009.[19] A corollary of increased renewables is that gas fired electricity generation plants are now required to be more flexible to cater for the variable nature of renewable electricity generation. Furthermore, as renewable generation increases, there will be a reduced output due to increased down time and increased cycling and wear and tear on gas fired generating units.

3.1.4 Commissioning of the East West Interconnector (EWIC)

The EWIC was commissioned in October 2012 and can provide 500MW of electricity (equivalent to a large power station), thereby reducing Ireland's production from gas-fired electricity generation. The interconnector is used almost daily and typically delivers electricity to Ireland from the UK.

3.1.5 Gas Production from Corrib

With the expected commencement of commercial operation at Corrib, Ireland's dependence on gas imports from GB will decrease, at least in the short term.[20] Corrib is expected to meet approximately 74% of Ireland's annual gas demand and almost 40%[21] of Ireland's peak day gas demand in its first full year of commercial production. However, Corrib have predicted a short

[15] Poolbeg units (i.e. PB1, PB2, and PB3) Heavy Fuel Oil (HFO) were decommissioned in 2010, and had a combined generation capacity of 461 MW.

[16] Great Island HFO units (i.e. GI1, GI2, and GI3) had a combined generation capacity of 212 MW.

[17] EirGrid Draft Transmission Development Plan 2013-2023

[18] The national target specified in the 2007 Government *Energy White Paper — Delivering a Sustainable Energy future for Ireland* was 15% by 2010 and 33% by 2020. In the Carbon Budget of October 2008, the 2020 target was increased from 33% to 40%.

[19] An analysis of Electricity Fuel Mix in Ireland (as Percentage of Demand) indicates that the share of total renewables has increased from 12.9% in 2010 to 22.6% in 2014. Wind accounted for the largest share of renewable electricity generation, with wind's proportion of Ireland's electricity fuel mix increasing from 9.7% in 2010 to 18.2% in 2014.

[20] The majority of gas demand in Ireland (circa 93%) is currently met via imports from GB via the Moffat Interconnection Point, with the remainder being supplied from the Inch Entry Point.

[21] Gaslink Network Development Plan 2014

production profile and to deplete rapidly within eight to ten years of its commencement (i.e. 2023-2025).

3.1.6 Twinning of GNI's Gas Pipeline in Scotland

In May 2015, the CER approved Gas Network Ireland's proposal to twin a section of gas pipeline in South West Scotland's Onshore System (SWSOS).[22] Upon completion, the twinning of this 50 km section of pipeline will improve security of gas supply to Ireland, Northern Ireland and the Isle of Man.

3.1.7 Shannon LNG

Shannon LNG (SLNG) propose to develop a LNG terminal at Ballylongford in Co. Kerry, which has the potential to significantly contribute towards security of gas supply in Ireland, by enabling access to international gas markets, via LNG shipments. The terminal could have an initial peak send out capacity of 17mscmd (191 GWh/d), with the potential to increase to 28.3mscmd (314.7 GWh/d) dependent on market demand. In the event that the SLNG project proceeds, it would have a positive impact on Ireland's gas security of supply.

3.1.8 Other Developments

Notwithstanding recent sectoral developments within Ireland's electricity and gas sectors, it should be noted that the International Energy Agency's (IEA) Review Team conducted an Emergency Response Review of Ireland in 2014. One of the recommendations within the IEA's report was that the CER should:

> "*consider maintaining an appropriate obligation to ensure reasonable levels of secondary stocks are kept on site. Furthermore, considering the current limited gas storage capacity and low level of secondary fuel stocks at those power stations, the Review Team expresses grave concern that Ireland - especially the power sector - is vulnerable to a long-term supply disruption of natural gas".*

There has also been an enhanced focus on security of supply within the EU. The uncertainty of gas supplies from Russia has triggered increased emphasis on gas security of supply within the EU. Given the finding of the IEA above, it is of utmost importance that the CER ensure that adequate levels of fuel stock are available in the event of a gas supply disruption.

[22] At present, Interconnectors 1 and 2 exit Beattock Compressor Station as two separate pipelines for a distance of 30 km and converge at Cluden into single section of pipeline for 50 km to Brighouse Bay compressor station, before diverging and entering the Irish Sea as two pipelines.

