



Ministry of Economic Affairs
and Climate Policy

Risk Preparedness Plan Electricity 2022

The Netherlands



Contents

General	5
Introduction	5
Contents and Outline	7
1. Summary of the electricity crisis scenarios	9
1.1. Regional crisis scenarios	9
1.2. The National Security Strategy and National Risk Profile	11
1.3. National electricity crisis scenarios	14
1.4. Dutch National Crisis Structure and NCP	15
2. Roles and responsibilities of the competent authority	17
3. Procedures and measures in the electricity crisis	21
3.1. National procedures and measures	21
3.2. Cross-border regional and bilateral procedures and measures	26
4. Crisis coordinator (Gas and Electricity Crisis Manager)	29
4.1. Crisis coordinator	29
5. Stakeholder consultations	31
5.1. National consultation	31
5.2. Regional consultation	31
6. Emergency tests	33

General

Introduction

In order to prepare for electricity crises in the European Union, Regulation (EU) no. 2019/941 of the European Parliament and the Council (hereinafter referred to as the Regulation) entered into force on 5 June 2019, repealing Directive 2005/89/EC, concerning risk preparedness in the electricity sector. The Regulation introduces measures that require Member States to ensure that action is undertaken to prevent potential disruptions to the electricity supply and, if a crisis should occur, to mitigate the impact, at national and regional level. The regional level in this Risk Preparedness plan entails the region of the Pentalateral Energy Forum, including the EU Member States Germany, Belgium, France, Austria, Luxembourg and the Netherlands.

The Ministry of Economic Affairs and Climate Policy of the Netherlands has been appointed in the Dutch Electricity Act as the national Competent Authority in accordance with Article 3 of the Regulation. The Dutch Electricity Act provides that the Minister can (partly) delegate certain tasks of the Competent Authority to the national electricity Transmission System Operator (TSO) TenneT.

The Netherlands has a National Crisis Plan for Electricity (NCP-E)¹. The NCP-E is a general guiding document which comprises the most important electricity crisis arrangements to mitigate incidents in the Dutch electricity supply with significant effects for the Dutch society. The plan describes the way in which the central government will work during a crisis, in cooperation with public and private partners, such as TSOs and DSOs. The NCP-E is written in close cooperation with these partners. The last NCP-E was formalised in 2013 and is revised in 2021 in parallel with drafting a final national risk preparedness plan.

The Netherlands is cooperating with the Member States in the Pentalateral Energy Forum to fulfill the regional obligations of the Regulation.

The Pentalateral Energy Forum (Penta) is the framework for regional cooperation in Central Western Europe, consisting of Austria, Belgium, France, Germany, Luxembourg, the Netherlands, and Switzerland. The forum aims to work towards improved electricity market integration and security of supply. Jointly, Penta countries cover more than a third of the EU population and more than 40% of EU electricity generation. The initiative aims to allow energy policy to evolve from a purely national focus to a regional approach. It allows for political backing to a process of regional integration towards a European energy market. To this end, the Ministers for Energy of the Pentalateral countries regularly meet in order to discuss energy policy matters and give guidance on this regional cooperation. The work programme is implemented by the transmission system operators (TSOs), ministries, regulatory authorities, the European Commission and the market players who regularly meet in different support groups. This collaboration is formalized through the Memorandum of Understanding of the Pentalateral Energy Forum, signed on 26 June 2007 in Luxembourg.

Security of supply in the electricity sector has always been one of the most important pillars of collaboration within the Pentalateral Energy Forum. To this end, at the beginning of 2020, the Forum received a mandate to work on a well-coordinated regional framework in light of the Regulation (EU) 2019/941 of the European Parliament and of the Council of 5 June 2019 on risk-preparedness in the electricity sector (Risk Preparedness Regulation), while at the same time building further on its Memorandum of Understanding (MoU) of 26 June 2017 on emergency planning and crisis management for the power sector. Penta therefore established a network of risk preparedness experts with representatives from ministries, regulatory authorities and TSOs from all Penta countries within the framework of Support Group II, mainly focussing on security of supply. Competent Authorities and their representatives, as depicted in the table below, actively contributed to the work.

