



Department
of Energy &
Climate Change

UK Preventative Action Plan and National Emergency Plan

Explanatory Memorandum for European
Commission

July 2015

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Introduction

1. The UK submitted its *Preventative Action Plan (PAP)* and *National Emergency Plan (NEP)* for gas to the European Commission ('the Commission') in December 2015 as per the requirements of Regulation 994/2010. Subsequently, in March 2015, the Commission published an opinion on the UK's *PAP* and *NEP* requesting further clarity on specific aspects of these documents.
2. DECC welcomes the Commission's comments. Although we believe that the Commission has raised some important points of clarification, we do not think that the additional information requested fundamentally alters the conclusions and processes set down in these documents.
3. Answers to the Commission's questions relevant to both documents can be found below. We are also reissuing the *PAP* to further clarify some points in paragraphs 5.9-5.10 and Appendix IV. We do not consider that the *NEP* needs reissuing.

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1. The UK's definition of 'protected customers' is compliant with the definition in Regulation 994/2010:
 - Household customers;
 - Small and medium sized enterprises connected to a gas distribution network; and
 - Essential social services where loss of gas supplies could endanger health (as long as these customers and small and medium sized enterprises do not exceed 20% of final use of gas)
2. The volumes needed to fulfil this standard and UK infrastructure capacities are outlined in Table 1 below. As the Regulation does not include guidance on how Member States should demonstrate that they meet the supply standard, we have indicated estimated volumes for the conditions set down in Article 8 for winter 2013/14. These are estimates derived from National Grid – the GB Transmission System Operator (TSO) – using their model for assessing demand.
3. This table shows that the volume of Small and Medium Enterprises (SMEs) and essential social services does not exceed the Regulation's limit of 20% of final demand. It also shows that the UK's infrastructure is capable of meeting the supply standard even with 1-in-20 demand conditions and the loss of our single largest piece of infrastructure. In order to demonstrate that we meet the periods set down in the Regulation, we have estimated the peak demand at the end of the Regulation's time periods. As we are able to meet demand on this day, it is shown that supply to protected customers could be met each day before it during the period in question.

Table 1 – UK gas demand and infrastructure capacity (Gone Green scenario)

| | Day 7 under 1-in-20 conditions | Day 30 under 1-in-20 conditions | Day 30 average winter conditions |
|--|--------------------------------|---------------------------------|----------------------------------|
| Households (mcm/d) | 247 | 207 | 166 |
| SMEs (mcm/d) | 64 | 57 | 48 |
| Essential social services (mcm/d) | 1 | 1 | 1 |
| Total demand, including other categories (mcm/d) | 417 | 364 | 312 |
| Percentage SME and social services | 15.6 | 15.9 | 15.7 |
| UK infrastructure capacity 1 October 2014 (mcm/d) | 703 | 703 | 703 |
| UK N-1 infrastructure capacity 1 October 2014 (mcm/d) | 617 | 617 | 617 |

