### **EMERGENCY PLAN**

in accordance with Article 10 of Regulation (EU) 2017/1938 of the European Parliament and of the Council concerning measures to safeguard the security of gas supply and repealing Regulation 994/2010

#### **CONTENTS**

General	Information	4
1.	Purpose	4
2.	Scope	
3.	Definitions	
4.	Natural Gas Supply Standard	
5.	Crisis Management Tools	
	-	
CHAPT	Alert Status – Declaration Procedures Alert Status 1 Alert Status 2 Alert Status 3	10
1.1.	Alert Status – Declaration Procedures	10
1.1.1.	Alert Status 1	10
1.1.2.	Alert Status 2	10
1.1.3.	Alert Status 3	11
1.2.	Activation of Alert Status	12
	ER 2: National Measures to be taken per crisis Level	
CHAPT		
2.1	Measures at Early Warning Level (Alert Status 1)	14
2.2	Measures at Alert Level (Alert Status 2)	15
2.3	Measures for Emergency Level (Alert Status 3)	15
2.4	Information Flow	16
CTT / DET		
	ER 3: Specific measures for electricity and district heating	
3.1	District Heating	
3.2	Electricity Supply powered by Natural Gas	16
СНАРТ	ER 4: Crisis manager or team	18
	isis Management Unit Head	
	isis Management Group	
	mergency Measures Coordination Committee	
4.3 E	mergency Measures Coordination Committee	19
CHAPT	ER 5: Roles and responsibilities of the different actors	20
5.1	Early Warning Level (Alert Status 1)	
5.2	Alert Level (Alert Status 2)	
-	Emergency Level (Alert Status 3)	
0.0	Emergency Lever (Mort Status 3)	23
CHAPT	ER 6: Measures regarding undue consumption of non-Protected Customers.	25
	ER 7: Emergency Tests	
7.1	Development of scenarios	26
7.2	Tests	
7.3	Plan Revisions	27
CII A DEL		25
CHAPT	ER 8: Regional Dimension	27
ANNEX	1: PRIORITY LIST FOR INTERRUPTION OF NATURAL GAS SUPPLY	, IN
	ERGENCY	
		_
	2: SUPPLY INTERRUPTION/LIMITATION PROCEDURE TO	
INTERR	UPTIBLE CONSUMERS IN CASE OF EMERGENCY	30

NNEX 3: PROCEDURE OF NATURAL GAS SUPPLY NTERRUPTION/LIMITATION TO GAS-FIRED POWER PLANTS IN CASE OF MERGENCY31
NNEX 4: PROCEDURE OF NATURAL GAS SUPPLY NTERRUPTION/LIMITATION TO OTHER CUSTOMERS IN CASE OF MERGENCY
NNEX 5: IMPLEMENTATION PROCEDURES OF THE INTERRUPTIBILITY IEASURE
NNEX 6: PROCEDURE FOR IMPLEMENTING ACTION 'D6' OF THE REVENTIVE ACTION PLAN – 'INTRODUCTION OF ADDITIONAL RULES IN HE ELECTRIC MARKET FOR CONNECTION WITH THE AVAILABILITY OF UEL OF 5 ALTERNATE FUEL UNITS'
OEL OF S ALTERNATE FOLL ONTS

#### **General Information**

#### 1. Purpose

a. This Emergency Plan (hereinafter the 'Plan') was drafted in accordance with Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No. 994/2010 (hereinafter the 'Regulation') and in particular Articles 8 and 10 thereof, and in accordance with the provisions of Articles 12 and 73 of Law 4001/2011 and Chapter 10 of the NNGS Network Code, as in force. The Regulatory Authority of Energy (RAE), which is appointed as the Competent Authority according to paragraph 3 of Article 12 of Law 4001/2011, establishes this Plan with its abovementioned decision number 567/2019, following the NNGS Operator's proposal, in accordance with paragraph 1 of article 73 of law 4001/1011, as stated analytically in its abovementioned decision.

#### b. The Plan aims, in particular, at:

- i. Determining the responsibilities, obligations and actions of the Competent Authority, the Natural Gas and Electricity System Operators, the Natural Gas and Electricity Distribution System Operators, the Natural Gas Suppliers, the Major Customers of Natural Gas, producers of electricity included, and the bodies that may be formed according to the Plan, in order to effectively address the supply disruption or the exceptionally high gas demand, which has resulted in a significant deterioration of supply in the greek market of Natural Gas, in accordance with paragraph 1 of Article 10 of the Regulation;
- ii. Establishing procedures and measures to be followed for each crisis level as determined in accordance with paragraph 1 of Article 11 of the Regulation; and
- Establishing the information obligations imposed on Natural Gas Undertakings.

The Plan was sent to the Competent Authorities of Bulgaria and Romania for consultation during its configuration, and they submitted no comments. Furthermore, during the abovementioned phase, the Plan was made available for public consultation in accordance with the provisions of article 29 of Law 4001/2011.

#### 2. Scope

The Plan will be implemented upon occurrence of Crisis situations which affect or might affect the smooth operation of the Natural Gas greek market and/or security of supply, in accordance with the Regulation.

Crisis can be caused either by extrinsic or intrinsic risks. Such situations include, but are not limited to, the following:

- Technical problems in the infrastructure of NNGS;
- Technical problems in the infrastructure of upstream and downstream Natural Gas Interconnected Systems;
- Sabotage, vandalism, thefts, at the NNGS facilities;
- Reduced or interrupted gas supply from third parties (especially Natural Gas Suppliers, Users, Operators of upstream Natural Gas Systems, Independent Natural Gas System Operators (INGSO));
- Unexpected Natural Gas high demand related to commercial or financial parameters;
- Long-term restrictions to Natural Gas supply; and
- Civil disorder, war, terrorism, natural disasters.

#### 3. Definitions

The terms stated in this Plan have the meaning attributed by the Regulation, the Law 4001/2011 and the NNGS Network Code, as in force. The following terms have the following meaning:

- Interruptible Consumers: Major Customers, excluding those that consume Natural Gas for power production, which have been listed in the NNGS Operator's Interruptible Consumers Registry following their relevant written statement request, and they at least bind (a) to interrupt the Natural Gas demand more than forty per cent (40%) of their daily demand, anytime and within six (6) hours after the relevant request by the NNGS Operator or the Distribution System Operators as appropriate, during an Alert Level (Alert Status 2) and (b) to maintain a reduced level of demand for as long as the crisis lasts and up to a maximum of thirty (30) days per year.
- Intermittent Consumers: Major Customers, which have concluded with their Supplier a contract, in return for payment, for the Natural Gas demand management

in crisis situations in the NNGS, according to the provisions of Article 73 of Law 4001/2011, as in force.

- Involved Parties (the "Parties"): The supervisory Authorities, the Natural Gas and Power Transmission System Operators (i.e. DESFA S.A. and IPTO S.A. respectively), the Natural Gas Interconnected System Operators, the Natural Gas and Power Distribution System Operators, the Hellenic Energy Exchange ("HEnEx"), the energy market companies involved accordingly in the procedure of managing the Emergencies and the Crises, such as Natural Gas Suppliers, the NNGS Users and the Major Customers.
- Confirmed LNG Reserve for Balancing Services purposes: the sum of LNG Reserve for Balancing Services purposes inside the tanks of the LNG Facility at the end of a Day D, plus the NNGS Operator's supply of LNG Quantity for Balancing Services purposes within Days D+1, D+2 and D+3, under Balancing Services Contracts concluded by the Operator in accordance with the provisions of Article 47 of the NNGS Network Code.
- Confirmed LNG Users Reserve: the sum of the Daily LNG Reserve of the LNG Users at the end of a Day D, as calculated by the Operator, plus the LNG Load Quantity of LNG User(s) for which the Operator has received a Notice of Arrival, as provided for in paragraph 4 of Article 67 of the NNGS Network Code. (It is clarified that the Confirmed LNG Users Reserve does not include the total Power Generators LNG Security Reserve, according to the Preventive Action Plan).
- Annual Quantity of Natural Gas Consumption: The Natural Gas quantity that refers to a Natural Gas Consumer and is calculated:
  - 1. From the fuel consumption during the last twelve-month period that immediately proceeds the month that Alert Status 3 was declared.
  - ii. In case the installation of a Natural Gas Consumer has been in operation for less than one Year since the declaration of Alert Status 3, based on consumption historical data and the annualized consumed quantity, on a twelve-month basis, according to the above mentioned item (i).
  - iii. In case of an increase of the installed capacity of an existing installation which, during the last Year, did not fully operate in its full increased power, based on consumption historical data during the period of

operation using its new power and the annualized consumed quantity, on a twelve-month basis, according to the above mentioned item (i).