¹ <https://www.rijksoverheid.nl/documenten/kamerstukken/2022/03/14/nationaal-crisisplan-elektriciteit-2021>

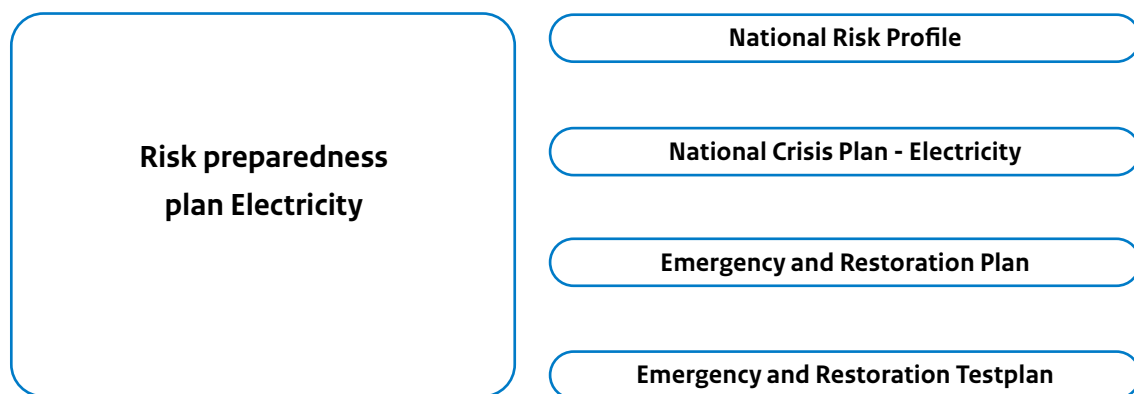
The first two steps that were taken to work on this well-coordinated regional framework was the drafting of a common chapter that was added to the draft Risk Preparedness Plans and that was presented to the Electricity Coordination Group. This was followed by the signing of a new MoU of the Pentalateral Energy Forum on Risk Preparedness in the Electricity Sector on 1 December 2021 in Brussels by the Ministers representing the countries in the Pentalateral Energy Forum. Both documents aim to provide an

answer to the requirements as regards regional and bilateral measures pursuant to article 12 and 15 of the Risk Preparedness Regulation. Furthermore, the MoU provides a basis for the work that will be done in the following years on risk preparedness in the Penta Region.

Table 1: **Competent authorities in the Penta region**

Country	Competent authority	Contact details
Belgium	Minister of Energy	https://www.belgium.be/en
Germany	Federal Ministry for Economic Affairs and Energy	https://www.bmwi.de/Navigation/EN/Home/home.html
France	Directorate General for Energy and Climate	https://www.ecologie.gouv.fr/
Luxembourg	Minister for Energy	https://mea.gouvernement.lu/fr.html/
Netherlands	Ministry of Economic Affairs and Climate Policy	https://www.rijksoverheid.nl/ministeries/ministerie-van-economische-zaken-en-klimaat
Austria	Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology	https://www.bmk.gv.at/en.html
Switzerland	Provisionally Swiss Federal Office of Energy	https://www.bfe.admin.ch/

Figure 1: **Structure Crisis plans regarding electricity**



Contents and Outline

In line with articles 6, 7 10, 11 and 12 and Annex of the Regulation the content of this Risk Preparedness Plan was determined.

As such the Plan contains:

1. a summary of the electricity crisis scenarios identified at regional and national level in accordance with the procedure laid down in Articles 6 and 7 of the Regulation, including the description of the assumptions applied; = **chapter 1**
2. the role and responsibilities of the Ministry of Economic Affairs and Climate Policy as competent authority and the bodies to which tasks have been delegated; = **chapter 2**
3. the procedures and measures in an electricity crisis at both national and regional level, including preventive and preparatory measures = **chapter 3**
4. the role of the crisis coordinator in the Netherlands: the Crisis Manager for Gas and Electricity = **chapter 4**
5. In accordance with Article 10(1) of the Regulation, a description of the mechanisms used for the national and regional consultations to be carried out for the development of the final risk preparedness plan = **chapter 5**
6. more information on the emergency tests at regional level = **chapter 6**



1. Summary of the electricity crisis scenarios

This chapter discusses the electricity crisis scenarios identified at regional and national level in accordance with the procedure laid down in Articles 6 and 7, including the description of the assumptions applied.

1.1. Regional crisis scenarios

As highlighted in the Risk Preparedness Regulation, regional crisis scenarios are an important element to identify and elaborate the precise scope for cross-border cooperation and assistance. Article 6 of the Risk Preparedness Regulation assigned the task of identifying regional scenarios to ENTSO-E. However, the report presented by ENTSO-E did not provide sufficient detail on certain scenarios and their particular relevance for specific regions. Therefore, the Pentalateral Energy Forum saw the need to identify regional crisis scenarios pursuant to Article 5 and 6 of the Risk Preparedness Regulation, complementary to the work of ENTSO-E that had a Pan-European perspective². Penta voluntarily performed a much more detailed analysis along the same principles and applying the same ENTSO-E methodology for the Penta perimeter, through extensive exchanges among national experts, ENTSO-E and the European Commission.