3.2 CER Commentary

The identified developments within the electricity and gas sectors (as set out in Section 3.1) can present countervailing reasons for and against amending the 2009 Decision, including:

- **Corrib:** Given that the Corrib gas field will enhance Ireland's security of gas supply, there may be merit in a relaxation of gas generators' secondary fuel stock obligations (while the gas field makes a significant contribution to Irish gas demand). However, it may be prudent to maintain existing fuel stock obligations given Corrib's relatively short production profile.

- **Renewable Generation:** Increased renewable electricity generation can result in a decreased dependence on imported fossil fuels for electricity generation. Despite increased renewable generation, there is a possibility that no wind generation will be available during an emergency scenario such as a gas supply disruption. Therefore, there may be an argument for maintaining or increasing the requirement on electricity generators to hold fuel stocks. However, while increasing these obligations will enhance Ireland's ability to cope with a gas supply disruption, it will also require electricity generators to have larger storage facilities and purchase additional fuel stocks. This could place an increased financial burden on electricity generators who are exposed to lower revenues, as a result of reduced operating hours. Furthermore, it may disincentivise electricity generators' entry into the electricity market.

- **EWIC:** The EWIC reduces Ireland's dependence on gas powered electricity generators. Therefore, it could be argued that the CER should reduce its fuel stock obligations on electricity generators. However, if Irish gas supplies were interrupted as a result of a GB gas supply shortage, it is possible that there would be reduced electricity supplies available from GB (via the EWIC). Consequently, it can be suggested that the EWIC should not impact the 2009 Decision regarding fuel stock obligations on Ireland's electricity generators.

- **Twinning of Gas Pipeline in SWSOS:** The twinning of gas pipeline by Gas Networks Ireland increases linepack and reduces the risks of a gas supply interruption due to infrastructure failure in Scotland. Consequently, an argument could be made for a relaxation of the fuel stock obligations within the 2009 Decision. However, in the event of a gas supply disruption in GB, the twinning of the gas pipeline does not resolve any potential gas supply shortages in Ireland. Therefore, it can be argued that it would be reasonable to maintain or increase fuel stock obligations on electricity generators.

For the purposes of this Consultation Paper, it is clear that any decision to amend existing fuel stock obligations needs to balance issues of costs with the additional backup for protecting Ireland's energy security from risks to supply interruptions. The CER is of the view that the existing fuel stock obligations remain appropriate in this regard. Notwithstanding this, the CER welcome the views of interested parties on this matter. The CER requests that respondees

consider developments in the gas and electricity sectors including comments from the IEA, when responding to this Consultation Paper.[23]

[23] See Section 6.0 for consultation questions

4.0 Sensitivity Analysis of Generator Fuel Stocks under Future Scenarios

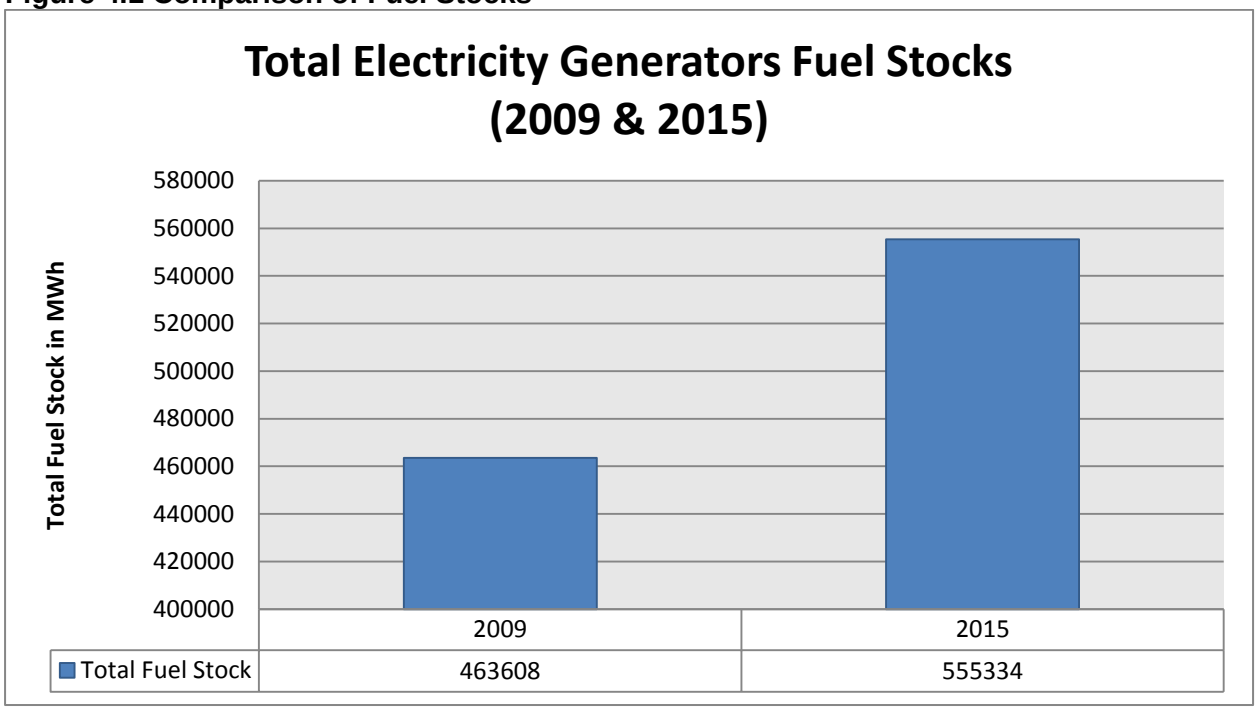
This section initially examines the aggregate changes in Ireland's generators' fuel stock days since the implementation of the 2009 Decision, by comparing estimated fuel stock days in 2009 and 2015. In order to quantify the impact of potential changes to the fuel stock obligations under the 2009 Decision, Section 4.2 and Section 4.3 outlines the results of a high level scenario and sensitivity analysis conducted by the CER for two time periods (i.e. 2015 and 2022).