- Daily Gas Imbalance of the NNGTS: The difference between physical Daily Natural
  Gas Off-Takes from the NNGTS, from the physical Daily Natural Gas Deliveries
  to the NNGTS. Daily Natural Gas Deliveries in the NNGTS do not include the
  Natural Gas Quantities that were injected to the NNGTS for Balancing purposes via
  Balancing Services and for offsetting the NNGTS Operational Gas.
- Crisis: any event which leads or may lead to an Early Warning Level (Alert Status 1), an Alert Level (Alert Status 2), or an Emergency Level (Alert Status 3) as defined in Article 11 of the Regulation.
- Protected Customers, as defined by the current legislation and today according to Article 2 of Law 4001/2011 and Ministerial Decision Δ1/B/10233/2014 (Greek Government Gazette B'1684/24.06.2014), as applicable:
  - 1. Domestic Customers connected to a Natural Gas distribution network;
  - 2. The following entities that provide essential social services, provided that they are connected to a Natural Gas distribution network:
    - A. Hospitals, units of primary, secondary and tertiary health care;
    - B. School groups, crèches, nursery schools, schools of all grades;
    - C. Airports;
    - D. Fuel filling stations for public transport and waste disposal vehicles; and
    - E. Buildings which house public sector's authorities, as defined in Paragraph 1 of Article 14 of Law 2190/1994 (A'28);
  - 3. All commercial and industrial consumers, as defined by the Natural Gas Suppliers, which are small and medium enterprises, as defined in accordance with the European Commission recommendation of May 6, 2003 (2003/361/EC) and with annual contracted consumption less than 10,000 MWh; and
  - 4. The district heating installations, to the extent that they provide heating to domestic customers and customers referred to in the points (1) and (2) above, provided that these installations do not have the capability of switching fuels and are connected either to a Natural Gas distribution network or to the Natural Gas Transmission Network.

#### 4. Natural Gas Supply Standard

Article 6 of the Regulation establishes the Standard for Natural Gas supply of the energy markets in the Member States of the European Union.

In the context of the above Standard, the measures taken during periods of Crisis, as defined in the Regulation, aim at ensuring Natural Gas supply to Protected Customers in the following cases:

- i. extreme temperatures during a seven (7) day peak period occurring with a statistical probability of once in twenty (20) years;
- ii. any period of at least thirty (30) days of exceptionally high demand of Natural Gas, occurring with a statistical probability of once in twenty (20) years; and
- iii. for a period of at least thirty (30) days in the case of disruption of the single largest Natural Gas infrastructure under average winter conditions.

Additional cases, besides the above mentioned, may be examined and taken into account in the National Risk Assessment.

#### 5. Crisis Management Tools

The following bodies are defined as competent for the declaration and management of the three levels of Crises of Article 11 of the Regulation, according to the Plan:

- A. Crisis Management Unit (hereinafter "CMU")
- B. Crisis Management Group (hereinafter "CMG")
- C. Emergency Measures Coordination Committee (hereinafter "EMCC").

#### A. The CMU comprises the following:

- 1. The Operations Division Director of the NNGS Operator as the CMU Head;
- 2. The following NNGS Operator officers or their replacements to be designated by the CMU Head:
  - Gas Flow Management Department Manager
  - Commercial Division Director
  - Regulated Services Trading Department Manager
  - NNGTS Operation and Maintenance Department Manager
  - Liquefied Natural Gas Department Manager

• Quality & Safety Department Manager

#### B. The CMG comprises the following:

- 1. A person appointed by a decision of the Competent Authority (Regulatory Authority for Energy) Plenary, as the Head of CMG
- 2. Representative of the Ministry of Environment and Energy
- 3. The Head of CMU
- 4. Representative of the NNGS Operator, if different from the Head of CMU
- 5. Representative of the Hellenic Electricity Transmission System (HETS) Operator
- 6. Representative of each Distribution System Operator
- 7. Representatives of the rest Involved Parties, depending on the event that led to a Crisis, after invitation of the Head of the CMG and at his absolute discretion.

#### C. The EMCC comprises the following:

The Emergency Measures Coordination Committee (EMCC) comprises the following:

- 1. The Crisis Management Group (CMG)
- 2. The General Secretariat of Civil Protection (hereinafter "GSCP")

Furthermore, Regulation (EU) 2017/1938 provides for the formation of a Gas Coordination Group (GCG), which according to Article 4 of the above-mentioned Regulation is composed of representatives of the Member States, in particular representatives of their competent authorities, as well as the Agency for the Cooperation of Energy Regulators, ENTSOG and representative bodies of the industry concerned and those of relevant customers. The GCG assists the European Commission regarding security of gas supply at national, regional and Union level, according to the particular specifications of the abovementioned Article.

#### **CHAPTER 1: Determination of Crisis Level**

#### 1.1. Alert Status – Declaration Procedures

The Head of CMU is responsible for declaring all levels of Alert Status.

#### 1.1.1. Alert Status 1

It is declared when there is concrete, serious and reliable information that an incident may occur which is likely to result in significant deterioration of the country's supply with Natural Gas, which is likely to lead to the activation of Alert Status 2 or Alert Status 3.

The CMU Head assesses whether the information gathered is reliable and serious. The CMU Head shall decide to declare Alert Status 1 by informing all Involved Parties, as appropriate, regarding the declaration of Alert Status 1 and the reasons for it.

The CMU continuously collects information about the event, monitors the balance of supply – demand, ensures a steady flow of information on the evolution of the situation, which it monitors and re-evaluates the Crisis Level. The CMU Head is responsible to inform RAE on a daily basis and by all appropriate means.

#### 1.1.2. Alert Status 2

It is declared in case of supply disruption or extremely high demand for Natural Gas, resulting in a significant deterioration of supply, during which the market is still able to deal with that disruption or demand without having to take measures that do not rely on the market.

- i. The CMU Head evaluates the relevant information / indication that receives from the appropriate Involved Parties and the CMU Members and, if required, declares Alert Status 2 by informing the CMG Head and the Involved Parties, as appropriate.
- ii. After the Declaration of Alert Status 2, the CMG Head if he considers it necessary convenes the CMG as soon as possible by identifying, where appropriate, the Involved Parties joining the mentioned CMG meeting.
- iii. The CMG meets at RAE offices. The CMG assesses both the data presented by the CMU Head and the related supply and demand scenarios and the data presented by the Involved Parties specified in paragraph (ii) above. The effectiveness of market-based measures implemented according to the Preventive Action Plan is assessed and CMG, by its decision, determines that the conditions for declaring Alert Status 3 are met. Based on this decision, the CMU Head declares Alert Status 3.

iv. During the CMG meeting, minutes are kept by RAE, which are certified at the end of the meeting by the participants. The minutes include the list of market-based measures that were taken or will be taken, according to the Preventive Action Plan and their efficiency in the smooth supply of the Natural Gas market.

#### 1.1.3. Alert Status 3

It is declared in case of extremely high demand for Natural Gas, significant supply disruption and if market-based measures are not sufficient to cover the remaining demand for Natural Gas, resulting in the need for additional non-market-based measures. The situation is unfavorable and it is possible to disrupt the smooth supply of Protected Consumers in the absence of non-market-based measures.

- i. After evaluating the relevant information / indications received by the appropriate Involved Parties and the CMU members, and taking into account the CMG decision as in paragraph 1.1.2 above, the CMU Head immediately informs the CMG Head and the appropriate Involved Parties about the situation, its possible evolution and any measures taken by the NNGS Operator, within the scope of its competencies, as defined in the NNGS Network Code.
- ii. The CMG Head immediately calls the CMG meeting at RAE offices, specifying, as appropriate, the Involved Parties to participate in the relevant meeting.
- iii. The CMG assesses the evidence presented by the CMU Head and the Involved Parties and, taking all the above into account, decides on the measures. During the CMG meeting minutes are held by RAE, which are certified in the end of the meeting by the participants and are distributed to all Involved Parties specified in paragraph (ii) above, including a list of measures to address the consequences of the Alert Status 3 to the smooth supply of the Natural Gas market.
- information flow regarding the evolution, monitors the effectiveness of the implemented measures as defined in this Plan and in the CMG minutes, to address or mitigate the consequences of the event and the CMU Head continuously informs the CMG Head and the Involved Parties specified in paragraph (ii) above regarding the reassessment of the Alert Status. In the event where reassessment of the situation is required by the CMG, the CMG Head calls the CMG meeting.