Early on in the process, national viewpoints among Penta countries related to relevant regional electricity crisis scenarios were assessed in detail based on the national contributions to the ENTSO-E process. Despite a certain heterogeneity in levels of severity and ranking of scenarios, the assessment showed good correspondence and a significant cross-border dependency and/or interdependency among Member States for a large majority of scenarios. Based on ENTSO-E's methodology for deriving a regional rating of crisis scenarios³, a Penta-rating of all crisis scenarios was established, as shown in the table below, in which the order is dependent on which scenarios has been rated most often as relevant scenarios in the national and cross-border context.

² Cf ENTSO-E report from September 2020 "Risk-Preparedness Regulation – Identification of Regional Electricity Crisis Scenarios"

³ See Appendix I of the Methodology to Identify Regional Electricity Crisis Scenarios in accordance with Article 5 of the REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC.

Table 2: Penta-rating of ENTSO-E's 31 crisis scenarios

ID	Electricity crisis scenario	Penta-Rating
1	Cyberattack - entities connected to electrical grid	44.0
28	Heatwave	31.2
12	Winter Incident	28.6
3	Physical attack - critical assets	27.2
17	Loss of ICT tools for real-time operation	25.2
10	Cold Spell	22.8
29	Dry period	22.4
9	Storm	21.6
4	Physical attack - control centres	21.0
16	Multiple failures caused by extreme weather	20.8
6	Insider attack	20.2
18	Simultaneous multiple failures	19.4
24	Industrial / nuclear accident	19.4
5	Threat to key employees	19.0
11	Precipitation and flooding	18.4
27	Pandemic	18.0
19	Power system control mechanism complexity	17.2
20	Human error	16.6
13	Fossil fuel shortage	16.0
25	Unforeseen interaction of energy market rules	14.4
15	Local technical failure	12.6
7	Solar Storm	12.2
2	Cyberattack - entities not connected to electrical grid	11.2
26	Unusually big RES forecast errors	9.6
22	Serial equipment failure	9.0
31	Forest fire	8.6
21	Unwanted power flows	8.4
30	Earthquake	6.8
14	Nuclear fuel shortage	6.8
23	Strike, riots, industrial action	5.4
8	Volcanic eruption	3.2

Based on the table above that summarizes the severity and cross-border dependencies of crisis scenarios within the Penta region, it was agreed that the top five scenarios should receive particular attention for the elaboration of common measures. Cyberattacks on entities physically connected to the electrical grid (i.e., grid operators, power plants or major (industrial) loads) are

consistently rated as the most relevant regional crisis scenario. A heatwave, a winter incident, a physical attack on critical assets and the loss of ICT tools for real-time operation complete the top five.

Notably, significant cross-border dependencies arise from the fact that Penta is characterized by high levels of integration and interconnectivity⁴, as well as coordination and cooperation among Ministries, TSOs, regulators and market parties (in Penta and beyond), which leads to significant benefits, but also interdependencies when it comes to electricity crises. At the same time, integration and interconnectivity also allow to manage risks through appropriate measures.

During the assessment, experts also considered a more generic description of crisis scenarios according to topical groupings as a

meaningful approach for risk preparedness. Indeed, the very specific scenarios may be less important for defining measures and arrangements than a more general type of scenario. For instance, whether an important line breaks down due to a storm or a heavy winter incident – both falling into the category of extreme weather conditions – is hardly decisive for the most suitable prevention and mitigation measures to ensure a safe balance between supply and demand at all times and locations. For that reason, a Penta-regional rating of nine topical groupings was created by averaging the national ratings of all scenarios within a topical grouping, as shown in Table 3 below.

Table 3: Penta-rating of crisis scenarios according to their topical grouping

Electricity crisis scenario – Topical grouping	Penta-Rating
Cyber-attack (ID 1,2)	27.6
Extreme weather (ID 7,9,10,11,12,16,28,29)	22.2
Physical attack (ID 3,4,5,6)	21.9
Technical failure (ID 15,17,18,22)	16.6
Other (ID 19,24,26)	15.4
Fuel shortage (ID 13,14)	11.4
Market rules (ID 21,25)	11.4
Human-related (ID 20,23)	11.0
Natural disaster (ID 8,27,30,31)	9.2

Penta members agreed to consider the top three topical groupings as particularly relevant for its geographical perimeter in terms of impact, likelihood and cross-border dependency. Meanwhile, it was also agreed upon to not completely discard the rest of the list, as different measures of assistance may be applicable to a broader set of scenarios.