It should be noted that the aggregate fuel stock provided in this Consultation Paper is an estimate, which is based on a simplified set of assumptions.[24] Therefore, the data provided should not be viewed as an exact number of days that generators will be able to supply electricity in the event of fuel supply interruption. Instead, the scenarios should be interpreted as a simplified mechanism for assessing the potential impacts of changes to the 2009 Decision's fuel stock obligations.

4.1 Aggregate Generator Fuel Stocks (2009 & 2015)

Figure 4.1 highlights the changes in fuel stock levels (expressed in MWh) between 2009 - 2015.

Figure 4.1 Comparison of Fuel Stocks



[24] Fuel stocks of the relevant generators (i.e. gas, coal & oil) are initially expressed in MWh of electricity output. The MWh figure represents the amount of generation capacity available for generators that are holding fuel stocks in the event of a gas supply interruption. The estimated number of generation days is calculated by dividing total daily electricity demand (MWh) less wind into total MWh of fuel stock. Additionally, for the purpose of this analysis it is assumed that generators do not hold more than 5 days of fuel stocks and that electricity generators are capable of fuel switching. The CER notes that this may not necessarily be fully accurate, as some generators may hold more than 5 days stock, and that some generators may not be able to fuel switch due to maintenance/repairs.

The increase in MWh in 2015 in comparison to 2009 (i.e. total increase of 91726 MWh) can in part be attributed to construction of Aghada CCGT (2010), Whitegate CCGT (2010) and Great Island CCGT (2015).[25] Converting the available MWh into generation days indicates that generators' ability to generate electricity have increased from approximately 5.7-7.3 days in 2009 to 7.1 – 10.4 days in 2015.[26] Therefore, this initial analysis indicates that Irish electricity generators can provide a greater number of fuel stock days in 2015 relative to 2009.

4.2 Aggregate Impact of Changes to Fuel Stock Obligations (2015 & 2022)

In order to assess the aggregate impact of potential changes to the 2009 Decision, this section examines three potential scenarios, and assesses how these potential changes impact on Ireland's generators' current (i.e. 2015) and future fuel stock levels (i.e. 2022). For clarity, it should be noted that the scenario analysis assumes that no fuel stock obligations are imposed on renewable units, peat units, and CHP units (at or below 10MW).