#### 1.2. Activation of Alert Status

Indicatively and not limited to, the CMU Head activates the appropriate Alert Status upon occurrence of any of the following incidents, when this affects or could affect the smooth and secure supply of the country with Natural Gas, providing the CMG Head with relevant documentation and following the Alert Status Declaration Procedures, as defined in paragraph 1.1 of this Plan.

#### A. Daily Load Balancing Loss in the NNGTS, less than zero.

- i. In order to declare Alert Status 1 or 2, the CMU Head takes into account the Operator's estimation of the Linepack in the NNGTS pipeline at the end of Day (D) and the Operator's estimation of the LNG Reserves for providing Balancing Services.
- ii. In the event that the Operator's estimation of the Linepack in the NNGTS pipeline reaches its minimum operating limit at the end of Day (D) and the Operator's estimation of the LNG Reserves for providing Balancing Services is not sufficient to cover the negative Daily Load Balancing Loss at the NNGTS, following the relevant decision of the CMG as set in this Plan, the CMU Head declares Alarm Status 3.

#### B. Confirmed LNG Users Reserve less than or equal to four times the Average Daily LNG Ouantity regasified and injected to the NNGTS during the four (4) previous Days.

- i. In order to declare Alert Status 1 or 2, the CMU Head takes into account the estimated by the Operator Daily Gas Imbalance of the NNGTS at the end of Day (D).
  - ii. In the event that the estimated by the Operator Daily Gas Imbalance of the NNGTS is negative at the end of Day (D) and the Natural Gas demand cannot be satisfied without non-market-based measures, following the relevant CMG decision under the definitions of this Plan, the CMU Head declares Alert Status 3.

C. Total Natural Gas Delivery Quantities less than or equal to 80% of the Confirmed Natural Gas Quantities of the Transmission Users in the NNGTS Entry Points and Delivery Pressure lower than the Minimum Input Pressure in, at least one of the above mentioned NNGTS Entry Points for a period longer than or equal to two (2) consecutive Days.

i. In order to declare Alert Status 1 or 2, the CMU Head takes into account the estimated by the Operator Linepack in the NNGTS pipeline at the end of Day (D).

ii. In the event that the amount of the estimated by the Operator Linepack in the NNGTS pipeline approaches its minimum operational limit at the end of Day (D) and the Natural Gas demand cannot be met without non-market-based measures, following the relevant CMG decision under the provisions of this Plan, the CMU Head declares Alert Status 3.

#### D. NNGS Technical issue

In case an event occurs due to a NNGS technical issue, DESFA personnel shall first make every effort to ensure that, with the appropriate operational handling, they will reduce / eliminate the consequences of the event according to the provisions of the NNGS Network Code and the NNGTS or/and LNG Emergency Plan.

- i. In case the demand can be met without non-market-based measures, the CMU Head decides and declares Alert Status 2.
- ii. In case the demand cannot be met without non-market-based measures, following the relevant CMG decision under the provisions of this Plan, the CMU Head declares Alert Status 3.

#### E. Emergency on a Distribution Network.

In case an event occurs due to extraordinary circumstances of a Natural Gas Distribution System, the Distribution System Operator's personnel shall first make every effort to ensure that, with the appropriate operational handling, they will reduce / eliminate the consequences of the event. The Distribution System Operator immediately takes every appropriate measure as provided in its Distribution System Emergency Plan under its responsibility and informs the CMU Head by all appropriate means, regarding the proposed measures to be taken in the NNGS to address the emergency.

- i. The CMU Head evaluates with the CMU members the measures indicated by the Distribution System Operator and to what extent they affect the safe and reliable NNGS operation. In case the demand can be met without non-market-based measures, the CMU Head decides and declares Alert Status 2.
- ii. In case the CMU Head evaluates the need of measures to be taken in the NNGS in order to deal with an emergency level situation that is manifested in a Distribution System, following the relevant CMG decision under the provisions of this Plan, the CMU Head declares Alert Status 3.

#### **CHAPTER 2: National Measures to be taken per crisis Level**

The Crisis Levels are defined in paragraph 1 of Article 11 of the Regulation and they are presented in Chapter 1 of this Plan. The measures to be taken at each of the three (3) levels of Crisis are determined as follows:

#### 2.1 Measures at Early Warning Level (Alert Status 1)

In order to deal with Alert Status 1 the planned measures aim at the immediate mobilization of all participants in Natural Gas market, in order to prevent the further escalation of the alert level and to achieve a return to stability as soon as possible. Indicatively and not restrictively, the measures to be taken are as follows:

- Immediate notification to all NNGS Users, Distribution System Operators, the HETS
  Operator and RAE by the CMU Head via email or any other appropriate means, on
  declaration of Alert Status 1 and the reasons that caused it.
- Contact of the CMU members with Transmission and/or LNG Users in order to collect all necessary information regarding demand and supply estimations with the scope of producing a balance of supply – demand for the next seven (7) days.
- Provision, by the HETS Operator, of estimated demand (for the next seven (7) days) of gas-fired power plants within the time limit set by the CMU Head.
- Provision of Daily estimates (for the next seven (7) days) by the Distribution System Operators, of the total future consumptions of the Network System they serve and especially the future consumptions of Protected Customers.
- Provision, by Natural Gas Suppliers to the CMU Head, within the time limit set by him,
  of information referring to the possibility of limiting the Natural Gas demand during
  the upcoming period, within the framework of demand response agreements concluded
  by the latter.
- Information on a daily basis regarding the development of the incident and transmission of the estimated balance of supply demand to RAE.

#### 2.2 Measures at Alert Level (Alert Status 2)

In order to deal with Alert Status 2, the planned measures aim at the immediate mobilization of all participants in the Natural Gas market in order to avoid an upgrade of the alert level by implementing only market-based-measures and to restore Alert Status 1 or stability as soon as possible.

The measures described in paragraph 2.1 above may also be adapted in this Alert Status and further measures that may be taken, but not be limited to, are the following:

- Activation of Action D1 of the Preventive Action Plan- Demand management (Interruptible and Intermittent Consumers).
- Activation of Action D6 of the Preventive Action Plan, according to Annex 6 of this Plan.
- Activation of Action D5 of the Preventive Action Plan Use of the Power Generators LNG Security Reserves in the LNG Facility at Revithoussa.
- Examination of the ability to increase Natural Gas Deliveries through pipeline or LNG Cargoes.
- Elimination of a Maximum Bid Limit in the auctioning procedure at the Balancing Platform in the case of an auction to purchase Balancing Gas.

The expected contribution of the measures to address Alert Status 2 is described in the Preventive Action Plan.

#### 2.3 Measures for Emergency Level (Alert Status 3)

To address an Alert Status 3, the planned measures aim at the continued meeting of residual demand and especially the supply of Protected Customers.

The measures described in paragraph 2.2 above may also be adapted in this Alert Status and further measures that may be taken, but not be limited to, are the following:

- Compulsory interruption/limitation of Customers demand, according to the Priority List for Interruption of Annex 1 hereto.
- Natural Gas Supply Agreements for the provision of Balancing Services by the Operator.

- Mandatory re-gasification by the Operator of LNG Users' LNG Quantities that are temporarily stored at Revithoussa LNG Facility, exclusively for the service of Protected Customers, according to the provisions of article 73 par. 7 of Law 4001/2011 and article 65<sup>B</sup> of the NNGS Network Code.
- Submission by RAE of a call for assistance from the European Union or/and its
  Member States to the Emergency Response Coordination Centre of the European
  Commission (hereinafter "ERCC") according to paragraph 2 of Article 11 of
  Regulation.

#### 2.4 Information Flow

All Involved Parties immediately transmit to the CMU Head any information requested by the latter or deemed by them to be likely to cause an event that will affect the smooth operation of the Greek N.G. market.

The Involved Parties must designate contact persons in charge during Alert Statuses, and communicate the contact details to the NNGS Operator no later than two (2) weeks from adoption of this Plan. The CMU Head will see that a list of Involved Parties contacts is prepared and sent to the Involved Parties.

The availability of the Involved Parties' contact persons or their substitutes must be ensured 24 hours a day all year round.

