

Malta's Emergency Plan

Gas Security of Supply

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Executive summary

The 2022 update of Malta's Emergency Plan comes at a time when the EU Member States are going through an unprecedented energy crisis. In 2022, a number of EU countries experienced disruptions of supplies of gas from Russia. Pipeline flows of natural gas from Russia to the EU were reduced to less than 30% of the average of previous years. Further or even full disruption of Russian gas flows to Europe before or during winter 2022/2023 are possible. For this reason, in 2022 a number of Member States triggered either the 'early warning' or 'alert' crisis levels in line with the Gas Security of Supply Regulation. The continued reduced availability of natural gas in Europe has negatively impacted energy prices and contributed towards inflation across all EU Member States, including Malta.

Malta does not depend on Russian gas and hence is not directly affected by a disruption of Russian gas supplies. This is mainly due to the nature of its energy system, the fact that it is disconnected from the trans-European gas network, and because it relies on LNG imports from the global market. Nevertheless, Malta could be exposed to disrupted gas flows in mainland Europe, in particular Italy, as in case of shortage these could potentially lead to a partial or full curtailment of electricity imports over the Malta-Italy subsea link and negatively impact Malta's security of supply. Additionally, Malta is exposed to increasing prices of electricity imports from Italy, which as of July 2022 have reached a maximum of around 650 EUR/MWh.

In view of possible further supply cuts of Russian gas flows and the need for the EU to jointly address these issues the EU Member States agreed on several legislative instruments. On June 29th, 2022, Regulation (EU) 2022/1032, dealing with Gas Storage obligations was adopted and on July 26th, 2022 the Council Regulation (EU) 2022/1369 for coordinated demand reduction measures for gas was approved. These Regulations create a coordination framework for national gas storage and demand reduction measures, introduces a possibility for the European Commission to declare a "Union alert", triggering a mandatory 15% gas demand reduction obligation and mandates Member States to update their gas Emergency Plans in line with these developments.

Whilst Malta, due to the nature of its energy system and its isolated position, cannot fully contribute to the goals of the Regulation and provide solidarity to other Member States during an emergency by supplying other Member States with gas, it is nevertheless doing its utmost to utilise existing and new measures focusing on the reduction of electricity consumption while ensuring that its electricity system is able to switch to alternative sources, such as gasoil, when the need arises. This 2022 update of the Emergency Plan reflects these new realities and fulfils the obligation of Council Regulation (EU) 2022/1369.

The Competent Authority responsible for the implementation of the Gas Security of Supply Regulation, including the development of the Preventive Action Plan and Emergency Plan in Malta is the Ministry responsible for Energy.

As natural gas in Malta is used solely for electricity production, for the purpose of the N-1 infrastructure standard calculation in Malta's National Risk Assessment energy demand for gas equates to the demand for electricity. The "N-1" assessment (Gas Security of Supply Regulation Article 5) highlighted that:

- Malta has one gas facility. "N" therefore = 1, and consequently "N-1" = 0, highlighting the strategic dependency of Malta's electricity sector on the gas facility.

- Malta uses natural gas exclusively to generate electricity. There are no end-use gas customers in Malta and no gas distribution networks. Therefore demand-side measures are focused on management of LNG deliveries, alternative sources of electricity, and electricity demand reduction.
- Whilst the Gas Security of Supply Regulation considers gas supply and demand at daily granularity, it is necessary to balance electricity supply and demand in real time.
- At a daily level, demand can be met by relying on all other sources of electricity including on-island PV (solar photovoltaic) generation.
- However, for intra-day, energy supply and demand has also to be assessed. This demonstrated that whilst solar PV contributes in aggregate and in daylight hours, peak electricity demand in afternoons and evenings cannot be completely met without gas for electricity production.
- It was also noted that Solar PV is intermittent and provides no load or frequency management capability.

The draft 2022 Common Risk Assessments for Algeria and Libya together with the simulations done by ENTSO-G for the European Commission and presented during the Gas Coordination Group (GCG) confirmed that Malta is not at significant risk from disruption to gas supply. The only source of natural gas in Malta is imported Liquefied Natural Gas (LNG). This enables flexibility in the country of origin, and, to date, LNG has not been sourced from Russia, Algeria, or Libya. Within the Risk Group Emergency Plans, coordination between Member States has been established. The Regional Risk Groups have worked on updating the common risk assessments to take into account recent developments, and in particular assessing the impact of a full Russian gas disruption. As per the Council Regulation, Risk Groups are also tasked with coordinating the gas demand reduction measures.

Due to the single piece of gas infrastructure and the key role of gas in the electricity generation mix, Malta is particularly vulnerable to disruption to or loss of the supply of natural gas. As such, crisis level parameters and criteria are directly tied to electricity demand and the impact of gas availability on electricity supply. As Malta's only use for natural gas is the production of electricity, the only applicable measures to be adopted per crisis level are the specific measures to be adopted for electricity. The National Risk Assessment of all relevant risks affecting the security of gas supply, (Regulation 2017/1938 concerning measures to safeguard the security of gas supply, the "Regulation"), identified that should the single largest piece of gas infrastructure be lost, and this coincides with an exceptionally high energy demand day, there would be difficulty in meeting all gas demand.

The Regulator for Energy and Water Services (REWS) will work closely with Electricity Generation Operators and the Gas Facility Operator to monitor and forecast demand and potential issues. The Competent Authority will work with key actors to respond as soon as possible to emerging issues in gas supply to prevent the loss of supply and minimise disruption. Whilst appropriate crisis management arrangements are in place between the energy sector stakeholders, better coordination with the bodies responsible for civil protection and national emergency contingency planning would enable a more effective response in a crisis situation. Malta will respond to crisis situations with appropriate market and non-market-based measures both to decrease gas demand and to increase gas supply. In order to achieve this, Malta could require the cooperation of its European neighbours to support the supply of 'top-up' deliveries of gas to the LNG facility.

Malta does not have "protected customers" or "solidarity protected customers" within the Regulation's definition, however due to the island's dependence on gas for electricity production the Competent Authority, the Regulator and the Distribution System Operator are in the process of implementing a framework for the protection of critical sites and vulnerable groups of electricity

customers. This will be the basis for prioritisation of customers' electricity supply in the event of a disruption, including one caused by a disruption to the supply of gas.

It is not practical for Malta to conduct full, real-time simulations of crisis events. The lack of a failsafe mechanism and the singular nature of the gas infrastructure means removing the gas facility for an emergency test involves high risk exposure. However, periodic tests, jointly addressing gas and electricity emergency testing are undertaken that combine desktop scenarios and on-facility emergency responses. Information on emergency tests undertaken by gas and electricity operators, as well as a schedule of planned emergency tests and scenarios simulated is included.

Introduction

In line with Article 3 of Regulation (EU) 2017/1938 (Gas Security of Supply Regulation), each Member State is required to designate a Competent Authority responsible for the implementation of the Regulation. The designated Competent Authority in Malta is the **Ministry responsible for Energy** which was formally designated through Legal Notice 69 of 2021. In line with the aforementioned Article of the Regulation and point 4 of the Legal Notice, the Competent Authority is empowered to delegate specific tasks set out in the Regulation to other bodies.¹

In view of this, the task of developing the Risk Assessment, the Preventive Action Plan and the Emergency Plan was designated to the Energy & Water Agency (EWA), the technical and policy arm of the Ministry. To support the task of developing the three original documents in line with the requirements of the Regulation, Ainsty Risk Consulting Ltd has been commissioned on behalf of the Competent Authority. The 2022 update of the Emergency Plan in line with the Council Regulation on coordinated demand reduction measures for gas was carried out by EWA in coordination with the Ministry and Enemalta, the electricity DSO (the designated lead in developing Malta's Electricity Risk Preparedness Plan).

Article 7 (3) of the Regulation requires that each Member State prepares a **National Risk Assessment** of all relevant risks affecting the security of gas supply. Malta's National Risk Assessment was completed and submitted to the European Commission in December 2018. Malta's National Risk Assessment includes an analysis of the infrastructure standard and the calculation of the N-1 formula in line with Article 5(1) of the Regulation. The National Risk Assessment is fully consistent with the assumptions and results of the common risk assessments of the Libyan and Algerian risk groups, to which Malta is a member. The common risk assessments of the relevant risk groups have also been submitted to the European Commission in line with the requirements of the Regulation. Common Risk Assessments are being updated by all Risk Groups to take into account the latest energy crisis and the scenarios of a full Russian gas disruption. Both the preliminary results of the Algerian and Libyan Risk Groups confirmed that due to the nature of Malta's energy system, e.g. absence of a gas connection to the internal gas market and the fact that Malta does not import any Russian gas, there is no envisaged gas curtailment or unserved gas demand registered for Malta in the simulations. In the case of both Risk Groups, due to lack of interconnection and reliance on LNG, Malta was not explicitly modelled.

¹ Available online: <https://legislation.mt/eli/ln/2021/69/eng>

Article 8(2) of the Regulation requires that the Competent Authority of each Member State establishes a **Preventive Action Plan** containing the measures needed to remove and mitigate the risks identified in the risk assessment in accordance with Article 9 and the template in Annex VI and an **Emergency Plan** containing the measures to be taken to remove or mitigate the impact of a disruption of gas supply in accordance with Article 10 and template in Annex VII. It is therefore recommended that the Emergency Plan is read in conjunction with Malta's Preventive Action Plan. It is to be noted that the update of Malta's Preventive Action Plan will be carried out in 2023 in line with the requirements of the Gas Security of Supply Regulation, whereby this Emergency Plan has been updated to ensure preparedness for the winter of 2022/2023 and a possible Russian gas disruption, in line with Council Regulation (EU) 2022/1369 on coordinated gas demand reduction.

(1) Definition of Crisis Levels

- a) The body responsible for declaring gas supply crisis level for Malta is the crisis manager as appointed by Ministry responsible for energy, the Competent Authority. The gas security of supply crisis manager for Malta is the Permanent Secretary of the Ministry responsible for energy.
- b) Indicators, outlined in the table below, are considered by the crisis team manager when assessing whether an event may result in a deterioration of gas (or electricity) supply. Crisis levels and associated indicators and decision parameters are applied equally to all electricity, gas and other energy supply-related crisis events. Given the interlinkages between gas and electricity in Malta, a unified approach is applied whereby crisis levels reflect both the Gas Security of Supply and Electricity Risk Preparedness Regulations. Specific parameters are then applied to determine the crisis level that shall be declared.

Crisis Level	Description (Article 11)	Indicators	Decision Parameters
No Crisis	Business as usual. Supply, demand and storage of LNG and gasoil all operating within acceptable / tolerable range and electricity sub-sea link available.	No changes outside tolerance to LNG supply, forecast LNG stock, electricity supply capacity, forecast electricity demand or sub-sea link capacity/availability.	Monitor planned LNG deliveries or stocks, availability and capabilities of generation plants and sub-sea link.
Early Warning	Concrete, serious and reliable information that an event which is likely to result in significant deterioration of the gas or electricity supply situation may occur and is likely to lead to the alert or the emergency level being triggered.	A likelihood of potential disruption to future supplies of LNG or for demand for gas. Short-term tripping of the electricity distribution features. Cyber threat level increased.	Requirement for alternative market-based measures from usual business practices to re-dress the potential disruption of gas supplies or electricity supply necessary to meet forecast demand.

Crisis Level	Description (Article 11)	Indicators	Decision Parameters
Alert	Disruption of gas supply or exceptionally high gas or electricity demand which results in significant deterioration of the gas or electricity supply situation occurs, but the market is still able to manage that disruption or demand without the need to resort to non-market-based measures.	Likely specific disruption to LNG supplies, LNG stocks, electricity sub-sea link, gas-oil generation or PV available capacity, or an increase forecast demand for electricity. Repeated unsolved electrical distribution faults. Cyber-attack deemed likely.	Urgent requirement for alternative market-based measures to re-dress the potential disruption of gas and electricity supplies necessary to meet forecast demand.
Emergency	Exceptionally high gas or electricity demand, significant disruption of gas supply or other significant deterioration of the gas or electricity supply situation. All relevant market-based measures have been implemented but the gas or electricity supply is insufficient to meet demand. All available non-market-based measures must be introduced to safeguard electricity supplied to protected customers.	Actual disruption (physical and/or cyber) to electricity sources, natural gas production, LNG supply, electricity supply, grid stability or restrictions on system/control and dispatch capability. Significant electricity supply disruption.	Requirement for non-market-based measures. Market based measures no longer sufficient. Start limiting electricity supplies to non-priority customers only. Requesting co-operation and support from other Member States needs to be considered.