The scenario analysis is as follows:

- **Scenario 1:** This is a base case scenario and assumes no change to requirement to hold stocks based on operating hours (as specified within the 2009 Decision);
- **Scenario 2:** Requirement for generators to hold 3 days (72 hours) of fuel stock; and
- **Scenario 3:** Requirement for generators to hold 5 days (120 hours) of fuel stock. [27]

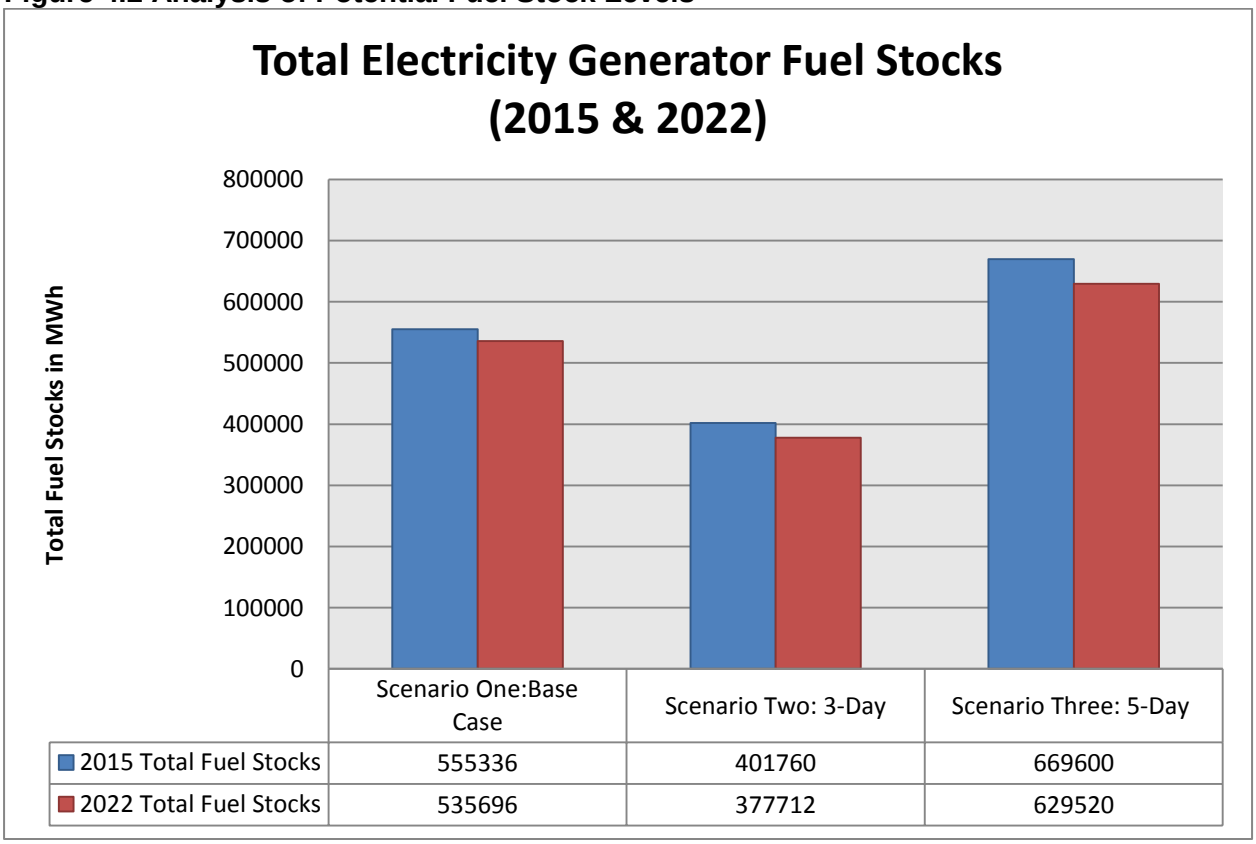
The results of the scenario analysis for 2015 and 2022 are presented in Figure 4.2. As previously indicated, the fuel stocks of the relevant generators (i.e. gas, coal and oil) are initially expressed in MW. The MW figure represents the amount of generation capacity available for generators that are holding fuel stocks in the event of an energy supply interruption.

[25] It is assumed that Great Island will operate at full capacity and have 5 days of fuel stock.

[26] The fuel stock days are provided within a range, as the fuel stock days may vary depending on electricity demand and level of renewable generation.

[27] Generators refers to conventional electricity generators i.e. gas, coal, and oil fired generators.

Figure 4.2 Analysis of Potential Fuel Stock Levels



As illustrated in Figure 4.2, Ireland's electricity generators' aggregate fuel stocks will decrease between the period 2015 and 2022 (under a base case scenario). This can primarily be attributed to the closure of generating units at Tarbert.