4. It should be noted that the UK's Transmission System Operator (National Grid) uses similar terminology – 'priority customers' – to describe the disconnection order of large loads. This does not confer legal status beyond the provisions of Regulation 994/2010 but rather controls the order of disconnection of large customers in an extreme scenario in order to maintain supplies to those customer groups falling under the definition of 'protected customers' in Regulation 994/2010.
5. In DECC's Risk Assessment we provided analysis of supply and demand profiles of average and severe (1-in-50) demand conditions in a peak day and over a week, month, and entire winter. This analysis shows that the UK's market-based approach to meeting the supply standard meets and exceeds the Regulation's supply standard requirement. However, the choice of 1-in-50 conditions is merely for illustrative purposes and is not the same thing as imposing a stricter standard than the Regulation allows.
6. The UK ensures suppliers meet their customer demand, and therefore the supply standard, by placing commercial incentives, known as 'cash-out', on shippers to remain in balance, regardless of the demand conditions or duration. These incentives are designed to recoup the cost incurred by the System Operator in taking balancing actions and are cash neutral; the System Operator returns any profits to the shipping community as a whole. This is in line with the Regulation's objectives in Article 8(2) as it is a market-based measure which does not distort competition nor hamper the internal market in gas.
7. In particular, we believe that cash-out has a positive impact on the security of supply of neighbouring Member States. Cash-out is designed to prevent supply deficit within Great Britain which, if it occurred, is likely to impact negatively on the flows of gas to the island of Ireland and Belgium. Furthermore, cash-out allows prices to rise to attract new sources of gas in a period of supply tightness and this is fundamentally important in attracting LNG to Europe in a global market. Due to our connections with Ireland and Belgium, we can pass this LNG through to wider EU markets.
8. In addition to the incentives on shippers to meet customer demand, Government places legal obligations on the Transmission and Distribution Operators to ensure that they build and maintain a gas grid capable of supplying consumers during demand conditions with a likelihood of 1-in-20 years.¹
9. Our Risk Assessment referred to the 'Safety Monitor' provisions used by National Grid. The Safety Monitor is a health and safety standard and signals the amount of gas required in the National Transmission System to maintain sufficient network pressures to allow continued supply of gas to the UK's protected customers. It is not a security of supply standard.
10. At the emergency stage of a Network Gas Supply Emergency, the Safety Monitor acts as one possible trigger for National Grid to take non-market based measures (e.g. load shedding of users who are not 'protected customers'). If National Grid does not take non-market based measures then the safety and integrity of the transmission system could be threatened.
11. The Safety Monitor volume is calculated on the basis of demand to protected customers during 1-in-50 demand conditions. It equates to around 4% of UK gas storage volumes (c.180mcm) and is therefore a small volume of gas which does not impact on market operation.
12. It is in the interests of other Member States for the UK to continue using the Safety Monitor system; without the gas volumes prescribed by the Safety Monitor the UK gas grid could fail

¹ Standard Special License Condition A9: Pipe-line System Security Standards

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and supplies could no longer be maintained to UK protected customers or exports to Ireland, Belgium, and further afield.

National Emergency Plan

1. DECC welcomes the views of the Commission regarding the National Emergency Plan for Downstream Gas and Electricity and its compliance with EU Regulation 994/2010. However, we believe for the reasons set out below that the plan fully meets the requirements of the Regulation 994. It represents regularly tested and robust procedures that are well understood and work together with more specific documents to ensure the gas network continues to operate safely and is reviewed annually in consultation with UK stakeholders. Nevertheless we note that some minor clarifications may be useful for those readers less familiar with the robust UK arrangements and we shall consider these in the next full review of the plan in December 2016.
2. The UK National Emergency Plan (NEP) is a high level document detailing overall roles, response actions and how control and coordination is achieved in an emergency. It sits alongside the industry document: *T/PM/E/1 Procedure for a Network Gas Supply Emergency (E/1)*. This shows in more detail the actions that can be taken at each stage of an emergency. The NEP summarises the actions and how they are related to the EU Crisis levels described in *EU Regulation 994/2010*. The NEP does not necessarily contain detailed procedural aspects as this detail is included in the E/1 procedure, this is aligned with the Network Emergency Coordinator (NEC) Safety Case and provides further information on these emergency stages. This procedure is referenced within the NEP.
3. The stages of a Network Gas Supply Emergency (NGSE) are outlined in the NEP in the following diagram (from page 23 of the NEP), showing the pre-defined list of actions which vary according to the extent of the emergency, amongst other factors. This represents the exhaustive list of all actions that may be taken by the NEC during an NGSE. The NEP also directs the reader to the E/1 procedure for more detail on the content of these actions.