(2) Measures to be adopted per Crisis Level

Malta uses natural gas exclusively for electricity production. Consequently, all measures to be adopted in response to entering each crisis level are dependent primarily on measures related to the production and use of electricity. Because of the specific characteristics and set-up of Malta's gas system and the spill-over effects on electricity generation, the escalation and de-escalation criteria and actions required at each crisis level are described in more detail in Section 3 of this Emergency Plan titled '*Specific measures for Electricity Production*'.

Article 10 of the Gas Security of Supply Regulation requires that the Emergency Plan outlines the possible actions that may be taken at each threshold between the crisis levels. The thresholds (e.g. escalation criteria and actions), which are reflected in Section 3, were developed to take into account recital 33 of the Regulation which states that "*... market players should be given sufficient opportunity to respond to the situation with market-based measures. Where market-based measures have been exhausted and they are still insufficient, Member States and their Competent Authorities should take measures to remove or mitigate the effects of a disruption of gas supply*".

Article 10(1)(h) then further requires that the Emergency Plan "*identifies the contribution of market-based measures for coping with the situation at alert level and mitigating the situation at emergency level.*" It's important to note that there is no gas market in Malta. Currently there is only one wholesale gas customer who purchases natural gas for electricity generation and resells part of the gas capacity directly to another electricity producer located within the Delimara Power Station in line with the gas supply agreement described in Section 8 of the Preventive Action Plan. Given the absence of a market for natural gas, the options of introducing any market-based measures to cope with the situation at alert level and to mitigate the situation at emergency level are therefore limited.

Article 10(1)(i) requires that the Emergency Plan "*...identifies the contribution of non-market-based measures planned or to be implemented for the emergency level, and assess the degree to which the use of such non-market-based measures is necessary to cope with a crisis.*" As explained above, given the limited market-based options to curb a potential gas security of supply crisis due to the absence of a gas market, all measures identified in the Emergency Plan are essentially 'non-market-based', in particular at the emergency level. Nevertheless, where practical, measures for coping with the situation at alert level and mitigating the situation at emergency level utilize existing contracts and structures in place to maximise effectiveness and minimise disruption to pre-existing negotiated agreements and thus ensure the availability of natural gas for electricity production. In the specific case of Malta, the necessity of deployment of non-market based measures, such as fuel switching from natural gas to gasoil, during the emergency level is considered vital to be able to cope with a potential crisis. The measures to be deployed, and their scope, shall be assessed on a case-by-case basis by the Crisis Manager, the Competent Authority and all the involved stakeholders depending on the severity and cause of the crisis.

From the perspective of ensuring the availability of gas, the measures which are being introduced at alert and emergency level primarily take advantage of the pre-existing contractual arrangements for the procurement of LNG. Measures to be adopted per crisis level, which are also included in the table under Section 3 of this plan, are outlined in Figure 1 below.

Figure 1 - Measures to be deployed during a gas security of supply crisis

Early warning	Alert	Emergency
<ul style="list-style-type: none"> • Explore possibility of bringing forward next planned LNG delivery; • Gas facility operator to monitor availability of interim/top-up delivery; • Monitor availability of alternative sources 	<ul style="list-style-type: none"> • Bring forward next LNG delivery within existing contractual arrangements; • Seek an interim top-up/delivery; • Monitor availability of alternative sources 	<ul style="list-style-type: none"> • Arrange an early delivery outside of existing contractual arrangements. Competent Authority may provide direct support or intervene if required; • Arrange an interim top-up/delivery; • Utilise all other electricity sources to reduce gas demand; • Enforce electricity demand reduction/load shedding;

2.1 Measures regarding the management of LNG deliveries

Under a business-as-usual /no crisis situation the planning and management of LNG deliveries is handled through the existing contractual arrangements between the electricity Distribution System Operator (DSO) and the natural gas undertaking, as well as between the natural gas undertaking and LNG supplier. The DSO has a long-term gas supply agreement in place ensuring long-term and secure supplies of LNG. This agreement expires in August 2026.

Each year the respective undertakings plan the LNG schedule for the following gas year, which starts on 1 October and ends 30 September of the following calendar year. The DSO submits to the gas facility operator a non-binding **Annual Forecast** covering each month during the upcoming Gas Year. The DSO shall in the Annual Forecast specify the amount of energy measured in MWh and the amount of gas measured in mmBTU which it shall respectively dispatch and nominate from Delimara 4 and the Gas Facilities to Delimara 3 during each month. The amounts of Energy and Gas specified in the Annual Forecast shall be equal to 14 million mmBTU, the minimum yearly contracted gas volumes as per the agreement. Subsequently, the gas facility operator provides Enemalta with a copy of its **Annual Delivery Plan** (ADP) that sets out the source of each cargo of LNG, the scheduled arrival window/arrival date of each cargo, the estimated quantity of LNG to be unloaded by each LNG cargo into the FSU, and the proposed LNG Ship.

The schedule and request for LNG deliveries is forecasted based on (i) the dates when the electricity DSO forecasts the FSU cargo to have decreased to a level that would allow the full delivery of planned LNG parcels, and (ii) the retainment of, at least, the contract stock requirement of 20,000m³ until the next cargo is delivered. The involved undertakings have the flexibility of moving the delivery date of each planned delivery within a 7-day window should this be required.

As per the gas supply contract, the contract stock requirement of 20,000m³ includes the gas volumes which are already in transit (cargo within 195hours of destination) less the minimum technical level of LNG to be stored in the FSU amounting to 6,250 m³. This means that in practice generally a few days before the actual delivery, the level of LNG in the FSU is allowed to fall below the operational minimum of 20,000 m³ established by Malta's Gas Emergency Plan. A level of LNG in the FSU below the operational minimum therefore does not necessarily warrant the triggering of an 'early warning' crisis level, as long as the contract stock requirement of 20,000m³ is maintained. Such situations will be assessed on a case-by-case basis by the Competent Authority based on the periodic reporting or when such a case arises.

Each month, the DSO provides the gas facility operator with a **Three-Month Ahead Forecast**, where the DSO specifies the amount of net electrical output in MWh and the amount of gas measures in mmBTU which it shall respectively dispatch and nominate from Delimara 4 and Gas Facilities to Delimara 3 during the next three months. Subsequently, each month the gas facility operator then provides the DSO with its **specific delivery schedule** in line with its LNG supply agreement for the subsequent three-month period. The specific delivery schedule sets out the source of each cargo of LNG, the scheduled arrival window/arrival date of each cargo, the estimated LNG quantities and the proposed LNG ship. The **Specific Delivery Schedule** (SDS) for the next three months is aligned with the annual program. The delivery date of planned LNG cargos in the 3-month schedule can be adjusted upon agreement with the LNG supplier. However, when the delivery date is within two months, the flexibility window for adjusting the delivery date is shortened to a few days.

The actual consumption is monitored on a daily basis to ensure its alignment with the delivery schedule and to allow enough room in the FSU to transfer the scheduled cargo on the agreed delivery date. This in turn ensures that any developing problems are detected well in advance. Any projected increased demand for gas expected by the parties can therefore be addressed by requesting additional deliveries in small quantities outside the contractually agreed window upon agreement with the LNG supplier. The measures described above would allow for a timely response addressing any expected LNG shortage, in particular under the early warning and alert crisis levels.

In a situation where a cargo ship would be unable to arrive on the scheduled date, leaving a gap of a whole delivery, it is the sole responsibility of the LNG supplier to get a replacement ship as soon as possible. Generally, a situation like this would imply the rerouting of a cargo destined for another terminal to Malta. Such a situation would be resolved within 2 weeks. LNG vessels delivering to Malta load on average 2 weeks before arriving to Malta. This window therefore gives the electricity and gas operators two weeks before the FSU reaches its operational minimum. Should there be a problem at loading of the vessel, the LNG supplier would have sufficient time to react before any changes in consumption have to be implemented by the DSO.

Malta's LNG facilities are approved for LNG deliveries by suppliers amounting to more than 50% of the world's LNG supply. Malta also has the geographical advantage of being in relatively close proximity to some of the major global LNG exporting countries, which under normal scenarios limits any risk in relation to finding a replacement LNG vessel. Malta's position on a major shipping route ensures that there should be ample opportunities to arrange a top-up or replacement LNG cargo before the FSU reaches its practical and technical minimum quantity of 6,250 m³, which is required to keep the tanks in a cold condition and ready for loading. Additionally, the Delimara terminal is designed in line with international standards to ensure that as many vessels as possible are suitable to berth and supply LNG to Malta.

Under the Emergency crisis level, the parties involved would arrange an LNG delivery outside of the existing contractual arrangements described above. Should it be necessary, the Competent Authority would be in a position to provide support as deemed fit, including by liaising with other Member States in the spirit of solidarity.

2.2 Using alternative electricity sources

Should there be a situation which leads to a gas supply shortage or unavailability, Malta would be required to switch to alternative electricity sources. A disruption to the supply of LNG or natural gas would be mitigated by:

- Maximising the use of the electricity interconnector with Italy;
- Maximising other forms of on-island generation and/or;
- Reducing demand for electricity;

Enemalta has the ability to operate emergency plants fuelled by gasoil, however gasoil-fired power plants only partially cover the total electricity demand of the Maltese islands. Gasoil would be used as a secondary source of fuel by the back-up power plant Delimara 2 (D2), diesel-powered open cycle gas turbine at Marsa, and by the four dual-fuel diesel engines at Delimara 3 (D3). Malta has a total of 216MW (operational) emergency back-up generation capacity, including the four dual-fuel engines at Delimara 3. Available on-island diesel storage tanks provide adequate capacity to ensure approximately 28 days-worth of supply. Due to technical barriers restricting their maximum number of running hours, gasoil-fired emergency plants can only be used in case of an emergency and are not in a state to fully replace gas-fired power plants in the event of an energy crisis or to fulfil obligations for voluntary gas demand reductions.

Additionally, in case of gas disruption Malta will be forced to rely on the 200MW electricity interconnector with Sicily to ensure that electricity demand is met. Although Malta is not connected to the trans-European gas network, it may be indirectly affected by a disruption of gas supply in Europe (such as a full Russian gas disruption) should this disruption result in the curtailment of electricity imports from Italy. On average, Malta imports approximately 1,770MWh of electricity per day from Italy. The Government, through Enemalta, implements an N-1 security of supply principle, which requires that even when losing the largest piece of power generation infrastructure (e.g. interconnector or gas facility) the system needs to be sufficiently resilient to meet maximum electricity demand. Nevertheless, taking into account the currently available generation capacity, if electricity imports from Italy were to be fully curtailed (for example as a result of a gas disruption affecting Italy), Enemalta would face challenges meeting the summer and winter evening peak demand. In view of this, guaranteeing the availability of flows via the electricity link with Italy is considered critical for ensuring the security of electricity supply in Malta.

Due to the expected increase in Malta's population, labour force and tourism, which is expected to drive energy demand even higher in the coming years, over the course of 2020 and 2021 the Government conducted an electricity supply study with the aim to study and present cost-optimal solutions to meet the expected growth in electricity demand and tackle any projected shortfalls by 2035. Based on the study a decision was taken by Government to invest in a second electricity sub-sea link with Italy by late 2025 or early 2026. This project would contribute to long-term security of supply as well as allow for the integration of a higher share of renewable energy, thus decreasing Malta's reliance on fossil fuels.

Given the specific set-up of Malta’s gas and electricity system and its interlinkages, a situation leading to the prolonged unavailability of the electricity interconnector may also lead to triggering of one of the crisis levels due to additional pressure on gas-fired power plants to meet energy demand.

It is also worth noting that short-term loss of certain specified infrastructure assets, in particular if these disruptions coincide with other infrastructure unavailability or periods of high demand, may also be considered an emergency. These emergency scenarios include:

- Loss of four or more D3 engines plus the interconnector - this would have an impact on grid balancing capabilities in terms of frequency and voltage and place additional strain on the ability of the remaining power generation infrastructure to meet operational requirements;
- Loss of Gas Facilities (FSU, jetty and regasification plant) plus the interconnector –the gas-oil fired infrastructure would be unable to meet peak demand;

More details on Malta’s gas system and the calculation of the infrastructure standard (N-1) can be found in sections 1 and 2 of the Preventive Action Plan.

2.3 Enforced electricity demand reduction and load shedding

In the case of a prolonged gas supply shortage affecting Malta, electricity rationing may be necessary, restricting the consumption of certain electricity customers.

When the Maltese electricity distribution system operator, Enemalta p.l.c., needs to act to decrease electricity consumption, the only option beyond voluntary constraint requires automatic and manual reductions in demand, i.e. load shedding. Manual load shedding is implemented when available supply (on-island generation and PV and sub-sea connector flow from Sicily) is insufficient to meet demand.