Therefore, if the 2009 Decision is not amended, it is expected that electricity generators (at an aggregate level) have marginally less fuel stocks in the short to medium term in the event of an energy supply interruption. However, Irish electricity generators' estimated fuel stocks for 2022 will still be higher than 2009's estimated fuel stock levels.

If it was determined as necessary to keep aggregate fuel stocks at current 2015 levels in 2022, a higher fuel stock obligation on electricity generators would have to be implemented in order to maintain 2015 levels of supply security provided by electricity generators.

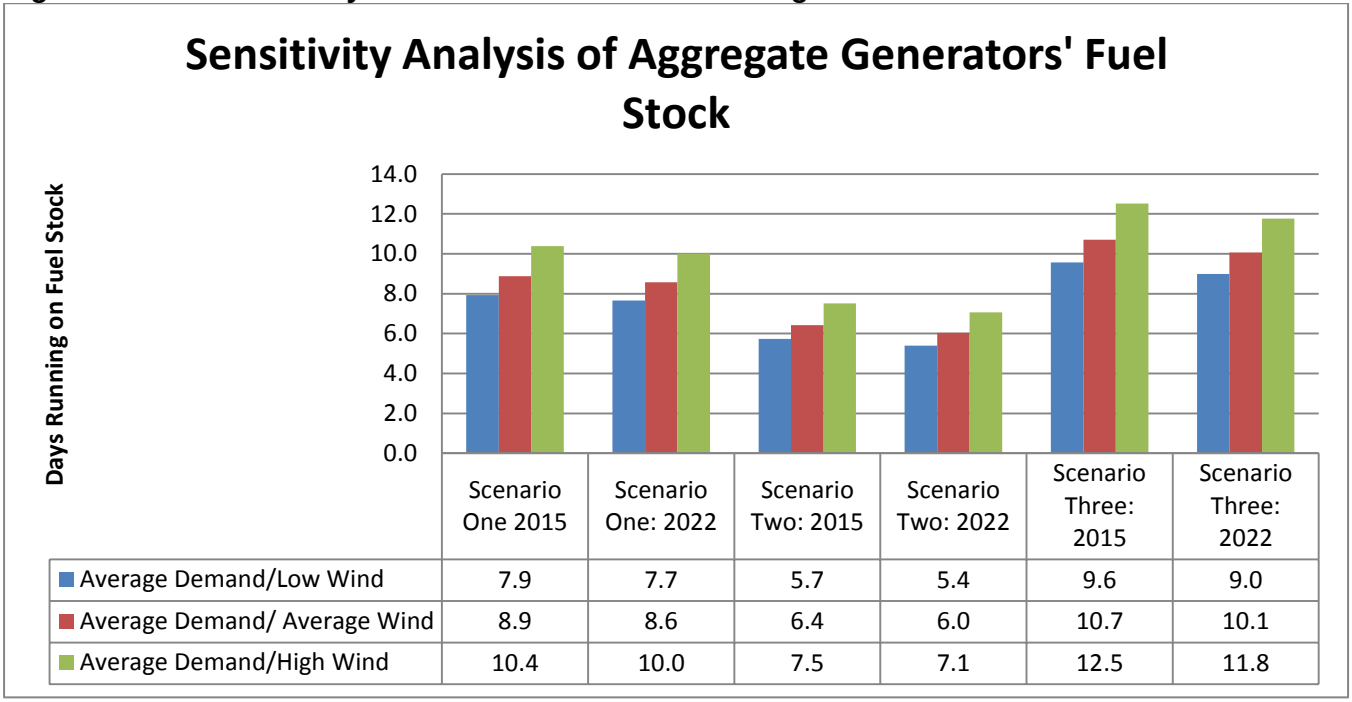
The CER has extended the scenario analysis undertaken within this Consultation Paper, by adjusting the number of fuel stock days to take account of:

- average and peak periods of electricity demand;[28] and
- varying levels of wind (i.e. low, average and high).[29]

[28] Total average electricity demand in Ireland is estimated to be 73,500 MWh/Day and total estimated electricity demand on a peak electricity demand day in Ireland is estimated to be 82,000 MWh/Day. This estimate is based on data derived from EirGrid's Electricity Statistics for 2012 and 2013.