## CHAPTER 3: Specific measures for electricity and district heating

#### 3.1 District Heating

In the Greek Natural Gas Market there is a limited number of small-scale District Heating plants that have been installed mainly in Northern Greece. These plants are powered by the Distribution Networks and are integrated into Protected Customers.

According to the above, the supply disruption that can be caused in this area is very small.

#### 3.2 Electricity Supply powered by Natural Gas

- (i) As mentioned in the Preventive Action Plan, based on the Risk Assessment Study, the particularly important and increased share of Natural Gas in the primary energy balance of the electricity production sector has led to the need to examine measures that emphasize on the decrease of consequences to the electricity production from probable reduction of supply to Natural Gas plants. The lack of fuel may have serious effects on the operation of the electricity system, on the gas transfer and on the Natural Gas supply to domestic consumers and small and medium-sized enterprises, since in any case the electricity supply is necessary for the operation of heating or hot water systems.
- (ii) In order to mitigate the effect of the Natural Gas supply disruption on the electricity sector and thus the Protected Consumers, the Actions framework for the achievement of Strategy 3: "Increase the level of the power sector preparedness to address risks/ disturbances in the supply of natural gas" has been designed and approved within the Preventive Action Plan, particularly Actions D2 Enhancement of dual fuel availability, D5 Winter stock/ Revithoussa LNG tank and D6 Introduction of electricity market rules to incorporate fuel availability.

Furthermore, during crises, the HETS Operator examines the possibility of ensuring an adequate margin of redundancy in the Electricity Generation system and informs RAE and the CMG Head. Among other things, the feasibility of the following actions are considered:

- Postponement of planned maintenance of power generation units that use any fuel other than Natural Gas.
- o Increase of Electricity production from lignite-fired units.
- Increase of Electricity production from Hydroelectric Plants.
- Carrying out emergency imports of Electricity.
- Curtailment of Physical Transmission Rights, within the framework of European and National Regulations, following an agreement with the adjacent Operators.
- o Activation of Interruptible Transmission Services Agreement.
- (iii) The provisions for the insurance of adequate coordination, including information exchange between the main actors of Natural Gas and electricity sectors, are

described in the relative paragraphs on information flow and specifically in paragraph 2.4 and chapter 5, and also in the Annexes of the present Plan.

#### **CHAPTER 4: Crisis manager or team**

Below follows the determination of responsibilities and obligations of Crisis management bodies and their members in order to ensure their effective and timely response in the event of situations that could disrupt the smooth supply of the greek market with Natural Gas, taking into account the provisions of Directive 2009/73/EC of the European Parliament and of the Council, Regulation (EC) 715/2009 of the European Parliament and of the Council, Regulation (EU) 2017/1938 of the European Parliament and of the Council, Law 4001/2011, as in force, and published legislative or regulatory delegated acts.

#### 4.1 Crisis Management Unit Head

The decisions to declare the three Alarm Status levels of Article 11 of the Regulation, in accordance with this Plan, are taken exclusively by the CMU Head. If the CMU Head is prevented, the Gas Flow Management Department Manager shall act as CMU Head. CMU members support the CMU Head, having a purely consultative role.

The CMU Head shall have the following responsibilities:

- Monitoring the NNGS supply and demand balance;
- Timely provide information to the CMG Head, EMCC as in case, and the relevant Involved Parties, as described in Chapter 1 hereof;
- Declare the Alert Status (Crisis level) as defined in Chapter 1 hereof;
- Propose to the CMG Head to convene the CMG, as described in the Chapter 1 hereof, or propose to RAE to convene EMCC;
- Monitoring the implementation of the applied measures;
- Implement the necessary actions to update the Plan; and
- Organize simulation of Crises situations exercises.

The CMU shall be convened under the Head's responsibility, in order to assess information related to issues that could lead to Alert Status declaration and the need for measures.

#### 4.2 Crisis Management Group

CMG Head, or his replacement that is defined by the abovementioned RAE Plenum decision, convenes and presides over the CMG. Right of vote shall be given to the CMG Head, the Representative of Ministry of Environment and Energy, the Representative of DESFA and the Representative of HETS Operator. Every CMG Member mentioned above has the right to one (1) vote. The CMG decisions are taken by an absolute majority of the present CMG Members. In the event of a tie, the vote of CMG Head prevails. The CMG participates in the EMCC.

The members to participate in the CMG are decided by CMG Head, as the case may be, taking into account the applicable Alert Status. The CMG shall have the following responsibilities:

- Evaluation of the recommendations of the CMU Head and the HETS Operator;
- The acknowledgment of the assumptions of the conditions for declaring an Emergency Crisis, which is declared by decision of the CMU Head.
- The adoption of non-market based measures in the event of an Emergency Crisis.
- Take measures to support supply of Natural Gas to neighboring countries (European Union Member States), or cooperation with European Union Member States, within the framework of regional cooperation in accordance with Annex I of the Regulation and Regulation (EC) 715/2009.

The implementation of measures within greek territory decided by the CMG shall be obligatory.

#### 4.3 Emergency Measures Coordination Committee

The Emergency Measures Coordination Committee ("EMCC") shall meet at the initiative of the competent Minister, following a recommendation from RAE or the NNGS Operator. EMCC's mission is to coordinate Government Agencies in order to address the effects of a major NNGS accident, considering the relevant directions issued by GSCP.

The implementation of the measures decided by EMCC within the greek territory is obligatory and it takes place after the issuance of a relative order by the Involved Parties as the case.

### **CHAPTER 5: Roles and responsibilities of the different actors**

#### 5.1 Early Warning Level (Alert Status 1)

Under the responsibility of the Head of the CMU, RAE will be informed on a daily basis by using any appropriate means, about the current situation and its likely outcome. Thus:

The involved parties submit to the Head of the CMU, within the deadline which is set after a relevant request, a report with the measures that are taken or are planned to be taken in Alert Status 2 or 3. The abovementioned report is submitted within the deadline which is set by the Head of the CMU until the Alert Status is changed. The involved parties are obliged to immediately inform the Head of the CMU via email and any appropriate means all data that might possibly lead to a change of Alert Status.

The Involved Parties and information flow on the Early Warning Level are shown in the following Chart 1.

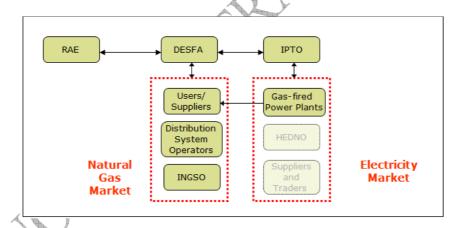


Chart 1: Involved Parties and information flow on the Early Warning Level

Table 1 below details the roles and responsibilities of the Involved Parties:

Organisation	Roles and responsibilities <u>Early Warning Level (Alert Status 1)</u>
RAE	<ul> <li>It informs the Gas Coordination Group ("GCG") and the competent Ministry on the Crisis level.</li> <li>It monitors the balance of supply – demand based on data submitted by the Head of the CMU.</li> <li>It communicates information provided by the European Commission to the Head of the CMU.</li> </ul>

DESFA/CMU	<ul> <li>It collects and evaluates data and information from Users and upstream-Connected systems Operators.</li> <li>It establishes the balance of Natural Gas supply –demand for the next seven (7) days.</li> <li>The Head of the CMU informs immediately all Involved Parties in relation to the upgrade/downgrade of the Crisis level.</li> </ul>	
IPTO	It makes estimates of the demand of Natural Gas plants, assesses the ability of alternative fuel in capacity and sends them to RAE and CMU.	
Users/Suppliers	<ul> <li>They provide CMU with estimates about future consumption and supply of Natural Gas, in the form and analysis determined by the Head of the CMU, within the deadline set by the latter.</li> <li>They provide information about the possibility of limiting the Natural Gas demand in the following period, as part of demand response agreements concluded with Intermittent Consumers (existing and potential).</li> </ul>	
Distribution	They provide the Head of the CMU with estimates about total future consumption	
System	of the System they serve as well as future consumption of Protected Costumers they	
Operators	serve, in the form and analysis determined by the Head of the CMU.	
INGS	They provide CMU with estimates about future Natural Gas consumption in the	
Operators	INGS they operate, in the form and analysis determined by the Head of the CMU.	
Gas-fired	They provide Users who serve them with assessments of future demand of their	
Power Plants	units, in the form and analysis determined by the Head of the CMU.	