Load restrictions over the longer term can be achieved by one or more of the following methods:

- Public appeals by the Maltese Government for voluntary restraint.
- Orders or directions under the Civil Protection Act requiring restrictions on consumption by industry, commerce, and other undertakings.
- Directions under the Enemalta Act (Act No. XXXIV of 2014, as amended)

To support both the electricity risk preparedness plan and gas security of supply preventive action plan and emergency plans, the arrangements necessary to support effective and equitable manual load shedding shall be formalised in three key steps: establishing a list of protected sites, identifying vulnerable electricity customers, and formalising a rota disconnection process.

Establishing a list of protected sites	Identification of vulnerable electricity customers	Formalising a rota disconnection process
<ul style="list-style-type: none"> • Sites dependent on continuous electricity supply and providing essential services are identified and protected from supply disruption; 	<ul style="list-style-type: none"> • Provisions are made to identify and protect vulnerable electricity customers; • Individual consumers where the continued supply is critical to their well-being 	<ul style="list-style-type: none"> • A Rota Disconnection Plan is formalized to ensure supplies of electricity are shared as equitably as possible between areas

2.3.1 Protected Sites

In practice, load shedding is principally set in the following order:

- Commercial
- Residential
- Industrial
- Critical infrastructure

Sites are classified as prioritised if they require electricity supply maintained to provide services which are in accordance with the following criteria:

- Support national or regional critical needs.
- Provide for public health and safety; or
- If the loss of electricity supply has the potential to result in catastrophic damage to nationally strategic or high value plant.

Critical sites which shall be protected from an electricity supply disruption can be broadly grouped, but not limited to the main categories of sites listed below. The groups are also broadly aligned to the list of critical infrastructures held by the Critical Infrastructure Protection Department (CIPD).

Groups of facilities providing the designated service
1) LNG reception terminal, storage and regasification facilities
2) Electricity Generators and Distribution and System Operator facilities
3) Oil reception terminals, storage facilities and pumping stations
4) Major ports, harbours, airports and associated control facilities
5) Essential water and sewerage installations and facilities
6) Hospitals and critical health related facilities
7) Digital and telecommunication facilities (where there is a national need for continued operation)
8) Emergency Services and Armed Forces of Malta sites and facilities that provide civil protection support
9) National Emergency Control Room

Note: List does not indicate order of priority.

Mater Dei Hospital, Gozo Hospital, and all Reverse Osmosis (RO) plants are prioritized. Typical examples of industrial consumers deemed to be of high priority include the Malta Freeport and ST Microelectronics. At present, no national process is in effect for critical infrastructure or consumers to systematically curtail their load during an emergency; such curtailment is undertaken on an *ad hoc* basis. It has to be appreciated that, due to the nature of the Maltese electricity network, load shedding is inherently indiscriminate, except for the critical/important consumers indicated above. As part of the ongoing Business Continuity Management Programme, Enemalta plans to generate and list individual site details relevant to protected sites.

Prioritised operators shall be required to establish and maintain appropriate **business continuity arrangements** that support their ability to maintain an adequate supply of services in the event of an

electricity crisis. Sites included in the list shall be required to make adequate provision to be able to reduce their load on request of Enemalta in the event of an electricity crisis. If the situation deteriorates and the risk of shortfall of supply to these users is imminent, priority will be given to preventing loss of life and to minimising the risk of disaster that could involve loss of life or major damage. This approach is also recommended by the European Commission in the Art. 15 Risk Preparedness Regulation Guidance document and should be followed by entities in Malta when establishing the list of designated sites and prioritising between them.

2.3.2 Rota Disconnections (Manual load shedding)

There shall be a Rota Disconnection Plan (RDP), produced and maintained by the distribution system operator, and approved by Government. This shall ensure the stability of the electrical distribution grid, and that the available supplies of electricity in an (electricity supply) emergency are shared as equitably as possible amongst all non-prioritised sites, whilst considering the need for the protection and prioritisation of designated sites. The RDP will establish the time blocks and zonal pattern to be adopted should demand reduction through rota disconnections become necessary.

2.3.3 Priority services register (PRS)

A PSR shall be developed to identify and protect vulnerable electricity customers. Provisions shall be made to ensure that vulnerable electricity customers can be identified and protected during an energy supply crisis. This process shall require the co-operation of several public and private sector bodies principally in health and social care. This should include all electricity consumers for whom the continued supply is critical to their continued well-being and shall include:

- Disabled or chronically sick persons, or persons having a long-term medical condition, hearing or visual impairment or have additional communication needs,
- Persons of pensionable age,
- Persons otherwise in a vulnerable situation due to dependency on a continuous electricity supply.

The distribution system operator shall support the protection of vulnerable electricity consumers by providing advance notices of planned power cuts or rota disconnections, and information on alternative energy supplies during emergencies.

2.3.4 Automatic load shedding

An Automatic Load Shedding Programme would kick in before manual load shedding is triggered. The distribution and network system operator, Enemalta, have implemented 3 automatic load shedding systems, which are used in emergency situations. The load shedding systems operated by Enemalta are the following, each used in a specific type of emergency or crisis:

1. Fast Load Shedding;
2. Supervisory control and data acquisition (SCADA) control system enabled Load Shedding;
3. System under-frequency Load shedding;

The Fast Load Shedding system automatically sheds an amount of load equivalent to the prevailing sub-sea connector import following its loss. It also handles load shedding when Delimara 4 power plant and the sub-sea connector are not in operation concurrently. The SCADA load shedding system protects against overloading of the sub-sea connector and against excessively large step changes in power imported over the sub-sea connector. The under-frequency shedding system is used to restore power system frequency stability in situations where the frequency drops during a major disturbance such as loss of generation.

2.3.5 Mechanisms to inform the public about an energy crisis

Internal procedures determine how Enemalta communicates and manages communications with stakeholders in the event of a planned or unplanned power outage, including an Emergency Communications Plan. The DSO works closely with the Competent Authority to implement the planned communication strategy for network outages in the event of an electricity supply crisis event.

The Emergency Communications Plan details how information will be disseminated to customers and other stakeholders. It provides examples of communications Enemalta will use to make sure a timely message reaches each audience.

Enemalta provides a free service including e-mail/SMS notifications regarding planned outages, including upcoming scheduled network maintenance and upgrades which may lead to planned power cuts².

² Available online: <https://www.enemalta.com.mt/planned-power-cuts/>.

2.4 Gas Demand Reduction measures

Council Regulation (EU) 2022/1369 on coordinated demand reduction measures for gas entered into force on 5 August 2022. Article 7(2) of the Council Regulation obliges Member States to update their gas Emergency Plans to reflect the voluntary gas demand reductions measures for the winter period from 1 August 2022 until 31 March 2023 and provide a description of measures to be implemented to achieve this reduction. Gas demand shall be reduced by at least 15% compared to the average gas consumption between the same period during the preceding 5 years.

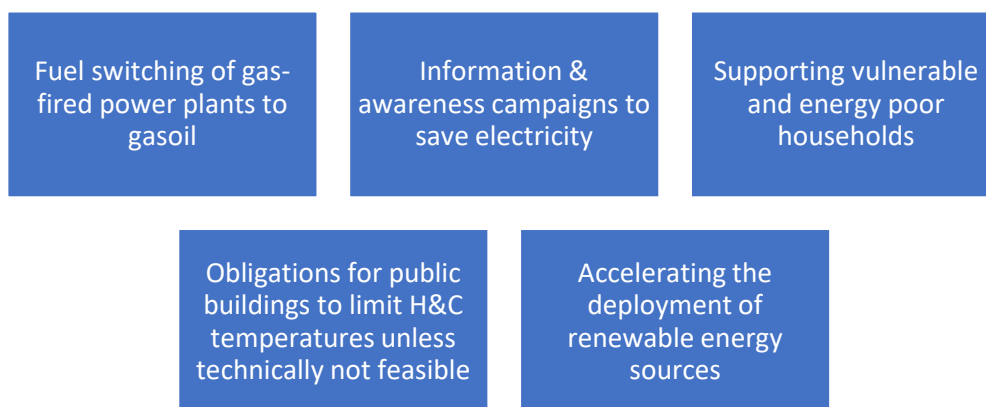
Due to the nature of its energy system and its isolated position, Malta cannot fully contribute to the goals of the Regulation and provide solidarity to other Member States during an emergency by supplying other Member States with natural gas. Malta only uses natural gas for its critical gas-fired power plants. Natural gas is imported as LNG via sea vessels (normally sourced from North and Central America) and stored in a floating storage unit (FSU) which is permanently moored next to the power plants and processed at an adjacent re-gasification facility. There is no gas market in Malta as there are no gas distribution networks and no end-users of natural gas. Since Malta is not connected to the trans-European Gas network or any other third network, with just-in-time deliveries of LNG shipments for exclusive use by power plants, Malta does not have any means to provide any significant contribution to the reduction of gas demand in Europe. In fact, recital 15 of Council Regulation (EU) 2022/1369 notes that certain Member States, due to their lack of direct interconnection to the gas interconnected system of another Member State, not able to free up significant volumes of pipeline gas to the benefit of other Member States.

Moreover, a reduction of the critical gas volumes which are used for electricity production in Malta would pronounce Malta's reliance on electricity imports via the sub-sea electricity link with Italy and could ultimately lead to an increase of gas demand in Italy. This would have the opposite effect to what is desired and intended by the Council Regulation.

Malta's situation is acknowledged in Article 5(4) of the Council Regulation, whereby those Member States which are not directly interconnected to a gas interconnected system of any other Member State shall be exempted from applying the mandatory gas demand reduction in case a Union alert is triggered.

Malta is nevertheless committed and doing its utmost to utilise existing and implement new measures focusing on the reduction of electricity, and therefore natural gas, consumption in Malta and ensure the capability of the electricity system to switch to alternative sources, such as gasoil in case an EU alert is triggered in line with the gas demand reduction Regulation. In the spirit of solidarity, Malta has also made its best efforts in line with Article 3 of the Council Regulation on voluntary gas demand reduction by introducing additional measures focusing on the reduction of electricity (and therefore natural gas) consumption.

The European Commission Communication on "*Save gas for a safe winter*" as well as the accompanying Annex provide a guidance to Member States on the possible gas demand reduction measures which Member States may decide to implement. Since Malta does not have a gas market, the majority of these measures are not applicable. An overview of those measures from the Communication which are of relevance to Malta is provided below:



The sections below provide more details on measures implemented in Malta to ensure the objectives of gas demand reduction.

2.4.1 Fuel switching of gas-fired power plants to gasoil

As already described in Section 2.2 Using alternative electricity sources, all gas-fired power plants in Malta are considered critical. Gas supply is covered by a take-or-pay long-term gas supply contract and therefore reducing gas for electricity production is, in practice, unfeasible in the short to medium term. During emergencies, for a limited period of time, Malta already has the capability to run gasoil-fired power plants. It is to be noted that gasoil-fired emergency plants can only be used in case of an emergency and due to technical constraints and limited capacity, cannot fully replace gas-fired power plants in the event of a long-term gas disruption affecting the European market or for the purposes of reaching the voluntary gas demand reductions in line with the Council Regulation.

2.4.2 Existing measures focusing on the reduction of electricity consumption

Malta implements a number of measures which help with **reducing the consumption of electricity** amongst its citizens and businesses in the various sectors. The most notable one being the eco-reduction scheme and the rising block tariff in the residential sector. Under the eco-reduction, households consuming either: (i) less than 2,000 kWh of electricity per year in a single household; or (ii) less than 1,750 kWh per person in a two or more-person household, receive a direct rebate of 15-25% on their electricity bills. This policy incentivises efficiency and lower consumption, while also having a positive effect on the electricity bills of low-income households who fall within the consumption limit. In addition, the electricity tariff in Malta adopts a rising block structure to incentivise energy efficiency by applying higher tariffs as consumption increases whilst ensuring that industries having a significant consumption by virtue of their operations remain competitive. The Ministry responsible for Energy, launched the 2nd Edition of the nation-wide public awareness campaign “#ClimateOn” targeting behavioural change to reduce energy consumption and GHG emissions. The campaign aims at changing the general public’s habits towards a more sustainable way of life. It aims at instilling thoughts for solutions and highlight the benefits of a low-carbon society. The objective of the Campaign is to turn on action to find practical solutions to address climate change.