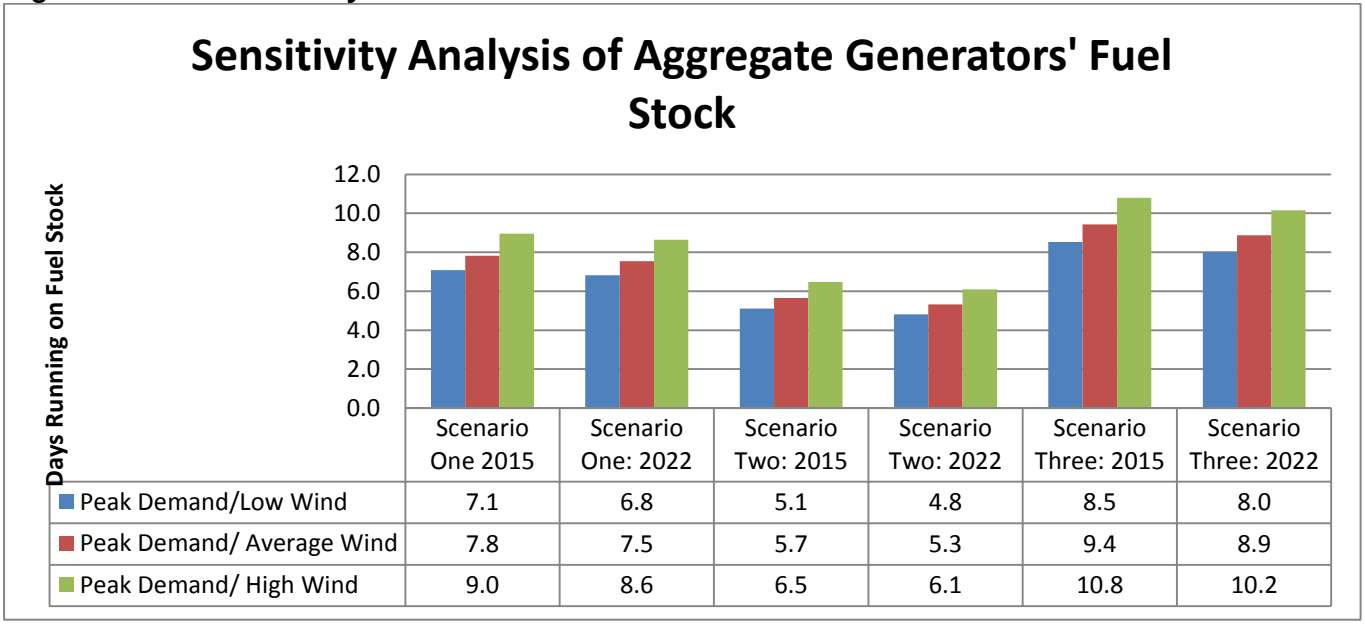
The results of this sensitivity analysis are presented in Figure 4.3 and Figure 4.4.

Figure 4.3 Scenario Analysis of Fuel Stocks under Average Demand



	Scenario One 2015	Scenario One: 2022	Scenario Two: 2015	Scenario Two: 2022	Scenario Three: 2015	Scenario Three: 2022
Average Demand/Low Wind	7.9	7.7	5.7	5.4	9.6	9.0
Average Demand/ Average Wind	8.9	8.6	6.4	6.0	10.7	10.1
Average Demand/High Wind	10.4	10.0	7.5	7.1	12.5	11.8

Figure 4.3 Scenario Analysis of Fuel Stock under Peak Demand



	Scenario One 2015	Scenario One: 2022	Scenario Two: 2015	Scenario Two: 2022	Scenario Three: 2015	Scenario Three: 2022
Peak Demand/Low Wind	7.1	6.8	5.1	4.8	8.5	8.0
Peak Demand/ Average Wind	7.8	7.5	5.7	5.3	9.4	8.9
Peak Demand/ High Wind	9.0	8.6	6.5	6.1	10.8	10.2

[29] For the purpose of this analysis, it was assumed that high wind equated to approximately 28% of total electricity demand, while average and low wind equated to approximately 15% and 5% respectively. This is based on an analysis of EirGrid's Wind Generation Data for 2014. The CER notes that wind could potentially meet up to 50% of total electricity demand; however over a sustained period it is currently unlikely that it would continue to meet 50% of total electricity demand.