Table 1: Roles and responsibilities of Involved Parties on Early Warning Level

#### 5.2 Alert Level (Alert Status 2)

CMU collects more data concerning the incident and ensures the constant information flow regarding the evolution of the incident, evaluates the necessity of measures to cope with it or to relieve its impact and reevaluates the Alert Level. Thus:

The Involved Parties submit to the Head of the CMU, within the deadline which is set by the latter with the sending of the relevant request, a report about the measures that are taken or are planned to be taken on Alert Status 2. The above-mentioned report is submitted within the deadline which is set by the Head of the CMU until the Alert Status is changed. The Involved Parties are obliged to immediately inform the Head of CMU via any appropriate means all data that might possibly lead to a change of Alert Status. The Head of the CMU communicates (if necessary) directly with the Involved Parties he/she considers necessary. The Head of the CMU informs the Head of the CMG regarding the formed Alert Status 2 as soon as possible. The Head of the CMU submits a report to RAE and to the Head of the CMG regarding the evolution of the alert status on a Daily basis. The Head of the CMG evaluates the relevant information and convenes the CMG meeting, specifying the participant Involved Parties. During the meeting, it is possible to consider market-based measures, besides those stated in the above-mentioned reports, in order to reestablish a lower level Alert Status.

The Involved Parties and information flow on the Alert Level are shown in the following Chart 2.

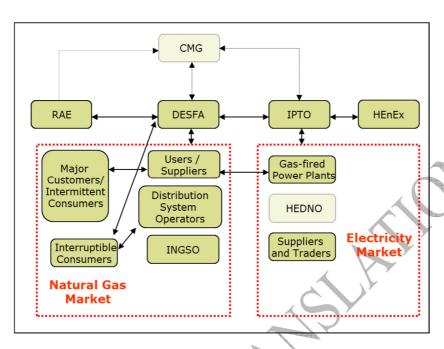


Chart 2: Involved Parties and information flow on Alert Level

Table 2 presents additional roles and obligations (in addition to those described in the previous paragraph 5.1 above) of the Involved Parties on occurrence of an Alert Level crisis.

Organisation	Roles and responsibilities <u>Alert Level (Alert Status 2)</u>
	• It informs GCG, the Competent Authorities of the Member
	States of the European Union that are part of the same Risk
RAE	Group and the competent Ministry.
	<ul> <li>It monitors the balance of supply – demand and the effectiveness</li> </ul>
	of market-based measures in managing the Crisis.
	It establishes the balance of Natural Gas supply – demand for the
	next seven (7) days, taking into account the market-based
4 \ \ \	measures taken.
	• The Head of the CMU informs RAE on a daily basis about the
	adequacy of market-based measures for the supply of Protected
	Costumers.
	• The Head of the CMU informs RAE immediately about any
DESFA/CMU	failure by the obligated parties to comply with the measures, that
DEST I VENTE	he may be aware.
	The Head of the CMU recommends the convening of the CMG
	if he deems it necessary.
	It sends to the HETS Operator the daily estimated Natural Gas
	quantities for power production (Action 6 of the Preventive
	Action Plan) according to Annex 6 of this Plan.
	It activates the Interruptibility measure and informs the Operator
	or/and Major Customers involved in order to limit their demand

	at a level less than 60% of their daily demand, within six (6) hours according to Annex 5 of this Plan.  It contributes to the implementation of Action D5 of the Preventive Action Plan.
IPTO	It implements Action D6 of the Preventive Action Plan according to Annex 6 of this Plan.
HEnEx	It implements Action D6 of the Preventive Action Plan according to Annex 6 of this Plan.
CMG	<ul> <li>It considers the need to upgrade the alert level and to adapt non-market based measures in order to ensure the supply of Protected Customers.</li> <li>The Head of the CMG convenes the CMG meeting if necessary.</li> </ul>
Users/Suppliers	<ul> <li>They request from the Intermittent Consumers to reduce their demand as set out in the Natural Gas demand response agreement or from Major Customers to reduce their demand.</li> <li>They take actions for increased deliveries of Natural Gas or LNG.</li> <li>They inform RAE and the Head of the CMU on the adoption of specific market-based measures and their relevant timeframe.</li> </ul>
Interruptible Consumers	They limit their demand at a level less than 60% of their daily demand, within six (6) hours of receiving the relevant order by the NNGS Operator or/and the Distribution System Operator according to Annex 5 of this Plan.
Major Customers (Intermittent Consumers included)	<ul> <li>They consider the possibility of Natural Gas demand management and to conclude a demand response agreement with their Suppliers.</li> <li>The Intermittent Consumers implement the contractual term on demand response following a request by their Supplier.</li> </ul>
INGS Operators	In collaboration with the NNGS Operator, the possibility of ensuring additional capacity is evaluated, in order to activate Suppliers as above-mentioned.
Distribution System Operators	<ul> <li>They supervise the necessary measures of Natural Gas demand management in the systems they operate (Interruptible Consumers, Major Customers and Intermittent Consumers that implement the contractual term on Natural Gas demand response).</li> <li>They immediately inform the CMU about any failure by the obligated parties to comply with the measures, that they may be aware.</li> </ul>

Table 2: Roles and responsibilities of Involved Parties on Alert Level

#### 5.3 Emergency Level (Alert Status 3)

The Head of the CMU immediately and by using any appropriate means, informs all Involved Parties about Alert Status 3 and its estimated evolution. The Head of the CMG immediately convenes the CMG meeting after receiving the relevant briefing from the Head of the CMU.

The members to participate in the CMG meeting shall be any of the Involved Parties whose participation is considered necessary by the Head of the CMG. During the meeting, the Head

of the CMU (in collaboration with the HETS Representative in case the operation of power production units is affected) proposes the non-market-based measures that need to be taken in order to mitigate the effects of Alert Status 3 and to lower the Status level. In case the measures include reduction or discontinuation of Natural Gas supply to the consumers, their implementation shall be in accordance with the processes in Annexes 2, 3 and 4. The Involved Parties and information flow on Emergency Level are shown in the following Chart 3.

Any of the Involved Parties shall participate in the CGM meeting, as long as the Head of the CMG considers it necessary.

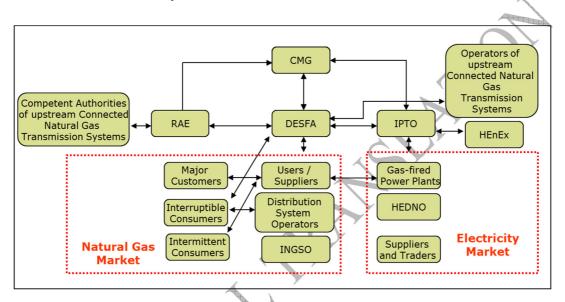


Chart 3: Involved Parties and information flow on Emergency Level

Table 3 presents additional roles and obligations (in addition to those described in the previous paragraphs 5.1 and 5.2 above) of the Involved Parties on occurrence of an Emergency Level Crisis.

/ 4	
Onconinction	Roles and responsibilities
Organization	Emergency Level (Alert Status 3)
RAE	<ul> <li>It informs GCG and the Commission's ERCC, the Competent Authorities of the European Union Member States of the same Risk Group and the competent Ministry.</li> <li>It suggests to the competent Minister to convene the GSCP, if it deems it necessary.</li> </ul>
CMU/DESFA	<ul> <li>It establishes the balance of Natural Gas supply – demand for the next seven (7) days, taking into account the market-based measures taken and determines the maximum quantity of Natural Gas that is permitted to be received in a particular geographic area.</li> <li>It implements non-market based measures as decided by the CMG.</li> <li>The Head of the CMU informs by any means, where applicable, the Operators of the Connected Natural Gas Transmission Systems and/or of the Natural Gas Distribution Systems as well as the involved Transmission and LNG Users.</li> <li>It continues the implementation of Action D6 of the Preventive Action Plan to the extent that they can be applied.</li> </ul>