Malta also incentivises the installation of Solar Water Heaters and Heat Pump water heaters in the residential sector reducing the amount of electricity needed to heat water. The Energy Audit scheme and The Energy Efficiency scheme for Industry are also important measures which help with reducing

electricity consumption. Cost efficient measures identified through an energy audit can benefit from a grant under the Energy Efficiency Scheme for Industry. Through this scheme, a cash grant or tax credit (which can be utilised against tax payable by the beneficiary) is available to businesses that:

- Invest in the substitution or upgrading of equipment to reduce energy consumption.
- Renovate or upgrade existing installations for heating or cooling systems.
- Improve the energy efficiency of existing illumination systems.

For businesses to become eligible, it must entail an investment of at least €25,000 that is directly related to achieving energy savings.

The Energy & Water Agency (EWA) provides free on-going professional advice to households on energy efficient appliances and behaviour. This measure provides guidance to residential consumers to lower their energy and water utility bills through the implementation of small actions. For vulnerable households/energy poor, this is complemented by a financial scheme designed to replace old and inefficient household appliances, such as fridge-freezers, washing machines and air conditioning units, with new energy-efficient models. EWA is extending its free house visits services to also include micro-SMEs. EWA manages an online portal³ to provide interactive energy and water saving tips to the general public.

Malta also continues to sustain its efforts in ensuring a shift towards cleaner energy through the promotion of **renewable energy sources**, which is recognized as the primary long-term solution to reduce Malta's heavy reliance on fossil fuel imports. Apart from the Solar Water Heater (SWH) and Heat Pump Water Heater (HPWH) schemes mentioned above, there are currently a number of schemes to promote the installation of photovoltaic installations. These include grants for small scale PVs installed in households, which can also benefit from a grant towards the addition of battery storage, as well as feed-in premium for medium and large-scale renewable electricity installations which is awarded through a competitive bidding process.

Furthermore, EWA administers a scheme to promote the installation of PVs on public buildings. Eligible costs under the scheme cover the design, supply, installation and commissioning of PV panels on public buildings. This initiative has an allocated budget of two hundred and fifty thousand euro (€250,000). The Energy & Water Agency (EWA) is the entity responsible for accepting expressions of interest (Eoi) from Government Ministries, Departments, and other public entities operating from Government owned buildings for the installation of PV panels. In the medium to long term, Malta seeks to develop its offshore renewable potential. This is becoming possible as new technology permits the deployment of floating offshore wind turbines in deep seas.

2.4.3 New measures and actions for voluntary gas demand reduction

As mentioned, although not being able to fully contribute to the goals of the Regulation and benefitting from a derogation from mandatory demand reduction on the basis of not being connected to the trans-European gas network, in the spirit of solidarity, Malta is nevertheless committed to implement additional measures focusing on energy demand reduction.

For this purpose, in August 2022 the Government issued **guidelines on efficient energy use** to be followed by all public buildings and public open spaces. These guidelines focus on heating, cooling,

³ <https://energyefficiencymalta.com/>.

lighting and efficient use of appliances with the aim of achieving energy savings. By following these guidelines, the public sector is showing its commitment to lead by example. Directors for Corporate Services (DCSs) in Malta, as the responsible officers for the implementation of sustainability measures within the public service, are responsible for promoting these energy savings guidelines amongst all employees in the public sector and shall ensure that senior management of the different departments and entities fully understand the role they play in this initiative. The implementation of some of the measures listed in the guidelines require a transitory period, particularly where modifications to electrical installations are necessary. The specific guidelines are further described in *Annex B: Guidelines on Efficient Energy Use*.

In October 2022, Malta launched a public awareness campaign focusing on inducing energy saving behaviour in the residential sector. This consisted of a three-month campaign aimed at raising awareness among the public to conserve energy through small and easy changes in everyday life. The campaign used tools such as an interactive website, printed and online booklets, advertising via social media and digital platforms focusing on different energy savings tips.

(3) Specific measures for Electricity Production

There is no gas distribution network or district heating in Malta and no end-use gas customers apart from the power station. This section therefore only considers the measures specific to electricity production in case of disruption or potential disruption to the supply of natural gas to Malta. Malta applies a single hierarchy and description for all energy supply crisis levels. These levels, and the associated indicators and decision parameters are applied equally to all electricity and gas related crisis events and feature also in Malta’s Electricity Risk Preparedness Plan developed in line with Regulation (EU) 2019/941.

All decisions regarding crisis levels are based on the next delivery due at the point of consideration. According to the electricity DSO, it is not possible to make reasonable assumptions about LNG stock levels any further in the future than this.

CRISIS LEVEL	ESCALATION CRITERIA ⁴	DE-ESCALATION CRITERIA	ACTION (additional actions per level)
No Crisis	<ul style="list-style-type: none"> • Indicators of 132 or 33kV grid instability? <p>OR</p> <ul style="list-style-type: none"> • Based on the forecast rate of use, would forecast stock drop below Operational Minimum before next planned delivery? If yes, “Early Warning”. <p>OR</p> <ul style="list-style-type: none"> • Is there serious potential for withdrawal of significant interconnector capacity or on-island generation capacity? If yes, “Early warning”. 	<ul style="list-style-type: none"> • Is 132 and 33kV grid stable and in tolerance? <p>AND</p> <ul style="list-style-type: none"> • Based on the forecast rate of use, would forecast stock drop below Operational Minimum before next planned delivery? If no, “No Crisis”. <p>AND</p> <ul style="list-style-type: none"> • Is there serious potential for withdrawal of significant interconnector capacity or on-island generation capacity? If no, “No Crisis”. 	<p>“Business as Usual”:</p> <ul style="list-style-type: none"> • Monitor forecast and actual electricity demand and gas use rates • Monitor FSU stock levels and LNG forecast deliveries • Monitor forecast and actual capacity of on-island generation and sub-sea interconnector • Grid frequency & voltage within normal operational tolerances
Early Warning		<ul style="list-style-type: none"> • 	

⁴ The operational minimum stock is set at 20,000 m³. This includes the volumes which are already in transit and within 195hrs of scheduled delivery.

	<ul style="list-style-type: none"> • Are significant parts of the 132kV network operating with imminent risk of tripping and prolonged recovery time? <p>OR</p> <ul style="list-style-type: none"> • With current forecast rate of use, would forecast stock drop below Op MIN in the next 5-15 days? if yes, "Alert". <p>OR</p> <ul style="list-style-type: none"> • Is gas facility operational on restricted (<50%) availability? If yes, "Alert". <p>OR</p> <ul style="list-style-type: none"> • Is interconnector or on-island generation availability restricted, (<50%)? If yes, "Alert". 	<ul style="list-style-type: none"> • Is 132 kV grid operating normally? <p>AND</p> <ul style="list-style-type: none"> • With current LNG in FSU & forecast rate of use, would forecast stock drop below Op MIN in the next 5-15 days? If no, de-escalate warning level. <p>AND</p> <ul style="list-style-type: none"> • Is gas facility operational on restricted (<50%) availability? If no, de-escalate warning level. <p>AND</p> <ul style="list-style-type: none"> • Is interconnector or on-island generation availability restricted, (<50%). If no, de-escalate warning level. 	<p>Seek to monitor likelihood of significant deterioration to Alert or Emergency levels:</p> <ul style="list-style-type: none"> • Gas facility operator monitor availability of interim/top up delivery • Validate interconnector availability • Validate spare part available for LNG transfers (N+1 capability on LNG transfer equip) • Explore possibility of bringing forward next LNG delivery
Alert	<ul style="list-style-type: none"> • Is there a significant and prolonged failure in capacity of 132 kV network resulting in forced and prolonged grid disconnections? <p>OR</p>	<ul style="list-style-type: none"> • Is 132 and 33kV available network capacity sufficient to meet all forecast demand for next 24-48 hrs? <p>AND</p>	<p>Continue recommended actions for Early Warning.</p> <p>Seek to resolve with market-based measures:</p> <ul style="list-style-type: none"> • Bring next LNG delivery forward within existing commercial arrangements • Seek interim/top up delivery

Emergency	<ul style="list-style-type: none"> • With current forecast rate of use, would forecast stock drop below Op MIN within the next 5 days? if yes, raise alert level to “Emergency”. OR • Is gas facility operational? If no, “Emergency”. <p>OR</p> <ul style="list-style-type: none"> • Is main on-island generation available? If no, “Emergency”. <p>OR</p> <ul style="list-style-type: none"> • Prolonged unavailability of the interconnector? If yes, “Emergency”. 	<ul style="list-style-type: none"> • With current forecast rate of use (electricity demand), would forecast stock drop below Op MIN within the next 5 days? if no, de-escalate warning levelAND • Is gas facility operational? If yes, de-escalate warning level. <p>AND</p> <ul style="list-style-type: none"> • Is interconnector available? If yes, de-escalate warning level. 	<p>Resolve by recommended and exceptional measures. This may include non-market-based measures⁵:</p> <ul style="list-style-type: none"> • direct support / intervention from the Competent Authority to arrange delivery outside of commercial arrangements • utilise future solidarity agreement for electricity agreed between Italy and Malta • utilise all electricity sources to reduce gas demand • enforce electricity demand reduction and load shedding.
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⁵ For a non-exhaustive list of non-market-based measures please refer to Annex VIII of the Security of Gas Supply Regulation (EU) 2017/1938

(4) Crisis Manager or Team

The Ministry responsible for Energy, which is currently the Ministry for Environment, Energy and Enterprise (MEEE), is the designated Competent Authority responsible for the implementation of the Gas Security of Supply Regulation in Malta. The Permanent Secretary of the Ministry responsible for Energy has the role of the 'Crisis Manager' during a disruption of gas supply and is responsible for the declaration of the three crisis levels.

The Regulation requires that complete and timely information is made available to Crisis Manager during business-as-usual and during a crisis situation. In view of this, gas facility operators and the electricity network operator (Enemalta) have the obligation of monitoring and assessing the gas security of supply situation and to ensure the periodic provision of data/information to the Regulator for Energy and Water Services (REWS). The provision of information includes the monitoring and forecasting of gas usage rates, FSU stock levels, planned LNG delivery dates and volumes and the availability of alternative electricity generation sources. To this effect Enemalta shall perform ongoing due diligence on its LNG supply value chain to ensure no disruption of supplies and alert the Crisis Manager, Competent Authority and REWS should this assessment lead to concerns which could have an impact on the security of gas supply. REWS is responsible for the analysis of the submitted information and for the presentation of periodic reports (minimum on a monthly basis) on the gas security of supply situation to the Crisis Manager and the Competent Authority. A monthly reporting and monitoring framework has been adopted and implemented in 2020 following the development and submission of Malta's first Preventive Action Plan and Emergency Plan. This framework is being updated to include additional information to provide the Regulator with a more comprehensive picture of the state of energy supply (LNG and electricity).

The report submitted by the Regulator will assist the Permanent Secretary of the Ministry responsible for Energy and the Ministry as the Competent Authority when evaluating the relevant risk factors and will support them in selecting the appropriate crisis level in line with the escalation (and de-escalation) criteria outlined in Section 3 of this plan and take the appropriate preventive and corrective actions. Accurate information flow and timely communication is integral to minimising harm in a crisis event and that there can be quick and enduring recovery from an energy supply crisis. Effective and timely communication between the government bodies involved, the gas and electricity facility operators, as well as first responders needs to be ensured.

The gas facility operators at the Delimara site are responsible for operational crisis management. The Delimara site has emergency plans independent of the National Gas Security of Supply Preventive Action Plan and Emergency Plan. Consequently, the operators at Delimara would be able to act independently to respond immediately to an operational incident (e.g. fire) before the Crisis Manager officially declares a crisis level.

Article 3 of the **Civil Protection Act**⁶ establishes that the **Civil Protection Department** (CPD) is responsible for providing first response during emergency situations. This includes providing first response should there be an emergency at the gas facilities within the Delimara site. As per the Act, the CPD is also responsible for the establishment of the infrastructural set-up required to ensure co-ordination between various departments of Government, local councils and non-governmental organisations which can be called upon to respond in a national or regional disaster or in an

⁶ Civil Protection Act (Chapter 411 of Laws of Malta):
<http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=8877&l=1>

emergency. Should a crisis event require the provision of immediate emergency response resources, the Civil Protection Department (CPD) shall be notified and advised of the situation. The CPD shall coordinate accordingly between Enemalta in its capacity as the DSO, the energy supply facilities operators, Government departments, local councils, and non-governmental organisations.

Article 5 of the **Civil Protection Act** establishes the **Civil Protection Council**, an official body appointed by the Prime Minister. The function of the Council includes the formulation, direction and co-ordination of all national policy issues and practices related to civil protection. If a crisis level is triggered by the Crisis Manager in the event of an electricity or gas disruption, coordination with the appropriate bodies responsible for civil protection would ensure coherence and flow of information in responding to an energy supply crisis.