While discussing these three scenario groupings, Penta paid particular attention to the triggers, the possible chain of events, and the impact those three scenario groupings would have on the electricity supply situation. While cyberattacks could lead to corruption of control of the system (including the market), extreme weather conditions and physical attacks could result in immediate physical damage to infrastructure. At the same time, all of these scenarios can lead to operational impacts, structural or systemic degradation, and/or endanger security of supply through an uncontrolled mismatch of supply and demand. This can result in an electricity crisis with load shedding and blackout states and has to be considered during the elaboration of the regional measures.

1.2. The National Security Strategy and National Risk Profile

The Netherlands has compared all the scenarios against the Dutch National Security Strategy⁵ and its National Risk Profile⁶. The Security Strategy is used by the government to assess which disasters, crisis, or threats can jeopardize the national security and what actions can be undertaken to mitigate the effect.

The method has been in use since 2008 and is updated every three years. Additionally, a midterm review is executed in between⁷. The National Risk Profile (NRP) provides an understanding of the most important risks of various disasters, crises and threats with a possibly destabilizing effect on the Dutch society and supports the National Security Strategy. This National Risk Profile was developed in 2016 and has been enhanced by the Dutch National Risk assessment in 2019. To develop these plans a Network of Safety and Security Analysts exists with key players from relevant organizations (e.g., for the energy sector the Dutch TSO TenneT). This group of experts is called upon to assess impact and likelihood of risks and corresponding scenarios.

⁴ As for market integration, note that Penta has been at the forefront of running a Flow-Based-Market Coupling regime. High levels of interconnectivity are demonstrated in the report of the Commission Expert Group on electricity interconnection targets "Towards a sustainable and integrated Europe", for instance.

⁵ [National Security Strategy | Publication | National Coordinator for Security and Counterterrorism \(nctv.nl\)](#)

⁶ [National Risk Profile 2016 \(rivm.nl\)](#)

⁷ <https://www.nctv.nl/onderwerpen/nationale-veiligheid-strategie/documenten/rapporten/2021/03/08/tussentijdse-evaluatie-nationale-veiligheid-strategie-2019>

The NRP describes the capabilities which are available to manage the risks and identifies the link and the mutual effects between various risks. As a consequence, the NRP constitutes a basis for the next step, which is the capability analysis. The capability analysis involves an investigation to establish which capabilities may have to be strengthened or developed and what kind of measures are required.

Societal disruption exists if one or more of the six national security interests is seriously compromised: In order to determine the seriousness (impact) of a potential disaster or crisis, these national security interests have been developed into a number of specific criteria. In the case of, for example, 'physical safety', attention is paid to the number of fatalities, seriously wounded and chronically ill and the lack of basic needs such as food, drinking water and power. An assessment is made for each type of disaster or threat as to how likely it is that it will occur. Due to the fact that the risks of

various sorts of disasters, crises and threats are assessed in the same way, the risks can be compared. Consequently, the NRP places the risks in a comparative perspective. The insight into, and the overview of, the risks from the NRP enables the government to equip Dutch society more effectively to deal with (the threat of) potential disasters and crises and also choose the right priorities. The most important target group of the NRP is therefore the ministries, which are united in the Steering Committee for the National Security Strategy, and the national administration in the form of the directors board of crisis management. However, the disasters and threats described also have consequences at regional and local level and can affect various organizations and sectors. The NRP analyses and the regional risk profiles drawn up by the security regions approximately cover a continuum from national to local scale.

Figure 2: National security interests

1. Territorial security	The unimpeded functioning of the Netherlands and its EU and NATO allies as independent states in a broad sense, or territorial security in a narrow sense.
2. Physical security	The ability of people to go about their lives in an unimpeded manner within the Netherlands and their own physical environment.
3. Economic security	The unimpeded functioning of the Dutch economy in an effective and efficient manner.
4. Ecological security	The unimpeded continued existence of the natural living environment in and around the Netherlands.
5. Social and political stability	The continued and unimpeded existence of a social climate in which individuals are free to go about their lives and groups are able to coexist within and in accordance with the Netherlands' democratic and lawful state and its shared values.
6. International rule of law	The functioning of the international system of rules, standards and agreements established for the purposes of international peace and security.