	■ It contributes to the implementation of Action D5 of the Preventive Action Plan.
	It issues operational flow orders of limitation or interruption of Natural Gas
	supply following a CMG decision, according to Annexes 2, 3 and 4 of this Plan.
	It suggests to RAE or to the competent Minister to convene the GSCP, if it
	<ul> <li>deems it necessary.</li> <li>The Head of the CMG convenes the CMG and the latter decides the adoption</li> </ul>
	of non-market based measures to ensure the supply of Protected Costumers.
G) (G	<ul> <li>In case of peripheral crisis, the possibility of contribution from a neighboring</li> </ul>
CMG	Member State in order to supply Protected Consumers of solidarity is
	examined.
	It participates in GSCP.
	• It continues the implementation of Action D6, to the extent that it can be
	applied.  It investigates the possibility to ensure adequate reserve margin in the Power
	<ul> <li>It investigates the possibility to ensure adequate reserve margin in the Power Production system and informs RAE and the CMG Head. It examines the</li> </ul>
IPTO	feasibility of the actions described in Paragraph 3.2.
	It participates in the decisions of the CMG, particularly in relation to NG supply
	limitations to gas-fired power plants. It issues the necessary dispatch orders to
	plants using alternative fuel following a CMG decision.
THE E	• It continues the implementation of Action D6 to the extent that it can be
HEnEx	applied.
	They take actions for increased deliveries of Natural Gas or/and LNG.
TT (G 1)	They request their Major Customers to reduce or interrupt demand after
Users/Suppliers	decision of the CMG and the issuance of a relevant order by the NNGS
	Operator.
Distribution	■ They make the necessary limitations to the Natural Gas demand on the
System	networks they manage, upon the relevant decision of CMG.
Operators	They issue suggestions of reasonable NG usage.
INGS	They implement measures to address emergencies/crises, following a decision of
Operators	the CMG.
GSCP	It coordinates the Government Authorities to address the Crisis taking into consideration especially RAE's and the NNGS Operator's suggestions.
Major	
Customers	
(including the	
Interruptible /	They follow the procedures provided in this Plan and the CMG decisions about reducing demand.
Intermittent	reducing demand.
Consumers and	
power	7
producers )	
Z-ministral	

Table 3: Roles and responsibilities of Involved Parties on Emergency Level

### **CHAPTER 6:** Measures regarding undue consumption of non-Protected Customers

During the Alert Status 3, the NNGS Operator regularly monitors the consumption of non-protected customers who are connected to the NNGTS. In case of non-compliance with reduced flow measures that may have been imposed on them, the Operator activates the procedures of immediate disruption of Natural Gas supply according to the NNGS Network Code.

During the Alert Status 3, the relevant Distribution System Operators regularly monitor the consumption of non-protected customers. In case of encountered undue consumption, they activate the procedures of immediate disruption of Natural Gas supply according to the Code of Distribution System.

Furthermore, during the Alert Status 3, the Distribution System Operators display suggestions of reasonable NG consumption – voluntary optimal management measures to all Natural Gas Consumers aiming at reducing NG use and the insurance of supply of the Protected Customers.

#### **CHAPTER 7: Emergency Tests**

#### 7.1 Development of scenarios

The NNGS Operator develops and analyses limited Natural Gas supply and extremely high Natural Gas demand scenarios in the NGTS. The aim is to provide information and evidence on the effectiveness of the established measures of this Plan and the need to adopt new ones to deal with Emergencies/Crises, with a view to meet the demand for Natural Gas or, at worst, to comply with the gas supply Standard referred to in Article 6 of the Regulation.

The need to revise the scenarios is considered on a yearly basis, taking into account (a) the excess of the maximum daily consumption of natural gas seen on the NNGTS since its inception, as well as (b) significant changes at the installations and operation of the NNGS.

The scenarios are revised under the NNGS Operator's responsibility.

#### 7.2 Tests

The Plan is reviewed frequently and evaluated for effectiveness by performing tests.

Tests which provide for the involvement of the NNGS Operator's CMU or CMG are conducted, according to paragraph 2 of Article 10 of Regulation, at least once between the four-year updates of the Plan. In case an incident has occurred within the above-mentioned period that has led to a Crisis of any level, the said planned test shall not be conducted.

In planning the scheduled tests and with the aim of verifying effectiveness of the Plan, the Head of the CMU may require the Involved Parties to provide additional information, determining the time schedule, in which such information should be available. The Involved Parties timely provide the information requested, classifying any confidential information accordingly. The

NNGS Operator commits not to publish or disclose information classified by the providing Involved Party as confidential.

The Head of the CMU will provide detailed information to the Involved Parties participating in a test, designed as provided for in this section, and especially about the scenario of the test and their participation. The CMU will provide any clarification to the Involved Parties participating in the test, if so required.

After completion of the test, the Head of the CMU will prepare and communicate a relevant report to RAE, which may include, among others, proposals for the revision of this Plan.

The designed tests are relating to the cases of activation of crisis levels (A-E) presented in paragraph 1.2.

#### 7.3 Plan Revisions

The NNGS Operator may propose amendments to the Plan or revision of the Plan, aiming to reassure its effectiveness in compliance with the applicable provisions. Any amendment or revision of the Plan is approved by RAE. The Plan and every revision of the Plan are notified to the European Commission under RAE's responsibility.

#### **CHAPTER 8: Regional Dimension**

The provisions of this Plan do not affect the Regional Dimension of the Regulation.

### ANNEX 1: PRIORITY LIST FOR INTERRUPTION OF NATURAL GAS SUPPLY IN AN EMERGENCY

The imposed interruption/limitation of Natural Gas supply to consumers is the key measure to manage an alert status 3 in order to ensure the reliable and safe operation of the NNGS, the supply of the residual demand, especially to the Protected Customers, and to limit impacts on the Power Production System.

The CMG, on recommendation of the Head of the CMU, decides to interrupt/limit Natural Gas supply to Customers in the following order of priority:

- 1. Interruptible Consumers.
- 2. Licensed Power Producers using Natural Gas.
- 3. Natural Gas Consumers in the following order of interruption:
  - Major Industrial Consumers with Annual Quantity of Natural Gas
    Consumption greater than 100 GWh, which use the Natural Gas as raw
    material for the production of caloric fluids (e.g. steam) and Heat and Power
    cogeneration.
  - ii. Major Industrial Consumers with Annual Quantity of Natural Gas Consumption greater than 100 GWh, which use the Natural Gas for processes (furnaces, etc.).
  - iii. Small Industrial Consumers with Annual Quantity of Natural Gas Consumption equal to or less than 100 GWh, which are not Protected Customers and use the Natural Gas as raw material for the production of caloric fluids (e.g. steam) and Heat and Power cogeneration.
  - iv. Small Industrial Consumers with Annual Quantity of Natural Gas Consumption equal to or less than 100 GWh, which are not Protected Customers and use the Natural Gas for processes (furnaces, etc.).
  - v. Commercial Consumers that are not Protected Customers, according to the Emergency Plan of the Natural Gas Distribution System Operator.

4. Protected Customers whose interruption/limitation is considered necessary to ensure reliable and safe operation of the NNGS and the distribution networks, according to the Emergency Plan of the respective Distribution System Operator.

Under the responsibility of the NNGS Operator and the Distribution System Operators, a list per Consumer category according to items (i) up to (v) above is drawn up, with distinct reference to the Annual Natural Gas Consumption Quantity.

By the 5<sup>th</sup> working Day of each Month, the NNGS Operator updates the Annual Natural Gas Consumption Quantity of the Consumers supplied directly by the NNGTS and the Distribution System Operators send to the NNGS Operator the updated Annual Natural Gas Consumption Quantity of their Consumers that fall into items (i) to (v) above.

# ANNEX 2: SUPPLY INTERRUPTION/LIMITATION PROCEDURE TO INTERRUPTIBLE CONSUMERS IN CASE OF EMERGENCY

To alleviate the Alert Status 3 consequences and in order to ensure reliable and safe operation of the NNGS, the interruption/limitation of Natural Gas supply to Interruptible Consumers may be required.

The Head of the CMU assesses the supply of Natural Gas at regular intervals to check whether the Natural Gas demand, as estimated by the NNGS Operator, is met. The CMU, by using historical data of Natural Gas demand, the Natural Gas nominations and estimations of the Natural Gas Transmission Users, the Natural Gas Distribution System Operators and the HETS Operator concerning the forthcoming period, develops scenarios of Natural Gas Deliveries/Offtakes in the NNGS, identifying any mass imbalance in the forthcoming period.

Then, if considered necessary by the above analysis, and in order to eliminate or reduce the daily Natural Gas Delivery/Off-take mass balance deficit and mitigate the Emergency (Alert Status 3) so that uninterrupted supply of Protected Customers is ensured in all cases, the Head of the CMU determines:

- the maximum daily limitation (up to interruption) of the Natural Gas supply to the Interruptible Consumers in MWh (GCV), taking into account relevant information provided by the Suppliers serving them; and
- its estimated duration.

The CMG decides to interrupt/limit the Natural Gas supply to Interruptible Consumers, on recommendation of the Head of the CMU, or requests alternative interruption/limitation scenarios to be considered.