The **Emergency Powers Act** assigns legal responsibility upon the President of Malta, in accordance with the advice of the Prime Minister, and if satisfied that a public emergency exists, to make regulations which are necessary or expedient for securing public safety and maintaining supplies and services. In a public emergency, this legal provision effectively places authority over the allocation and utilisation of electricity and gas resources with the President. During an emergency, the Crisis Manager will liaise with the CPD to determine whether to seek invocation of the Emergency Powers Act.

(5) Roles and Responsibilities of specific actors

As highlighted in the previous section, the Permanent Secretary of the Ministry responsible for energy acting in the role of the Crisis Manager will be responsible for the declaration of the three crisis levels. Table 1 provides an overview of the roles and responsibilities, as well as the information flow between the actors involved in the event of a declaration of one of the three crisis levels:

Table 1 – Overview of roles and responsibilities of actors during a crisis

Crisis Level	Overview of roles and responsibilities of actors involved
No Crisis	Business as usual. REWS is responsible for carrying out routine monitoring assessment and reporting of gas supply/demand/stock levels and forecast of use as per information provided by the gas facility operator and electricity system operator. REWS provides the Permanent Secretary of the Ministry responsible for energy (Crisis Manager) and the Competent Authority a monthly report of the gas security of supply situation.
Early Warning	Based on information and reports from the REWS, gas facility operator and electricity system operator, the Permanent Secretary of the Ministry responsible for energy will be responsible for evaluating the risk level and declaring an ‘early warning’ level if deemed necessary. The Crisis Manager and Competent Authority will keep bodies responsible for civil protection informed as appropriate. Gas facility operators and electricity system operator are responsible for maximising gas supplies while the Competent Authority supports undertakings in the management of the gas supply disruption and the management of consequences of such a disruption in view of returning back to business-as-usual. Once in ‘early warning’ the Crisis Manager and Competent Authority shall commence a daily monitoring of the situation and require REWS and operators to update information on a daily basis until such time when either the risk level subsides (leading to de-escalation of crisis level) or increases, in which case the Crisis Manager may decide to raise crisis level to “Alert” or “Emergency”.
Alert	Based on daily information made available by gas and electricity facility operators to REWS and consequently to the Crisis Manager and Competent Authority , will be responsible for assessing the situation and declaring an ‘alert’ level. The Competent Authority will keep bodies responsible for civil protection informed as appropriate. The Competent Authority will also continue to support undertakings in the management of the gas supply disruption in view of de-escalating the situation back to business-as-usual. The Crisis Manager and Competent Authority will continue to assess the situation on a daily basis and decide whether the risk level warrants either de-escalation or escalation of the crisis level.
Emergency	Based on information made available by the gas and electricity facility operators to REWS and subsequently to the Crisis Manager and Competent Authority, the Crisis Manager is responsible for triggering the ‘emergency’ level. The Civil Protection Department , the government body responsible for providing first response in emergency situations will be in close cooperation with gas and electricity facility operators, as required. The Competent Authority will continue supporting undertakings in the management of the gas supply disruption via the appropriate market and non-market based measures

	in view of de-escalating the situation. The Competent Authority will notify the Civil Protection Council of escalation into 'emergency' level if deemed appropriate.
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i) Competent Authority

Ministry responsible for Energy, currently the Ministry for Environment, Energy and Enterprise (MEEE)

- The Ministry responsible for Energy, is the Competent Authority and lead government body for the implementation of the Gas Security of Supply Regulation and the Electricity Risk Preparedness Regulation and the Permanent Secretary as the designated Crisis Manager has the responsibility for declaring the crisis levels described in Section 1 of the Plan.
- The Ministry responsible for Energy, and in particular the Permanent Secretary as the Crisis Manager, is responsible for assessing the situation and taking decisions on whether to maintain, escalate or de-escalate the situation.
- The Ministry responsible for Energy supports undertakings in the management of the gas and electricity supply disruption situation, including in the implementation of market and non-market based measures.
- The Ministry responsible for Energy ensures timely communication between Government bodies and external parties in a crisis situation with the assistance of relevant stakeholders within the Ministry and the energy operators.
- The Ministry responsible for energy assists undertakings in the management of consequences of a disruption of gas energy supply in view of de-escalating the situation back to business-as-usual.
- As the Competent Authority, the Ministry responsible for Energy with the input of all stakeholders informs the European Commission, the Gas Coordination Group (GCG) and the relevant Risk Groups (Libyan, Algerian), the Electricity Coordination Group (ECG) and its Member States that one of the three crisis levels has been triggered and provides updates to these parties on the escalation or de-escalation of the gas supply disruption situation. The Ministry responsible for Energy is responsible for providing the ECG/GCG with an ex-post evaluation report following the end of an electricity or gas crisis.
- The Ministry responsible for Energy is responsible for updating national gas and electricity supply scenarios at least every four years in line with the Gas Security of Supply and Electricity Risk Preparedness Regulations, respectively. The task of updating these scenarios can be delegated to other relevant stakeholders within the Ministry.

ii) Natural gas undertaking (as defined by point 1 of Article 2 of Directive 2009/73/EC)

ElectroGas Malta (LNG supplier, LNG facility operator and natural gas supplier)

- Responsible for provision of timely information and periodic reports on gas supply, demand and stock levels, including forecasts to the respective government bodies (REWS, CA, Crisis Manager).
- Responsible for the regular maintenance of its assets.

- Responsible for operational crisis management and ensuring capability to act independently to respond immediately to an operational incident (e.g. fire) before the event escalates into a crisis.
- Responsible for, if so directed, co-ordinating and enforcing gas facility emergency response arrangements.

iii) Relevant organisations representing the interests of households and National Regulatory Authority

REWS (Regulator for Energy and Water Services)

- Responsible for carrying out routine monitoring, assessment, and reporting of gas supply/demand/stock levels and forecast of use.
- Responsible for submission of periodic reports on the energy security of supply situation to the Crisis Manager and the Competent Authority. The availability of accurate and timely information is necessary to enable the Crisis Manager and Competent Authority to evaluate the situation and relevant risk factors.
- Responsible for supporting the Competent Authority and the Crisis Manager and provision of advice during the assessment of the gas and electricity security of supply situation.

iv) Relevant organisations representing the interests of industrial gas customers, including electricity producers

Enemalta plc (electricity distribution system operator, back-up generator, sole electricity supplier)

- Provision of complete and timely information to appropriate Government bodies, including the Competent Authority and the Regulator for Energy and Water Management. This includes short and long-term electricity demand forecasts, monitoring and forecasting natural gas use, LNG stock levels and deliveries, and the availability of electricity supply capacity. This information would include forecast of demand for electricity and capacity to meet that demand (via interconnector and on-island generation).
- Responsible for the development and implementation of co-ordinated Delimara site emergency response plans and response arrangements.
- Enemalta, in cooperation with gas facility operators and other stakeholders, shall establish the National Emergency Test Programme for Energy that meets the regulatory and legislative requirements for the electricity and gas sector for Malta.
- Responsible to alert Regulator, Crisis Manager and CA should any event take place which either jeopardises or could potentially place a risk on the gas or electricity supply of Malta. A report detailing the event characteristics, impact or potential impact and adopted mitigation measures is to be presented in the shortest time possible to the Regulator, Crisis Manager and CA.
- Responsible for operating and restoring the electricity system in case of an electricity crisis.

- Ensuring the enforcement of a formalised process for electricity grid disconnections in order to protect vulnerable groups of consumers, in particular in the event of an emergency.
- Responsible for the regular maintenance of its generation and distribution assets.
- Ensuring that the gas and other electricity facility operators carry out regular maintenance of its assets.
- Dispatching of electricity from national generation plants and the electricity sub-sea link with Sicily, based on their order of economic merit, technical capacity and existing contractual arrangements.
- Ensuring the availability of alternative back-up gas-oil generation as required, including appropriate fuel stock.
- Implementation of non-market-based measures in the event of an emergency, if required.
- Informing stakeholders and notifying all customers of any matter that causes danger or requires urgent attention in relation to the supply of electricity.
- Responsible for optimising the availability of natural gas during an energy crisis.
- Implementation of market-based and non-market-based measures as required.

D3 Power Generation Ltd (electricity producer)

- Make arrangements and seek permissions necessary to support alternative operational plant running regimes for D3PG in the case of early warning, alert or emergency crisis levels being declared.
- Responsible for operational crisis management and ensuring capability to act independently in the first instance in responding to an operational incident (e.g. fire) before the event escalated into a crisis.
- Responsible for the regular maintenance of all its assets.
- Electricity generators are responsible for maximising electricity supply and optimising plant availability and flexibility in an emergency, if directed.
- Make available alternative back-up gas-oil generation as required.
- Implementation of non-market-based measures in the event of an emergency, if directed by the Competent Authority.

v) Other stakeholders

Energy & Water Agency (technical and policy arm of the Ministry responsible for energy)

- The Agency formulates and implements national policies in the energy and water sectors, addressing security, sustainability and affordability of energy and water in Malta. EWA provides the technical resources that support the Ministry responsible for energy.
- As delegated by the CA, the Agency is responsible for carrying out specific tasks related to the implementation of the Gas Security of Supply Regulation, such as the development of Malta's Preventive Action and Emergency Plans.
- Upon request by the CA, the Agency provides technical and policy support in the assessment of the energy security of supply situation, both in business-as-usual and crisis situations.

Transport Malta (Transport Authority)

- Provides support to the CPD in the implementation of measures for the provision of tug services and capabilities to deal with emergencies at the LNG facility in terms of the Harbour Towage Agreement between TM and Tug Malta Ltd and also support to other gas and electricity facility operators.

Civil Protection Department (CPD)

- Article 3 of the Civil Protection Act⁷ establishes that the CPD is responsible for providing first response during emergency situations. This includes providing first response should there be an emergency at gas or electricity facilities.
- Responsible for providing appropriate level of response to disasters, as well as natural, industrial and other emergencies.
- Responsible for preparation of contingency plans to respond to a disaster as well as natural, industrial and other emergencies that may occur.
- Organisation and co-ordination of training facilities and courses for personnel that may be required in a national disaster or in an emergency.
- Establishment of the infrastructural set-up required to ensure the co-ordination between various departments of Government, local councils, non-governmental organisations which may be called upon to respond in a national disaster or in an emergency, including an electricity/gas supply crisis.
- In crisis situations, CPD will liaise with other emergency and security services (including the Police and AFM), emergency health services, other organisations involved in national emergency and disaster management, and the Government Contingency Centre. (Note: The Malta Police Force is responsible for ensuring internal security and preserving public order and peace)
- Support operators in the recovery process at Delimara site if necessary – determining when gas facility is ‘safe’ to be handed back to operator following an incident requiring CPD’s involvement.

Critical Infrastructure Protection Directorate (CIPD)

- CIPD within the Ministry for Home Affairs, Security, Reforms and Equality (MHSE) coordinates all critical infrastructure protection issues on a national level. CIPD coordinates stakeholders involved in managing Critical Infrastructures (CI), Critical Information Infrastructures (CII), Operators of Essential Services and Digital Service Providers.
- Provides early warnings/alerts and advice via its Computer Security Incident Response Team (CSIRT) concerning cyber-threats and incidents to operators of critical infrastructure, critical information infrastructure (including critical/essential entities within the energy sector) and to other sectors.
- Supports gas and electricity facilities in the implementation of cyber-security measures.

⁷ Civil Protection Act (Chapter 411 of Laws of Malta):

<http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=8877&l=1>

Environment and Resources Authority (ERA)

- The Authority provides written consent to operate within the Emergency considerations conditions identified in the IPPC permit (allowing, for a limited period of time during an emergency, higher emission levels).

President of Malta

- The Emergency Powers Act⁸ assigns legal responsibility upon the President of Malta, in accordance with the advice of the Prime Minister, and if satisfied that a public emergency exists, to make regulations which are necessary or expedient for securing public safety and maintaining supplies and services. In a public emergency, this legal provision effectively places authority over the allocation and utilisation of electricity and gas resources with the President.

⁸ The Emergency Power Act. Available online: <https://legislation.mt/eli/cap/178/eng/pdf>

(6) Measures regarding undue consumption by customers who are not protected customers

Within the definitions laid out in the Regulation, Malta has neither gas ‘Protected Customers’ nor ‘Solidarity Protected Customers’. This is because gas is used exclusively for electricity generation and there are no gas end-users in Malta. Malta does not have household customers, small/medium sized enterprises or essential services which are connected to a gas network or a gas district heating network. Additionally, Malta is not connected to the trans-European gas network and therefore has derogation from establishing solidarity arrangements with neighbouring Member States.