Assuming no changes to CER's 2009 Decision (i.e. base case scenario), Irish electricity generators will have the ability to operate (in a scenario of peak demand/low wind) for approximately 7.1 days in 2015 in a gas supply disruption. By 2022 however, Irish electricity generators fuel stocks may potentially decrease in a peak demand and low wind (assuming no changes to the 2009 Decision).

4.3 CER Commentary

The key points from the scenario and sensitivity analysis undertaken are as follows:

- In a gas supply disruption Irish electricity generators can generate electricity for a greater number of days in 2015 relative to 2009.
- assuming no change to fuel stock obligations under the 2009 Decision, it is expected that electricity generators (at an aggregate level) will have marginally less fuel stocks in 2022 (compared to 2015) in the event of an energy supply interruption; and
- if it was determined as necessary to keep aggregate fuel stocks at current levels in 2022, the CER would have to implement higher fuel stock obligation on electricity generators in order to maintain 2015 levels of supply security provided by electricity generators. However, Irish electricity generators' estimated fuel stocks for 2022 will still be higher than 2009's estimated fuel stock levels.

The CER requests that respondees consider the scenario and sensitivity analysis undertaken within Section 4 when responding to this Consultation Paper.[30]

[30] See Section 6.0 for consultation questions

5.0 Secondary Fuel Testing Arrangements

To monitor compliance with the 2009 Decision, EirGrid undertakes annual fuel stock tests and secondary fuel switching tests on electricity generators. The CER attaches high importance to such testing arrangements, as it provides information to the CER on electricity generators' compliance with the 2009 Decision. Section 5.1 provides an overview of EirGrid's secondary fuel stock tests and their fuel switching test arrangements. Section 5.2 identifies key findings from EirGrid's 2014 secondary fuel tests, while Section 5.3 outlines issues that may warrant further consideration.

5.1 EirGrid's Fuel Stock Tests & Secondary Fuel Switching Tests

Fuel Stock Tests

Electricity generators are obliged to provide monthly reports to EirGrid on their fuel stock levels and make EirGrid aware of any material changes to their fuel stock levels. When an electricity generator has real time data regarding fuel stocks, the unit will be required to provide real time fuel stock data to EirGrid's National Control Centre. Where an electricity generator does not have online fuel stock data, fuel stock levels (MWh) are required to be submitted to EirGrid at least once per month.

EirGrid will carry out up to two physical inspections of fuel stock levels per annum, with EirGrid providing one day business notice prior to any physical inspection on fuel stocks. Additionally, EirGrid may carry out random secondary fuel stock level checks as it deems appropriate.

A passed fuel stock test is one where the real time fuel stock levels or monthly stock level reports are in accordance with the physical fuel stock inspection and where the reading confirms that there is sufficient fuel to meet the running requirements for the unit.

In the event of a non-compliance with fuel stock requirements, EirGrid will notify the generator, and issue a non-compliance notice to the generator. The CER will also be notified of any non-compliance with the required fuel stock levels. When notified of a generator non-compliance with the required fuel stock, the CER will engage with the relevant generator and to ensure, and if necessary enforce, compliance

Secondary Fuel Switching Tests

In accordance with the 2009 Decision, EirGrid can instruct a generation unit to perform up to two successful secondary fuel tests per year. For the first secondary fuel test, EirGrid is required to give prior notice of not less than 48 business hours to the electricity generator's nominated contact point. For all subsequent tests, EirGrid will issue an instruction from the National Control Centre (NCC) to switch fuel or start up on secondary fuel.

On instruction from NCC, an electricity generation unit must switch from the primary to secondary fuel in five hours or less. It should achieve this while holding electrical output at or

above the Fuel Switch over Output.[31] The electricity generation unit must operate continuously while switching from its primary to its secondary fuel on instruction from EirGrid.

The electricity generation unit when on the secondary fuel will be instructed to generate at a MW value of no less than 90% of their registered capacity on primary fuel or such other level as system conditions allow. The unit will need to maintain operation on the secondary fuel for a minimum of one hour after a successful fuel switchover.

Following a period of running on the secondary fuel, the NCC will instruct the unit to switch back to the primary fuel or desynchronise. In the case of a changeover, the unit should achieve this while maintaining the electrical output at all times above the Fuel Switch over Output.[32] After the secondary fuel test, the electricity generator is expected to make the necessary arrangements with their suppliers to replenish secondary fuel stock levels within two months.