| Network Gas Supply Emergency Classification | | | | |
|---|-----------------------------------|---|---|---|
| EU Regulation Crisis Levels ² | NGSE Emergency Stage ³ | Gas Deficit: Insufficient Gas Supplies Available to the National Grid Gas Transmission system | | Critical Transportation Constraint in the NGGT |
| | | Gas Deficit Emergency | Gas Safety Management Regulation (GSMR) Monitor Breach | |
| Early Warning | | NGSE not declared | | |
| Alert | 1 (Potential) | <ul style="list-style-type: none"> - Emergency Spec Gas - NGGT Linepack - Distribution Network Utilisation: - Distribution Network Storage & Emergency Interruption - Public Appeals | <ul style="list-style-type: none"> - Instruct shippers & storage operators to amend storage flows - Public Appeals | <ul style="list-style-type: none"> - Emergency Spec Gas - NGGT Linepack - Distribution Network - Utilisation: Distribution Network Storage & - Emergency Interruption - Public Appeals |
| Emergency | 2 | <ul style="list-style-type: none"> - National Grid Gas plc's participation in the On The Day Commodity Market (OCM) will be suspended - Maximise supplies - Firm Load Shedding | <ul style="list-style-type: none"> - National Grid Gas plc's participation in the OCM will be suspended - Maximise Supplies - Firm Load Shedding | <ul style="list-style-type: none"> - Maximise Storage - Firm Load Shedding |
| | 3 | Allocation & Isolation | | |
| | 4 | Restoration | | |

4. As required by the Regulation, this table specifies the list of pre-defined actions which vary as the extent of the emergency requires. The dynamic nature of the gas network and supply is such that the utilisation of each action will depend on the event. However, the agreed process demonstrates the order in which these actions should be considered. For further clarity a short commentary has been lifted from E/1 and included below, further detail can be obtained in E/1.

² DECC declares these stages and notifies the European Commission & industry.

³ The NEC declares these stages and notifies DECC & industry.

| Action | Definition |
|--|---|
| Emergency Spec Gas | A transporter must not convey gas in the network unless it complies with the requirements specified in GS(M)R Part I of Schedule 3, Regulation 8(1). However, the NEC may where it is necessary to prevent or delay the occurrence of a NGSE authorise gas not conforming with Part I of Schedule 3 to be conveyed in the network if the gas conforms with the requirements of GS(M)R Part II of Schedule 3, Regulation 8(2). |
| NGGT Linepack & Distribution Network Utilisation: Distribution Network Storage & Emergency Interruption | During stage 1 all usable primary system linepack will be utilised by the primary transporter. During the process of collecting data all secondary transporters will indicate to the primary transporter how much storage they have available. At stage 1 the primary transporter may ask the secondary transporters to release this storage by reducing the amount of gas they take from the primary system. |
| Instruct shippers & storage operators to amend storage flows | In the event that there is likelihood that the safety monitor will or has been breached the NEC will seek co-operation from shippers and storage operators to curtail delivery of storage gas to the primary system. Shippers and storage operators should amend their flows in accordance with the primary transporter's request and undertake demand reduction measures or increase supplies to the Network to maintain a supply-demand balance. |
| Public Appeals | Public appeal targets domestic and smaller industrial/commercial consumers (<25,000 tpa). The method for communicating the public appeal messages could include public appeal broadcasts over the radio or television or loud hailer vans touring the streets. Posters and leaflets drops should also be used. |
| Maximise supplies | If it has been identified that there are additional beach gas supplies available then the primary transporter will request that shippers should source as much gas as they can and arrange for delivery to the relevant entry facilities. If it has been identified that there is additional primary system storage gas available over and above that already being delivered or being made available for use the NEC will request the primary transporter to make arrangements for the delivery of this storage gas. |
| National Grid Gas plc's participation in the On The Day Commodity Market (OCM) will be suspended | The primary transporter will contact the operator of the OCM to inform of the suspension of National Grid's role as residual system balancer with immediate effect. Shippers will continue to be able to trade. |
| Firm load shedding | <p>Used by transporters to secure a graduated and controlled reduction in firm demand on all or part of their systems in order to keep the system securely pressurised.</p> <p>The primary transporter will identify in the emergency strategy the volume and location of the firm load shedding required.</p> |