# ANNEX 3: PROCEDURE OF NATURAL GAS SUPPLY INTERRUPTION/LIMITATION TO GAS-FIRED POWER PLANTS IN CASE OF EMERGENCY

If the measures for the interruption of the Natural Gas supply to Interruptible Consumers are not sufficient to mitigate the consequences of Alert Status 3, in order to ensure the reliable and safe operation of the NNGS and the continued supply of residual demand, and in particular the demand of Protected Consumers, the interruption/limitation of Natural Gas supply to licensed electricity producers using Natural Gas may be required.

The Head of the CMU assesses the supply of Natural Gas at regular intervals to check whether the Natural Gas demand, as estimated by the NNGS Operator, is met. The CMU, by using historical data of Natural Gas demand, the current NNGS Operator's estimation of demand and the Natural Gas predictions of the Natural Gas Transmission Users, the Natural Gas Distribution System Operators and the HETS Operator in the forthcoming period, identifies any mass imbalance in the forthcoming period.

The HETS Operator, by considering the results of the above analysis and with the aim of the safe and smooth operation of the Power Transmission System, the maximum power production using the available Natural Gas supply and the available capacity of gas-fired Power Plants that can operate with alternative fuel, recommends to the CMG the interruption/limitation of Natural Gas supply to specific power production plants.

The CMG decides to interrupt/limit the Natural Gas supply to gas-fired Power Production Plants, on recommendation of the HETS Operator, or requests alternative interruption/limitation scenarios to be considered by the HETS Operator.

To implement the above decision and the minutes of the CMG meeting, the NNGS Operator issues and sends a relevant Operational Flow Order to the Transmission User(s) that serve the gas-fired Power Plants to which Natural Gas supply will be interrupted/limited, in accordance with the provisions of Article 65 and Annex III of the NNGS Network Code, as in force.

# ANNEX 4: PROCEDURE OF NATURAL GAS SUPPLY INTERRUPTION/LIMITATION TO OTHER CUSTOMERS IN CASE OF EMERGENCY

If the measures of interruption of Natural Gas supply to Interruptible Consumers and gas-fired Power Plants are not sufficient to mitigate the consequences of Alert Status 3, and in order to ensure the reliable and safe operation of the NNGS and the continued supply of the residual demand and in particular the demand of Protected Customers, the interruption/limitation of Natural Gas supply to other Customers, Natural Gas Consumers according to the List of Annex I may be required.

The CMU, by using historical data of Natural Gas demand, the confirmed Natural Gas quantities and estimations of the Natural Gas Transmission Users, the Natural Gas Distribution System Operators and the HETS Operator in the forthcoming period, develops scenarios of Natural Gas Deliveries/Off-takes in the NNGS, identifying any mass imbalance in the forthcoming period.

Then, if considered necessary by the above analysis, and in order to eliminate the daily mass balance deficit and mitigate the Emergency (Alert Status 3) so that uninterrupted Natural Gas supply to Protected Customers is ensured in all cases, the Head of the CMU determines:

- the geographical area where interruption/limitation of Natural Gas supply is needed;
- its estimated duration; and
- the maximum energy (MWh of Natural Gas) which may be received in the specific geographical area by the Transmission Users that serve other Customers or Distribution Networks in the specific geographical area;

and sends the results of the above analysis to the Head of the CMG and to the Distribution Systems Operators.

Upon cooperation with the relevant Distribution System Operators and taking into account (a) the Priority List of Annex 1, (b) the interruption method for similar Customers, and (c) the minimum notice period required for the safe resumption or interruption of production of affected Customers, the Head of the CMU recommends to the CMG the interruption/limitation of supply to other Customers in the specific geographical area, that are selected based on the above criteria.

The CMG decides to interrupt/limit the Natural Gas supply to other Customers, taking into account the aforementioned recommendation, or requests the consideration of alternative scenarios.

To implement the above decision of the CMG:

- i. the NNGS Operator issues and sends a relevant Operational Flow Order to the Transmission User(s) that serve the other Customers to which Natural Gas supply will be interrupted/limited, following the above decision of CMG, in accordance with the provisions of Article 65 and Annex III of the NNGS Network Code, and
- ii. the Distribution System Operators implement the above decision of the CMG to interrupt/limit the Natural Gas supply to other Customers according to the Distribution System Network Code and the relevant law.

### ANNEX 5: IMPLEMENTATION PROCEDURES OF THE INTERRUPTIBILITY MEASURE

The implementation procedures of the Interruptibility measure are established in this Annex.

#### A. Procedure of entry of Major Customers in the Interruptibility scheme

Major Customers, with the exception of those consuming Natural Gas for power production, may enter the Interruptible Consumers scheme according to the provisions of RAE's decision no. 344/2014, as amended by RAE's decision no. 1211/2018. Specifically, a prerequisite in order to enter this scheme is to enlist in the Interruptible Consumers Registry of the NNGS Operator according to the analytical provisions of this Annex.

For this purpose, Major Customers that wish to enter the Interruptible Consumers scheme shall submit to the competent NNGS Operator or, as appropriate, to the competent Distribution System Operator, a relevant statement - request stating on one hand that for the purposes of implementing this procedure they accept to follow the provisions of RAE's decision no. 1211/2018, this Plan and article 36 of Law 4001/2011, regarding the imposed obligations, procedures and sanctions system, and on the other hand they notify the following data to the competent abovementioned Operator and authorize it to post this data (i to iv) on the published Interruptible Consumers Registry on the internet site of the NNGS Operator:

- i. The Major Customer's legal name and General Electronic Commercial Registry (G.E.MI.) number.
- ii. The desired date of entry and removal from the Registry. The Major Customer's removal date from the Registry must be appointed at least twelve (12) consecutive Months after the desired date of entry to the Interruptible Consumers Registry, so that the minimum period of participation in the said Registry lasts for at least twelve (12) months.
- iii. The NNGTS Exit Point, in case the Major Customer's Installation is directly connected to the NNGTS, or the Distribution System that supplies the Major Customer's Installation.
- iv. The authorized representative to act for the needs of the present procedure and especially for the implementation of point B of this Annex and his solemn declaration regarding the categorization to Major Customers, according to the definition of case ( $\iota\zeta$ ) of paragraph 2 of article 2 of Law 4001/2011, as in force.

- v. The maximum and minimum hourly Natural Gas quantity that may be supplied to the Major Customer's Installation, in kWh/h.
- vi. The estimation of the average daily consumption on working Days and on Weekends / Holidays for every month starting from the desired date of entry to the Interruptible Consumers Registry up to the date of removal or until the 31st of May of the next Year following the Major Customer's entry to the Registry, in kWh/Day.

If the Major Customer is supplied through a Distribution System and submits his request to the Distribution System Operator, the latter forwards the data (i) – (iv) above to the Natural Gas Transmission System Operator within five (5) working days from the receipt of the request. The Distribution System Operator also submits to the NNGS Operator historical data about the hourly consumption (kWh/h) of the said Major Customer, regarding the twelve (12) Months that immediately precede the Month of the request submission.

The NNGS Operator evaluates the Major Customer's request regarding the completeness of the abovementioned submitted data (i) - (iv), by implementing the provisions of this Plan and the provisions of RAE's decision no. 1211/2018 and informs the Customer about his entry or not to the Interruptible Consumers Registry within five (5) working days from the submission date of the abovementioned request to the NNGS Operator. In case of rejection of the request, the NNGS Operator informs the Major Customer about the reasons of rejection and notifies the relevant decision to RAE and to the corresponding Distribution System Operator.

In case of acceptance of the request, the NNGS Operator registers the Major Customer's data to the Interruptible Consumers Registry. Furthermore, the NNGS Operator updates and registers to the said Registry his evaluation regarding the total minimum reduction of the Daily Natural Gas Off-take Quantity from the NNGTS, which may be achieved in the context of the Interruptibility measure on Alert Status 2 (more than 40% of the Daily Reference Quantities of each Interruptible Consumer) and on Alert Status 3 (up to 100% of the Daily Reference Quantities of each Interruptible Consumer).

In order to achieve a most accurate evaluation, as described above, the NNGS Operator takes into consideration: (a) the data of abovementioned items (v) and (vi) of Point A of this Annex that have been submitted by the Major Customers with their request to enter the Interruptible Consumers Registry and (b) historical data of consumption of the said Major Customers that the Operator keeps, in case the Major Customers are directly connected to the NNGTS, or data that the Distribution System Operator keeps, in case the Major Customer is supplied by the distribution network.