In Malta, the primary energy source for end-users is electricity. Natural Gas (imported via LNG terminal) forms the single largest component of the electricity generation mix. In order to mitigate a major social impact on vulnerable groups of customers from a disruption to the gas supply, it is necessary to ensure that electricity supply is not disrupted as a knock-on effect. As demonstrated in the Infrastructure Standard (Article 5) the ability to supply these customers electricity without gas included in the generation mix is insufficient to meet demand at peak periods.

In a business-as-usual situation, electricity is dispatched from local generation plants and the interconnector based on their order of economic merit, technical capacity and existing contractual arrangements. In the case of disruption to LNG supplies and the subsequent impact on on-island electricity production capability, electricity supplies shall be prioritised. Details on enforced electricity demand reduction and load shedding are described in section 2.3.1.

(7) Emergency tests

7.1 Major COMAH exercises

Enemalta, as the coordinator for the Delimara Power Station COMAH site, is responsible for the organisation of major COMAH exercises and drills involving all the relevant entities at the site (e.g. Enemalta, IESC, ElectroGas, D3PG). Major COMAH exercises are carried out every 2 years. The last two major COMAH emergency drills were carried out in July 2019 and July 2021. Details on these exercises in terms of simulated scenarios and stakeholders involved are provided in Table 2.

Table 2 - Recent major COMAH exercises at Delimara Power Station

Type of exercise	Major COMAH exercise	Major COMAH exercise
Date	July 2019	July 2021
Location	Delimara Power Station	Delimara Power Station
Scenarios simulated	Major incident (vehicle accident) drill at weighbridge/pipe crossing area	Major incident at Delimara Simulated incident spill/explosion in Diesel tank with casualties.
Description	COMAH & ISPS compliance. Testing of internal and external Emergency Response Plans (ERP).	COMAH & ISPS compliance. Testing of internal and external Emergency Response Plans (ERP).

Stakeholders involved	<i>Enemalta, IESC, D3, ElectroGas, CPD, Mater Dei Hospital, Police, OHSa (observer), ERA (observer)</i>	<i>Enemalta, IESC, D3, ElectroGas, CPD, Emergency Malta, Police, OHSa (observer), ERA (observer)</i>
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Generally, Enemalta also plan an additional 4 minor emergency and 4 minor security drills per year, however, no specific calendar with planned dates is maintained for such drills. Over the past two years (2021 and 2022) several minor exercises were carried out, such as the COMAH siren test, a number of fire drills, and weekly plant familiarisation visits with the Civil Protection Department, among others.

Enemalta, D3PG and IESC also share a common Emergency Response Team. This team performs weekly drills and training together with a professional trainer. CPD also join some of these training sessions to familiarise themselves with the plant equipment and provide guidance to the team

7.2 Emergency testing at gas facilities

Drills related specifically to gas facilities (Delimara 4, regasification plant, FSU) are coordinated and carried out by the gas facility operator ElectroGas as a COMAH establishment. Over the course of 2022 more than 100 individual drills were carried out cumulatively at the gas facilities. These drills simulated various types of emergency scenarios, which can generally be grouped into scenario types. These scenario types, as well as specific examples of drills carried out, are outlined in Table 3 below.

Table 3 - Types of scenarios and examples of drills carried out at gas facilities in 2022

Type of scenario	Non-exhaustive examples of drills
Environmental	Environmental spill; chemical spill; loss of cargo containment; Oil spill response level 2
Fire	Fire & abandon ship; firefighting pumps out of service during fire; vapor release;
Safety	FSU engine room flooding; vessel collision; medical injury or illness; site evacuation;
ISPS ⁹	Security breach; explosion;
First aid	Illness – accident emergency response drill
COMAH	Emergency Response Plan drill;

In April 2022, due to adverse weather conditions expected in Malta and after discussion between the FSU Master and terminal manager, it was decided to disconnect the FSU and move to storm mooring position. This was the second time, since the commissioning of the gas facilities in 2017, that the FSU was moved into storm mooring position. For two and a half days the FSO was on storm mooring till the storm passed, the FSU was reconnected with the jetty and gas send out was resumed. The total

⁹ *International Ship and Port Facility Security* - scenario specific to FSU.

reconnection process back to business-as-usual was carried out in less than 10 hours, thus confirming the technical and operational capability of a procedure which involves high risk exposure.

Planned testing schedule at gas facilities for 2023

The table hereunder provides a schedule of annual planned real-time response simulations of emergency situations at the regasification facility and the FSU. The FSU, regasification facility and D4 maintains their own annual schedule of emergency drills, which are included as part of the respective operator and site Emergency Response Plans.

Table 4 - Emergency drill schedule for FSU and regasification facility

FSU		Regasification facility	
Scenarios simulated	Expected drill frequency	Type of scenarios simulated	Expected drill frequency
Man overboard	2x per year	Environmental scenario (e.g. oil spill, diesel spill, fire drill)	4x per year
Fire drill	Every 2 weeks	Moderate fire scenario (e.g. fire drill, propane leak)	6x per year
Vessel collision	3x per year	Moderate spill scenario (e.g. diesel oil spill)	1x per year
Loss of moorings	2x per year;	Serious spill and fire scenario (e.g. flammable vapour cloud)	1x per year
Vapor release	3x per year	Security incident (e.g. breach of site security)	1x per year
Oil spill (one level 2 IMO)	4x per year		
Chemical spill	2x per year		
Confined space rescue	6x per year		
Explosion	2x per year		
Loss of cargo containment	4x per year		
Security breach	4x per year		

Medical emergency – illness/injury/death	2x per year		
Engine room flooding	4x per year		
Grounding/stranding	2x per year		
Abandon ship drill	Every 2 weeks		

7.3 Emergency Testing Procedure

7.3.1 Background and context

Emergency tests enable the energy supply sector in Malta to assess and improve resilience in a crisis (or a major incident scenario), by testing and validating key emergency response assumptions and practising response procedures to major incident in a controlled environment.

Due to the nature of Malta’s gas and electricity infrastructure and limited available resources, real time exercises that simulate an emergency resulting from high or medium-impact energy supply crisis scenarios are consolidated into a single national emergency testing programme for energy. Emergency tests in Malta’s Energy supply sector shall therefore be carried out to meet the requirements of EU Regulations:

- Reg. (EU) 2017/1938 – Concerning measures to safeguard the security of gas supply, and
- Reg. (EN) 2019/941 – On risk-preparedness in the electricity sector.

National context: Malta operates a single gas infrastructure facility (the LNG terminal (FSU), jetty and regasification plant) and one sub-sea connection to the Italian electricity network. Additionally, a restricted capacity of generation reserve/back-up generation needs to be factored into risk evaluations. In practice, such tight-coupling implies that simulating the removal of either the gas facility or the sub-sea connector for a real-time emergency test could critically expose electricity supply. Therefore, whilst periodic real time (or accelerated) real-time emergency tests and exercises are undertaken, test exercises are purposely planned to utilise a combination of desktop walk-through tests, functional tests, and facility-specific emergency response exercises held on site.

Test methodology:

The national emergency test programme for energy combines testing and evaluating compliance with regulatory requirements and existing emergency test measures. The programme includes individual emergency test exercises that, where practical, support and are co-ordinated with other emergency test exercises that affect the energy supply in Malta. To address specific regulatory requirements the Test Programme shall:

- Indicate the calendar of the tests (including real-time test exercises),
- Indicate the procedures for conducting the tests,
- Identify which actors will be involved in the test(s).

Cross-border emergency coordination:

The Programme shall ensure that specific tests are planned to incorporate both bilateral/regional and specific national crisis scenarios, as much as possible. Existing arrangements are in place between the Italian electricity TSO (TERNA) and the Maltese DSO (Enemalta) that enable the day-to-day management of the subsea connector between Malta and Sicily. These procedures include capacity availability and nomination, and the management of planned and un-planned outages.

Arrangements on how to test bilateral mutual assistance and coordination measures (for electricity) with Italian parties are currently being investigated by the Competent Authority together with Enemalta as the main operator. The conclusion of these discussions will be considered when planning and scheduling test exercises.

Realistically, assessments of bilateral emergency co-ordination shall include co-ordination between the Maltese and Italian authorities when faced by an energy supply crisis. The overall objective shall be to test and assess the effectiveness of operational communication and information exchange capabilities relating to managing the capacity availability of the sub-sea connector between Enemalta and TERNA.

7.3.2 Timetable for Emergency Test Exercises

- **Frequency:** The Competent Authority shall plan and make arrangements for real-time simulation Emergency Test exercises to be carried out at least every two years. Additional, interim desktop or walk-through test exercises may also become necessary to assess emergency response capability in response to changing circumstances or emerging risks in the intervening period.
- **Preparation:** Real-time simulation exercises require preparation and detailed planning. Sufficient time shall be allowed to develop detailed credible scenarios ahead of each bi-annual test exercise. Whilst endeavouring to reflect real-time operational environment these tests shall be planned and timetabled to minimise risk and disruption to normal operations.
- **Test calendar:** the calendar of emergency test exercises for the emergency test programme for energy, for the period 2021/2025 is shown below:

<i>Emergency Test Plan Type</i>	<i>Plan Detail / Scope</i>	<i>Date</i>
<i>Real-time emergency test</i>	<i>Tsunami Preparedness Exercise – Scenario Simulation</i>	<i>Nov 2021</i>
<i>Real-time emergency test</i>	Oil Pollution Preparedness, Response and Co-operation (OPRC) exercise	2022
<i>Biennial real-time emergency test</i>	<i>National Emergency Test with regional dimension</i>	<i>2023</i>
<i>Interim desk top only exercise</i>	<i>To be determined</i>	<i>2024</i>
<i>Biennial real-time emergency test</i>	<i>National Emergency Test with regional dimension</i>	<i>2025</i>

Brief description of past and planned emergency tests

1) Tsunami Preparedness Exercise (2021)

The Tsunami alert simulation exercise was carried out on 21 November 2021. The main Enemalta objectives were to test the efficacy of communications between the Enemalta Crisis Management Team composed of Enemalta CEO and Board of Management, Government authorities, the CPD, relevant Enemalta departments, Terna, and power plant operators (ElectroGas and D3PG).

During the exercise, simulation of de-energisation of Marsaxlokk area substations, shutdown of Gas Facilities, shutdown of Delimara 4, shutdown of Delimara 3, controlled remote load shedding from Marsa Network Control Room, and evacuation of personnel from Delimara station was carried out.

Once the Tsunami was over and CPD issued the "All Clear" notice, Delimara station personnel were instructed to return to the station and to re-start gasoil-fired machines to enable restoration of curtailed supply, re-start of Gas Facilities, re-start of Delimara 3 and Delimara 4 upon restoration of gas supply, and shutdown of gas-fired machines.

Following the Tsunami simulation exercise, a de-briefing exercise was undertaken with stakeholders, where the shortcomings and needs evidenced by the simulation exercise were identified, and remedial action taken.

2) Oil Pollution Preparedness Response and Co-operation (OPRC) (2022)

The Oil Pollution Preparedness Response and Co-operation (OPRC) exercise carried out on 26th October 2022, involved the simulation of an oil spill from the fuel loading arm at Delimara station whilst fuel loading activity was ongoing at the quay. The exercise involved a spill moving towards the station seawater intake. To prevent damage to the station and to contain the spill, action was taken by the Emergency Response Team (ERT). The Central Control Room (CCR) was informed/triggered by maintenance personnel who noticed the spill, and consequently the Emergency Response Plan was activated.

The ERT team, together with the assistance of maintenance personnel, (all of whom are trained on spills) launched the small boat available at the station, taking with them the necessary equipment to contain the spill, including booms, the skimmer, absorbent pads, etc.

The Civil Protection Department (CPD) were present on site just in case anyone required assistance whilst at sea. Transport Malta (TM) were present as observers.

The necessary safety equipment, including life jackets, was provided to the personnel on the boat, and the spill was simulated using a (soluble) savoury snack.

7.3.3 Objectives and purpose

The *national emergency test programme for energy* and individual emergency test exercises shall reflect realistic high and medium impact crisis scenarios impacting Malta's gas and electricity supply. These scenarios are intrinsically aligned with the National Risk Assessment [NRA] developed by MHSE as well as the sector-specific regional and national energy crises scenarios for electricity and gas. Exercises shall include development of time-based events (injects) unfolding from realistic scenario models of energy supply and demand that include short-term and seasonality factors. Scenarios will

be based on *reasonable worst case* of electricity demand and electricity and energy (LNG, gas, and gasoil) supply. Exercises will be planned to enable emergency responses to be simulated in real time in accordance with the emergency plans.