5.2 Overview of Results from EirGrid's 2014 Secondary Fuel Tests

In 2014, 20 secondary fuel switchover tests were carried out by EirGrid on all available generation units, with 13 of these secondary fuel tests declared successful and 7 unsuccessful.

EirGrid's 2014 Annual Report to the CER on secondary fuel noted that a number of generation units declared themselves unavailable for secondary fuel tests. Specifically, at the beginning of 2014, two units were declared unavailable on secondary fuel, while at the end of 2014, six units were declared unavailable.

With reference to reporting of fuel stock data by generators, EirGrid's 2014 Annual Report to the CER confirmed that some generators have not provided regular monthly updates to EirGrid regarding fuel stock data.

5.3 CER Commentary

From a security of supply perspective, electricity generators' fuel stocks play an important role in securing Ireland's electricity supplies in the event of an energy supply interruption. Consequently, the CER is concerned that some generators are declaring themselves unavailable for secondary fuel tests, and that some electricity generators are not providing fuel stock data to EirGrid on a regular basis.

[31] Fuel Switch over Output is the MW output not lower than minimum load, at which a generation unit can achieve a switch over from primary fuel to secondary fuel or vice versa.

[32] It is anticipated that under normal circumstances the secondary fuel test should be completed within a few hours. However, under exceptional circumstances, the unit may be required to operate on secondary fuel for a longer period of time if there are concerns for system security. EirGrid will consider the system conditions at all times when scheduling secondary fuel tests.

Non-compliance with EirGrid's fuel testing arrangements may undermine Ireland's response arrangements in the event of energy supply interruption. Furthermore, non-compliance with fuel stock obligations is a breach of CER licence conditions. The CER will take whatever regulatory actions are appropriate to ensure and enforce compliance. Notwithstanding this, the CER is interested in views on proposed amendments to fuel test arrangements to improve their overall effectiveness.

As per the 2009 Decision, generators have two options with regard to the storing of fuel stocks i.e. generators may store all of the required fuel stock or store one day of fuel onsite with the remainder being stored by a third party. The CER is inviting respondees to consider potential alternative options as to how the obligation could be met and outline any proposals they may have.

The 2009 Decision placed no requirement on non-gas fired electricity generators to be capable of running on secondary fuel. The CER is inviting responses to consider whether the existing requirements for these generators is adequate.[33]

[33] See Section 6.0 for consultation questions

6.0 Conclusion & Next Steps

Security of energy supply is critical to the functioning of the Irish economy and society. Ensuring supply security requires a range of actions, including inter alia investment in robust energy networks, interconnectors and import infrastructure, secure and diverse fuel sources, sufficient generation capacity, commercial and strategic storage, back-up and resilience in generation and networks.

The CER plays a key role in securing Ireland's energy supplies by determining electricity and gas network investment plans, developing competitive markets that enhance supply security and in overseeing contingency planning. In order to promote and protect secure electricity supplies, the CER has imposed fuel stock obligations on electricity generators, as specified in the 2009 Decision. Furthermore, the CER committed to keeping the 2009 Decision under "continuous review". Given the significant developments within Ireland's electricity and gas sectors (as outlined in this Consultation Paper), it is appropriate to consider whether changes to the existing fuel stock obligations on electricity generators are merited.

Therefore, this Consultation Paper seeks responses to the following questions:

Q1. Should the CER amend/change its 2009 Decision regarding fuel stock obligations? If yes, detail what changes should take place? For example:

- Do respondents have any alternative proposals as to how the obligation could be met?

- Are the existing fuel stock requirements for non-gas fired plants adequate?

Q2. What impacts are likely if additional fuel stocks are required?

Q3. What impacts would a reduction in fuel stock obligations have on Ireland's security of supply?

Q4. Should arrangements for monitoring and replenishing fuel stock be amended?

Q5. Should amendments be made to the current fuel switching test arrangements?

Q6. What actions (if any) should be taken against electricity generators who declare themselves unavailable for fuel switching exercises?

Q7. What changes to the current compliance and enforcement regime are necessary to ensure generator compliance with fuel stock obligations?

The CER invites responses to questions raised within Section 6 of this Consultation Paper. The deadline for submitting responses to the CER is Wednesday, the 7th of October 2015.

Following a review of responses received, the CER intends issuing a follow up paper to this consultation by the end of 2015.

In the interim, any queries should be forwarded to Seamus Byrne (sbyrne@cer.ie).