| | |
|---------------------------|---|
| <p>Allocation</p> | <p>If insufficient gas is available to supply the network or parts of the network as applicable, even with firm load shedding, the NEC allocates the available gas to secondary systems and must instruct the primary transporter to physically restrict the offtake of gas by secondary systems to the allocated amount.</p> |
| <p>Isolation</p> | <p>If the NEC is unable to increase the allocation of gas to one or more secondary systems it must in consultation with the primary and secondary transporters and DECC review the allocation of gas in order to match network supply and demand by selected system isolation.</p> |
| <p>Restoration</p> | <p>If the supply-demand balance is improving, the primary transporter will develop a strategy to progressively revoke the measures taken during the various stages of the emergency.</p> |

5. The actions identified by the NEP and described in detail in the E/1 procedure represent robust, time served measures. These are regularly tested through the NEC’s annual emergency exercise and are understood by all gas industry participants. The content of the NEC safety case and subsequent emergency actions is underpinned by health and safety regulations which ensure the safe operation of the network.
6. With regard to the specific comment *“it seems to be possible to revert to non-market based measures already during the so-called alert level”* we confirm that this is not the case because the market is still in operation. In the specific event that there is likelihood that the safety monitor will be breached the NEC can instruct shippers and storage operators to curtail delivery of storage gas to the primary system. In response, shippers and storage operators should amend their flows in accordance with the primary transporter’s (National Grid) request and can undertake demand reduction measures or increase supplies to the Network to maintain a supply-demand balance.
7. We confirm that the actions taken at this stage refer to contractual arrangements to ensure security of gas supply, which EU Regulation 994/10 considers market based measures. If, however, additional demand reduction is required of firm consumers designated protected by isolation, the NEC will declare a stage 2 NGSE (equivalent to the emergency stage in the Regulation. The system operators participation in the “On The Day” Commodity Market (OCM) will be not be suspended until a stage 2 NGSE is declared.
8. The table below from the E/1 procedure (page 19) details each stage of an NGSE and the market arrangements in each.

| Stage | Critical Transportation Constraint | Gas Deficit Emergency | Safety Monitor Breach |
|------------------|--|---|---|
| Normal Operation | Normal commercial arrangements in place. | | |
| 1 | Normal commercial arrangements in place. | | |
| 2 3 4 | Uniform Network Code section Q provisions apply but only for additional storage gas. Normal commercial regime continued. | Uniform Network Code section Q provisions apply. National Grid will suspend its participation in the commercial market regime. | Uniform Network Code section Q provisions apply. National Grid will suspend its participation in the commercial market regime. |
| Normal Operation | Normal commercial arrangements in place for storage gas 06:00 hours on gas day following the declaration of the end of the NGSE. | Normal commercial arrangements in place 06:00 hours on gas day following the declaration of the end of the NGSE. | Normal commercial arrangements in place 06:00 hours on gas day following the declaration of the end of the NGSE. |

9. DECC considers the NEC E/1 procedure as the appropriate document to provide further detail on the measures the NEC can take to manage an NGSE, this document is publically available and referenced in the UK Emergency Plan.⁴ Further to this, the NEC will seek co-operation from shippers and storage operators during a stage 1 NGSE and will use market based mechanisms to ensure this cooperation. DECC believes that this conforms with the “alert” crisis level as discussed in Reg 994/2010 and do not feel that the NEC should amend this stage.
10. The NEC actions during an NGSE are the main operational tools to ensure the safety and integrity of the network, DECC performs a strategic role by assessing the situation and providing coordinated policy advice and other support as necessary to local responders, providing the interface between industry and central government. The Government may also have a role to play in the use of emergency powers that are available to the Secretary of State. This role is described in more detail in the body of the NEP but can include: involvement in the coordination and dissemination of any public appeals, working with upstream stakeholders to ensure maximum supply from the UK Continental Shelf, liaising with the EU, Gas Co-ordination Group and/or other Members States on the implication of the disruption and requests for possible support.

⁴ <http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=5187>

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