When carrying out emergency test exercises, weaknesses in systems, processes, resources, training, and technical capabilities that form part of the preventive measures and emergency response measures shall be identified and documented.

- **Co-ordination:** At the operational level, the objective is to test the coordination between potentially affected actors, stakeholders, and other parties. These shall include, but are not limited to, testing the gas facility operator, generation plant operators, emergency services, health and social services, other government ministries, large energy users, water services, waste services and transport service providers.
- **Emergency procedures:**
 - To test the latest active emergency procedures, including operational capability to implement and manage switching between alternative electricity supply sources in real time, including the coordination of relevant parties (gas facility operator, generation plant operators and TERNA).
 - To test ability to implement manual load shedding and to protect supplies to priority customers in real time whilst maintaining a stable electricity supply.
 - To test effectiveness of communication between operational parties.
 - To test the efficiency of communication between national stakeholders.
 - To test mechanisms used to communicate with and inform the public during an energy crisis.
- **Rehearsal and training:** Emergency test exercises shall provide a safe environment for parties to carry out emergency response training for staff and contractors.
- **Emergency readiness:** Emergency test shall test the respective abilities and capabilities of the emergency responders, gas facility operator, the electricity system (generation, distribution and critically dependant end users), communication networks, the harbour facilities, health and social services and other stakeholders to respond to an emergency in real time.
- **Crisis Trigger points:** Emergency test will seek to validate trigger mechanisms for non-market-based measures, and the triggers for crisis level escalation and de-escalation.
- **Identification of gaps and omissions:**
 - To identify risks and crisis scenarios that were not previously foreseen.
 - To identify weaknesses or failures in expected emergency response arrangements.
 - To identify any relevant actors not included in the emergency planning process.

7.3.4 Procedure

- **Energy emergency test exercise programme:** Enemalta, in cooperation with gas facility operators and other stakeholders, shall establish the National Emergency Test Programme for Energy that meets the regulatory and legislative requirements for the electricity and gas

sector for Malta. The programme defines when and how individual Emergency Tests exercises are carried out to meet the objectives set out in the previous section. A schematic for the overall process is shown in **Error! Reference source not found.** at the end of this section below.

- **Exercise Terms of Reference:** For each real-time simulation exercise, Enemalta in cooperation with gas facility operators and other stakeholders, shall set out a high-level *realistic worst-case energy supply risk scenario*. This shall be based on the current analysis and understanding of electricity gas and other energy related supply risks. Based on the scenario and stakeholder engagement, Enemalta shall draw up the terms of reference, goals, and objectives for the emergency test real-time simulation exercise.

- **Exercise team:** Enemalta shall be responsible for forming the Emergency Test Exercise team.. The Exercise team shall be responsible for formulating detailed plans and arrangements, running the exercise, and developing the subsequent report. On the basis of recommendations from the Emergency Test Team the Competent Authority shall review and endorse:
 - The detailed scenario;
 - The scenario timeline;
 - The exercise methodology (i.e. desktop/ walkthrough / functional and *in situ* real time simulation);
 - Key performance targets for the test exercise.

- **Exercise development and planning:**
 - The Exercise team shall develop the Emergency Test exercise in order to test the effectiveness of the procedures established in the respective Emergency Plans.
 - The Exercise team shall define the expected results from the exercise, so that actual preparedness against expectation can be measured against pre-set performance metrics. Guidelines shall include testing procedures for the exchange of information and cooperation between affected parties.
 - The Exercise team shall develop the necessary detailed narrative and *injects* for a credible energy supply crisis scenario test. The exercise team shall also prepare briefing notes and guidance for the exercise participants.

- **Live Exercise:** During the exercise, the exercise support team shall record the time and details of primary decisions and actions made in the execution of the exercise. All relevant supply, demand and environmental data shall also be captured. The Competent Authority shall independently observe the exercise and may appoint a delegate to act as a coordinator for the purpose of the exercise itself.

- **De-brief and draft report:**
 - Directly following the exercise termination there shall be debrief session(s) attended by all exercise participants. Based on their observations and the supporting data the exercise team shall draft a report that compares the expected against the actual results.
 - This will include explanations of where the differences originate and what actions are necessary to resolve any gaps. It shall also include proposals/improvements to resolve the errors found, and recommendations for updating or revising the Emergency Plans.

- The draft report shall be made available to the Competent Authority within one month of the conclusion of the test.
- **Final report:**
 - The Competent Authority shall review the exercise report and recommend changes. Once finalised and agreed by the Competent Authority the report will be submitted to the Commission within three months of the conclusion of the test.
 - A summary description and main results of each Emergency Test exercise along with details of issues identified and recommendations will be documented. These will be used to update the periodic (4 year) revision of the Gas Security of Supply Preventive Action Plan and Emergency Plan under the Gas Security of Supply Regulation, and the Risk Preparedness Plan under the Electricity Risk Preparedness Regulation.
 - The results of the tests shall also be presented as appropriate, to the Electricity and Gas Coordination Groups by the Competent Authority.

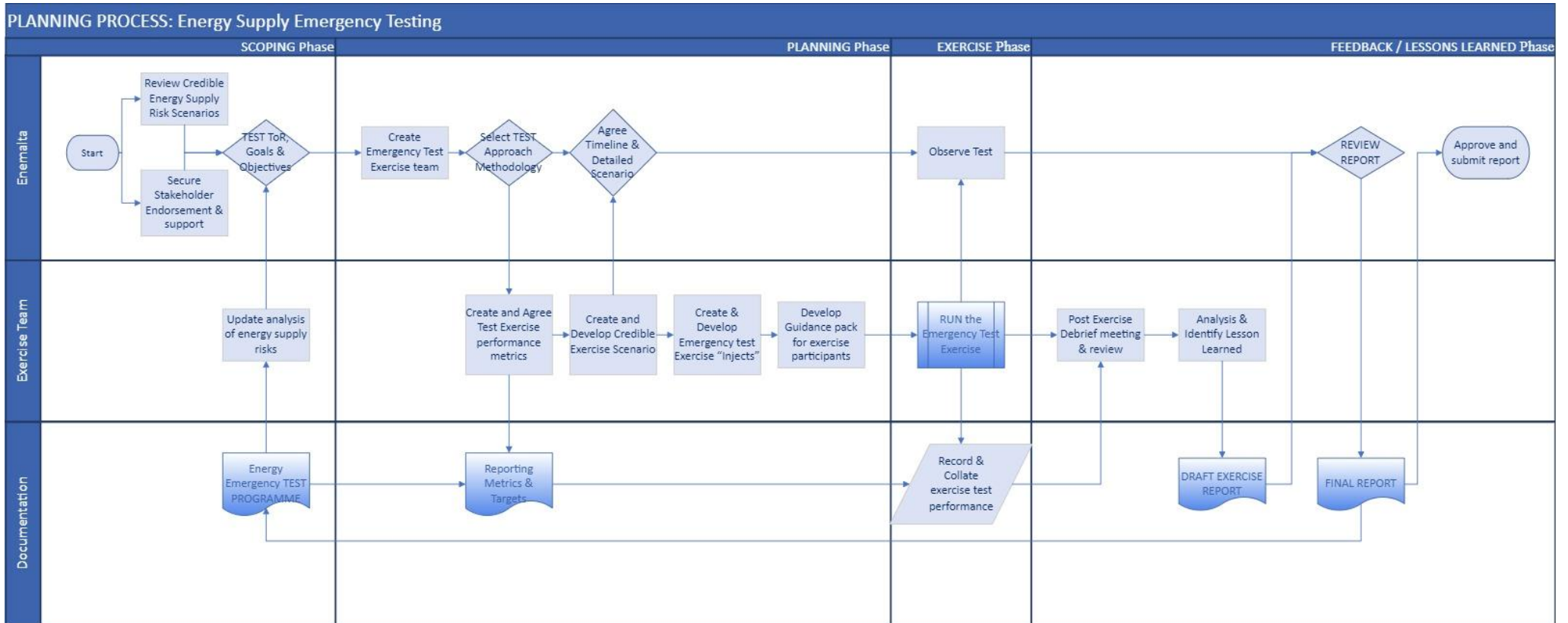


Figure 2 - Emergency Test Exercise Planning Procedure

(8) Regional dimension

In line with Annex I of the Gas Security of Supply Regulation (EU) 2017/1938, Malta is part of the following risk groups:

North African gas supply risk groups:

1. **Algerian Risk Group:** Greece, Spain, France, Croatia, Italy, Malta, Austria, Portugal and Slovenia
2. **Libyan Risk Group:** Croatia, Italy, Malta, Austria and Slovenia

South-East gas supply risk groups:

3. **Southern Gas Corridor – Caspian:** Bulgaria, Greece, Croatia, Italy, Hungary, Malta, Austria, Romania, Slovenia and Slovakia
4. **Eastern Mediterranean:** Greece, Italy, Cyprus and Malta

Article 20 (2) of the Regulation states that for the time being the obligations related to the work of the South-East gas supply risk groups shall remain on hold and start only from the date of when the major infrastructure/ pipeline enters into operation.

In the regional dimension, which was co-drafted within the relevant Risk Groups, the main focus is to adopt a first level of shared measures and actions aiming to ensure that Member States belonging to the risk group are informed in a timely manner about the declaration of a crisis level in another Member State and the measures undertaken by that Member State during a crisis. When the Competent Authority of one Member State belonging to the risk group declares a crisis level it shall communicate this declaration within one day to all the other Member States belonging to the risk group as well as every measure implemented.

The Risk Groups are currently working on updating the Common Risk Assessments to take into account recent developments in the energy sector, and in particular assessing the impact of a full Russian gas disruption. At the time of updating this Emergency Plan, the Algerian and Libyan Risk Groups were in the process of running new simulations. The results of the updated simulations of both the Libyan and Algerian Risk Groups acknowledge that due to the nature of Malta's system whereby it is not connected to the trans-European gas network and due to the diversified portfolio of LNG import sources, Malta would not be directly affected by a disruption of flows from Algeria or Libya. As per the new Regulation on gas demand reduction, Risk Groups are also tasked with coordinating the gas demand reduction measures.

Due to the geopolitical context and its impact on security of gas supply in Europe, for the purpose of the 2022 version of the Common Risk Assessment of the Libyan Risk Group a slightly different approach was taken compared to previous years. The Belarus, Ukraine, Trans-Balkan, Libyan and Caspian Risk Groups requested assistance of the European Commission's Joint Research Centre in order to carry out a pan-European crisis scenario focusing on the prolonged halt of Russian gas flows through all routes from 1 October 2022 to 31 December 2023. Multiple scenarios were developed testing the impact of various gas storage levels, interconnection point capacities and strategies (cooperative vs non-cooperative). However, due to the nature of Malta's energy system, e.g. absence of a gas connection to the internal gas market and the fact that Malta does not import any Russian gas, Malta was not explicitly modelled in the JRC simulations and there is no envisaged gas curtailment or unserved gas demand registered for Malta in the simulations.

Malta is currently not interconnected to the Trans-European Gas network via a gas pipeline and does not have “*solidarity protected customers*” within the Regulation’s definition and is therefore not obliged to agree solidarity mechanisms with other Member States. Malta’s LNG facility is not used for storage and diverting an LNG delivery which is en route to Malta would lead to significant security of supply concerns for Malta, given that LNG deliveries are scheduled for times when the level of LNG in the FSU is reaching its technical minimum.

However, due to the independent nature of gas supply in Malta, in the event of a crisis it may decide to reach outside of the confines of the Regulation and alternatively seek out regional cooperation to ensure the supply of LNG outside of the existing contractual obligations to avoid any impact on electricity supply.

Emergency measures agreed upon by Member States belonging to a risk group focus predominantly on mutual assistance arrangements between adjacent TSOs establishing how to proceed in case of an exception event situation and other cooperation mechanisms, such as those within regional ReCo systems for gas. In Malta, such emergency measures will be taken into account during and after the foreseen development of the MTGP gas pipeline project. Should Malta become interconnected via a gas pipeline, the risk to Malta in the context of regional risk groups would change and the risk to gas security of supply would need to be reassessed.