A Major Customer may submit a request to register to the Interruptible Consumers Registry anytime during the year. The period of participation in the Interruptible Consumers Registry is twelve (12) consecutive months. The period of removal from the Interruptible Consumers Registry requests submission is between the 2<sup>nd</sup> and the 21<sup>st</sup> of May each year. The Operator examines the removal from the Interruptible Consumers Registry request of a Major Customer within five (5) working days from its submission date. Considering the requested desired removal date, if the requirement concerning the minimum twelvemonth period of participation is satisfied, the Major Customer is removed from the Registry on the 1<sup>st</sup> Day of the next Month following the requested removal date.

# B. Conditions and procedure of reduction of natural gas consumption by the Interruptible Consumers during Crisis according to the provisions of Chapter 10 of the NNGS Network Code and the Emergency Plan

#### 1. Procedures to follow following the declaration of Alert Status 2 or 3

On Alert Status 2, every Interruptible Consumer is obliged to reduce its total Natural Gas consumption to levels lower than 60% of its Daily Reference Quantity within six (6) hours from the receipt of the relevant request by the NNGS Operator, or as the case may be, by the competent Natural Gas Distribution System Operator.

On Alert Status 3 and after a CMG decision, according to Annex 2 of this Plan, regarding the range of the restriction (until total interruption) of the Natural Gas supply to Interruptible Consumers and its estimated duration:

a) The NNGS Operator issues orders of operational flow to the Transmission Users that serve Interruptible Consumers supplied directly by the NNGTS, according to the provisions of Article 65 and Annex III of the NNGS Network Code.

If two (2) or more Transmission Users utilize an NNGTS Exit Point that supplies an Interruptible Consumer, the Natural Gas Off-takes Quantities of these Transmission Users are reduced proportionally to their Confirmed Quantities.

b) The NNGS Operator, besides issuing orders of operational flow to the Transmission Users, according to the provisions of Article 65 and Annex III of the NNGS Network Code, informs the Distribution System Operators on the Natural Gas Quantity the connected to Distribution System Networks Interruptible Consumers may consume during a specific period, via email. The Distribution System Operators, taking into consideration the above information provided by the NNGS Operator, and particularly the Natural Gas Quantity the Interruptible Consumers

may consume during a specific period according to the abovementioned notification by the NNGS Operator, issue the relevant orders of operational flow to the Interruptible Consumers and notify the Distribution Users that serve them.

#### 2. Daily Reference Quantity of an Interruptible Consumer

The Daily Reference Quantity of an Interruptible Consumer is defined as:

- i. The Natural Gas Quantity consumed by the Interruptible Consumer on the working Day that immediately precedes the Day the Alert Status 2 or 3 was declared, in case the reduction of Natural Gas supply to the Interruptible Consumer must be implemented on a working Day, or
- ii. The Natural Gas Quantity consumed by the Interruptible Consumer on the Saturday that immediately precedes the Day the Alert Status 2 or 3 was declared, in case the reduction of Natural Gas supply to the Interruptible Consumer must be implemented on a Saturday, or
- iii. The Natural Gas Quantity consumed by the Interruptible Consumer on the Sunday that immediately precedes the Day the Alert Status 2 or 3 was declared, in case the reduction of Natural Gas supply to the Interruptible Consumer must be implemented on a Sunday or a Holiday.

#### 3. Procedures to follow following the end of Crisis

By the fifth (5<sup>th</sup>) working day following the day Alert Status 2 or 3 ended, the Distribution System Operators send to the NNGS Operator a report that includes the detailed Natural Gas consumption data of the Interruptible Consumers supplied by the Distribution System they operate, that will be the base upon which the Natural Gas consumption reduction level of each one of the Interruptible Consumers, as well as their consumption behavior during the Crisis, will be determined.

#### The data include:

- a) The Daily Reference Quantity of every Interruptible Consumer in the geographical area of responsibility of the Distribution System Operator,
- b) The actual Daily consumption of the Interruptible Consumer during a Crisis period,
- c) The achieved Daily reduction per Interruptible Consumer for every Day of a Crisis,

- d) The percentage of the difference for every Day and for every Interruptible Consumer during the entire Crisis period and
- e) The percentage of the difference of the total natural gas reduction from all Interruptible Consumers of the specific Distribution System in relation to the reduction the Operator had requested according to B.1.2 (b) above.

In the Alert Level Crisis Incident Report or the Emergency Level Crisis Incident Report the NNGS Operator submits to RAE, according to Chapter 10 of the NNGS Network Code, a distinct report is included on the Interruptible Consumers' contribution to the handling of the Crisis, whether they are supplied by Distribution Systems or directly by the NNGTS. This report includes the data (a) to (e) mentioned hereinabove for every Interruptible Consumer, as well as the total Natural Gas consumption reduction that has been achieved. The above-mentioned Incident Report is notified to the responsible Distribution System Operators if data concerning Interruptible Consumers supplied by their networks are included.

# C. Obligation to pay Supply Security Levy, conditions and sanctions procedure in case of Interruptible Consumers' non-compliance with the obligations provided in RAE's decision no. 1211/2018 and in this Annex of the Plan.

RAE within its competence, according to Articles 3, 13 and 22 of Law 4001/2011 in particular, monitors and supervises the compliance with specific regulatory obligations imposed in accordance with the provisions of RAE's decision no. 1211/2018 and of this Annex. In case RAE finds, especially after being informed by the responsible Operator, breach of the above obligations by an Interruptible Consumer, the latter is obliged to pay the Supply Security Levy that corresponds to its total consumptions from the date of its registration in the Interruptible Consumers Registry until the end of the twelvementh participation in the abovementioned Registry during which the breach took place.

RAÉ may impose an increase of this Levy up to one hundred percent (100%) on the Interruptible Consumer, as administrative sanction under existing legislation, depending on the frequency and the severity of the breach, considering in particular the deviation between Natural Gas consumption by the Consumer and its outstanding reduction of consumption.

# ANNEX 6: PROCEDURE FOR IMPLEMENTING ACTION 'D6' OF THE PREVENTIVE ACTION PLAN – 'INTRODUCTION OF ADDITIONAL RULES IN THE ELECTRIC MARKET FOR CONNECTION WITH THE AVAILABILITY OF FUEL OF 5 ALTERNATE FUEL UNITS'

By declaring NNGS Alert Status 2 (Alert level) or Alert Status 3 (Emergency level), Action 'D6' of the Preventive Action Plan is activated.

The implementation of Action D6 of the Preventive Action Plan includes the following actions:

- Estimation by the NNGS Operator of the following quantities of Natural Gas, in thermal MWh, for every Allocation Day as defined in the electricity market:
  - (TPP1) Available Natural Gas quantity for power generation resulting from the demand-supply balance. In preparing the balance, estimations of Natural Gas daily demand for Protected and other Natural Gas Customers, the amount of commercial inventory at Revithoussa LNG Facility as well as information and estimates of future Natural Gas Deliveries and Off-takes and LNG unloading quantities following contact with gas suppliers are taken into account.
  - (TPP2) Available LNG quantity from the Power Generators LNG Security Reserves in the LNG Facility at Revithoussa (within the framework of Action D5 of the Preventive Action Plan).

It should be noted that both the estimation of the quantity of TPP1 and the quantity of TPP2 should take into account the day of arrival of a next LNG cargo (-es) at the LNG Facility at Revithoussa, or any other condition resulting in the satisfaction of Natural Gas demand, aiming at the rational management of the stocks and the servicing of the Protected and other Customers.

- The NNGS Operator sends the abovementioned thermal energy quantities to the HETS Operator.
- The HETS Operator converts the abovementioned quantities (TPP1 and TPP2) to power injection volumes (electric MWh) from Natural Gas units, based on an approved methodology (Government Gazette B' 529/21.02.2019) (TPP1 and TPP2) and sends them to the Hellenic Energy Exchange (EXE).

The abovementioned quantities of electricity (TPP1 and TPP2) are the Maximum Daily Electricity (electric MWh) Limitations from natural gas-fueled power generation units. They are considered as energy restrictions to the Daily Ahead Scheduling (DAS) and Dispatch Scheduling (DS), relating to this Allocation Day. Specific details regarding the conversion of the abovementioned quantities and the formation of the energy restrictions are set out in the provisions of the HETS Operation Code and the electricity Market Operation Code.

Action D6 is deactivated when the ending of Alert Status 2 or 3 is declared.