Annex A: Information flow charts

The indicative flow of information prior to, during and post a crisis event is demonstrated in the figure below:

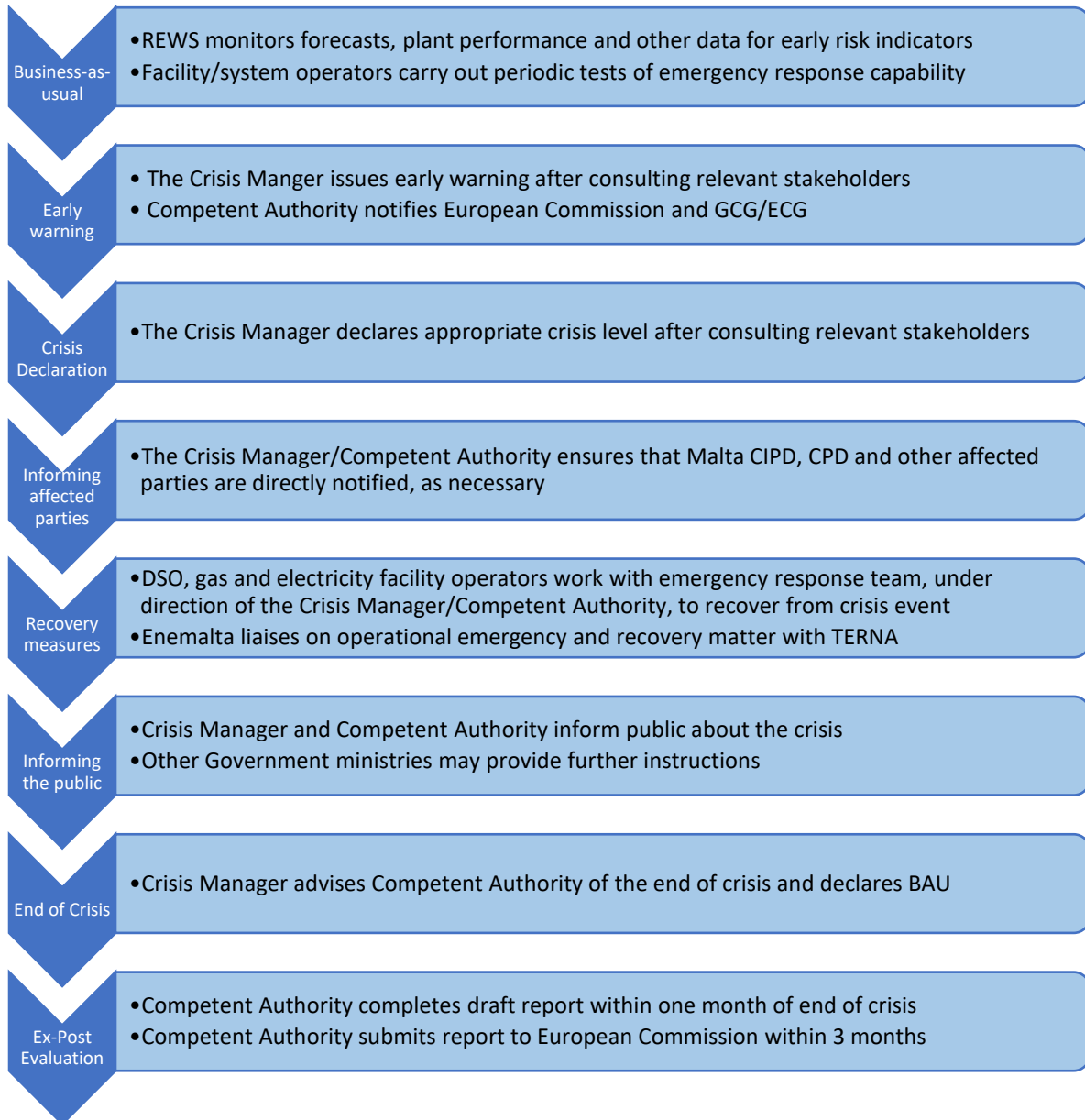


Figure 3 - Information flow prior to, during and post an energy crisis

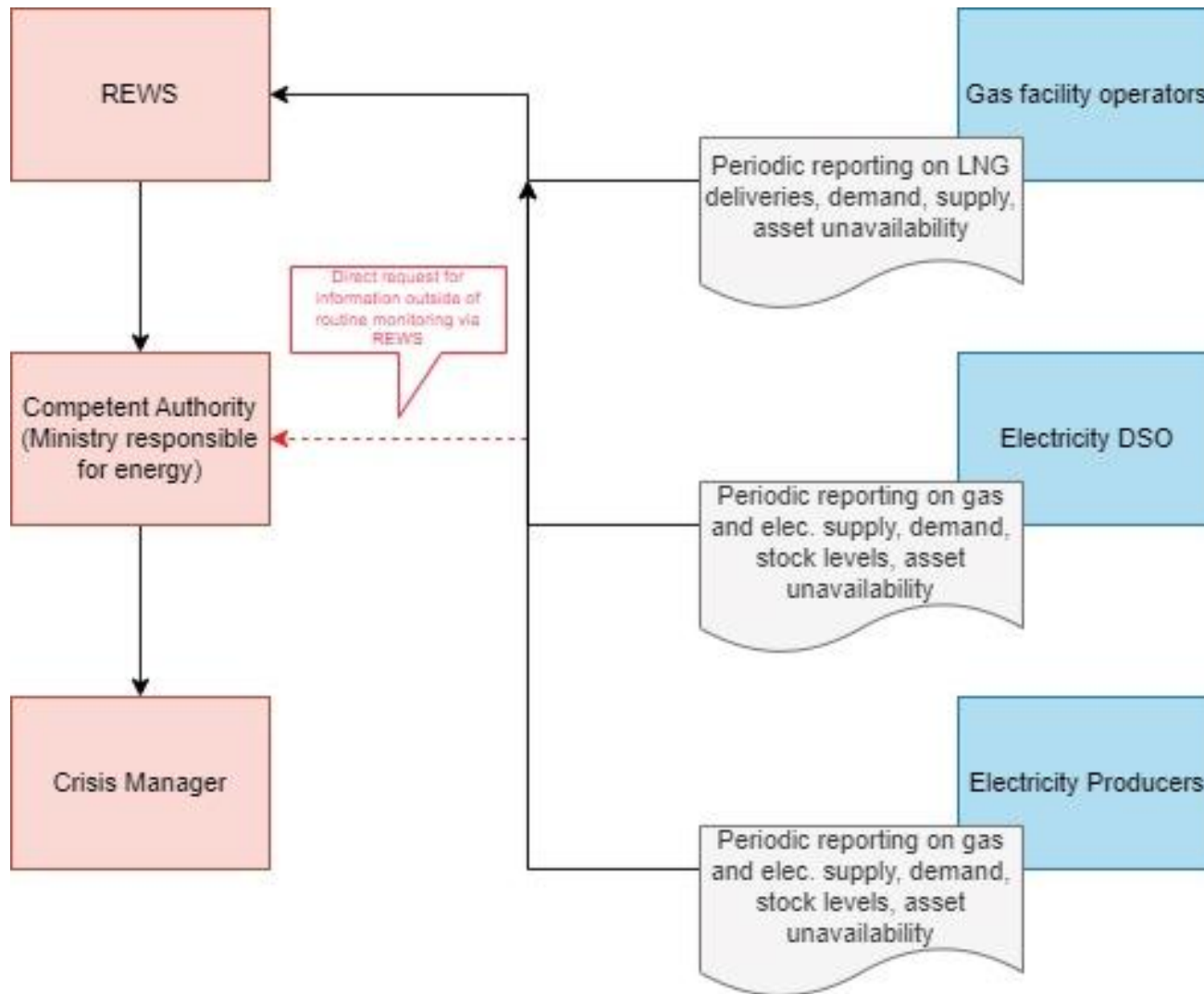


Figure 4 - Information flow during business-as-usual

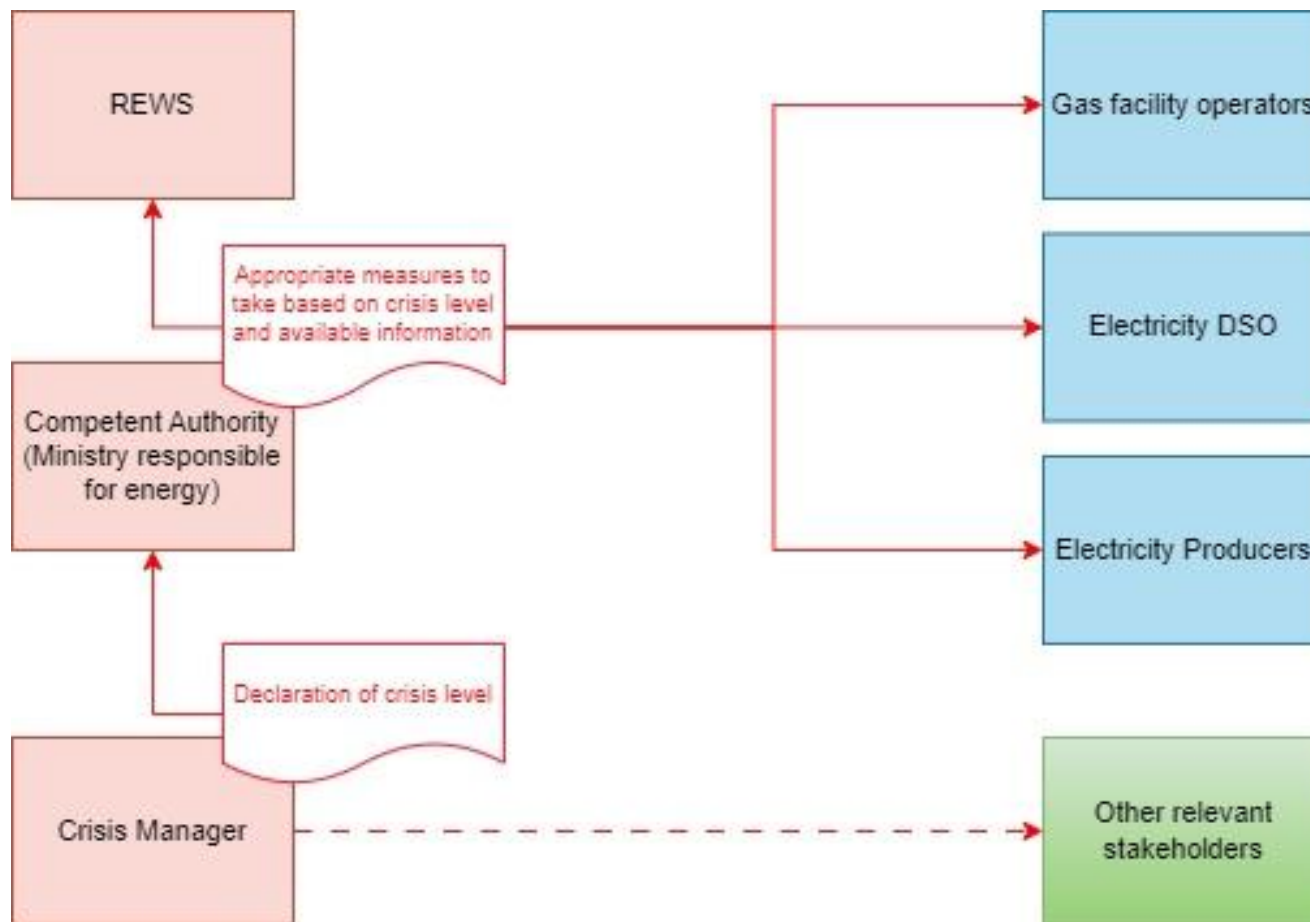


Figure 5 - Information flow during a crisis

Annex B: Guidelines on Efficient Energy Use

The public sector in Malta is committed to lead by example and is providing the following guidelines to be followed in all public buildings as well as public open spaces:

1. Cooling and heating and other appliances

1a. Airconditioning setpoints should not be set below 24°C in cooling mode and shall not be set above 21°C in heating mode, excluding hospitals and clinics and those areas where specific processes or functions necessitate temperature outside these limits.

1b. Airconditioned rooms should have all windows and doors closed while the air-conditioning system is switched on.

1c. Air conditioning systems should be switched off 15 minutes before close of business. Practices where air conditioning systems are switched on before commencement of business should be stopped.

1d. Idle appliances should be switched off from the socket outlet when not in use. Particular examples include mobile and laptop chargers, printers, display monitors, water coolers, etc.

2. Lighting

2a. Façade lighting and lighting on public monuments should be switched off after midnight.

2b. Lighting in public gardens should be switched off after midnight, excluding security lighting.

2c. Public fountains should be switched off between midnight and 08:00, taking into account any alternative measures necessary to maintain safe water quality.

2d. Window blinds and curtains should be closed where possible in summer. Window blinds and curtains should be open in winter for natural light.

2e. Wherever renovations to buildings are in progress or imminent, all lighting should be replaced by low energy lighting and installations should include occupancy sensors to control both lighting and air conditioning.