In the context of the National Security Strategy, since 2008 the Netherlands has identified two electricity crisis scenario's which are titled:

1. Cascading effects of power supply failure and;
2. Disruption of power supply (see the figures below).

Analysis of these scenarios show that a disruption to the electricity supply can have significant societal impact, due to society's large dependency on electricity. Therefore, the disruption to the power supply has both a major direct impact and a major indirect impact due to cascading effects. A disruption to the power supply has for example a major impact on the functioning of other critical processes in the affected region.

Due to the greater use of renewables and decentralized generation, controlling of the network is becoming more complex, and this might increase the probability of future disruptions. An increase in extreme weather might also lead to a higher possibility of disruptions of the power supply.

Finally, experts estimate that the likelihood of the threat of cyberattacks on the sector is increasing, due to both state actors and terrorist groups.

Figure 3: National Risk Diagram

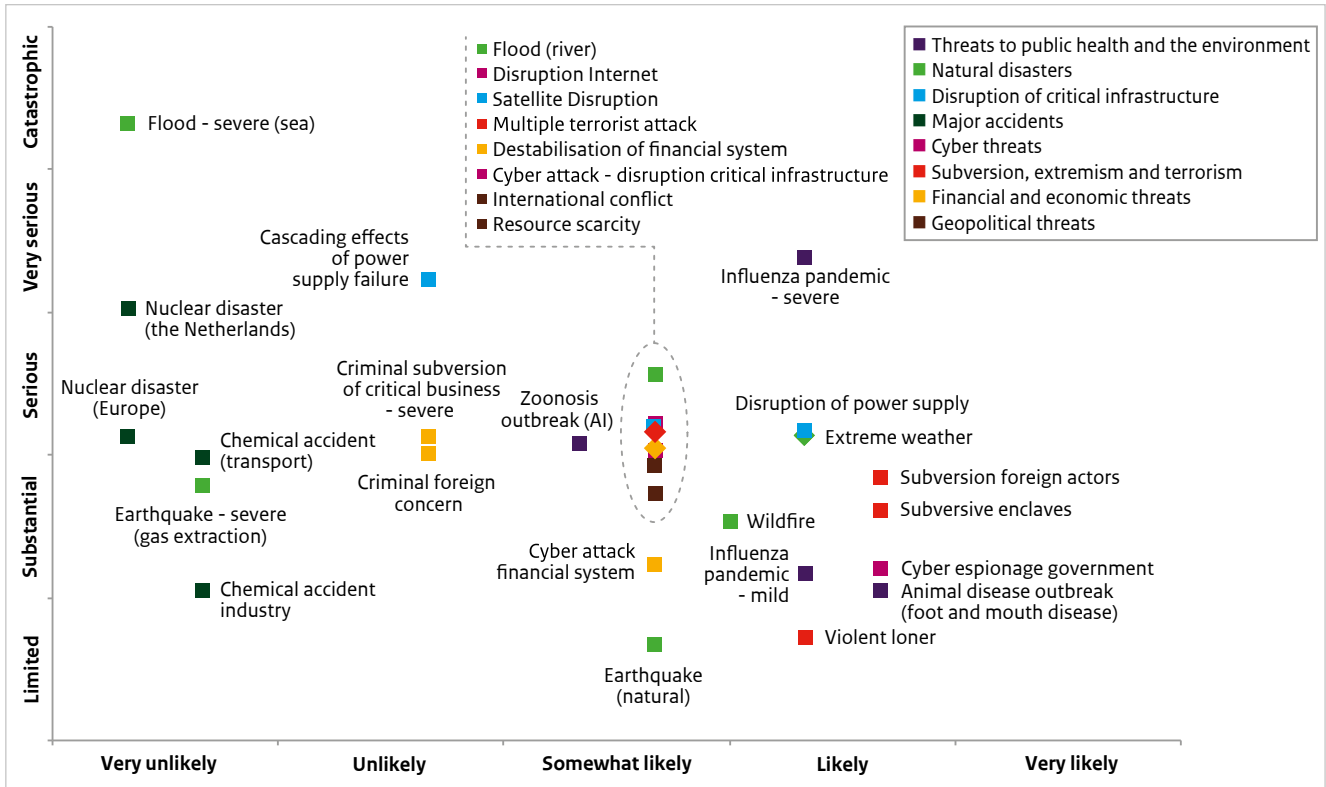
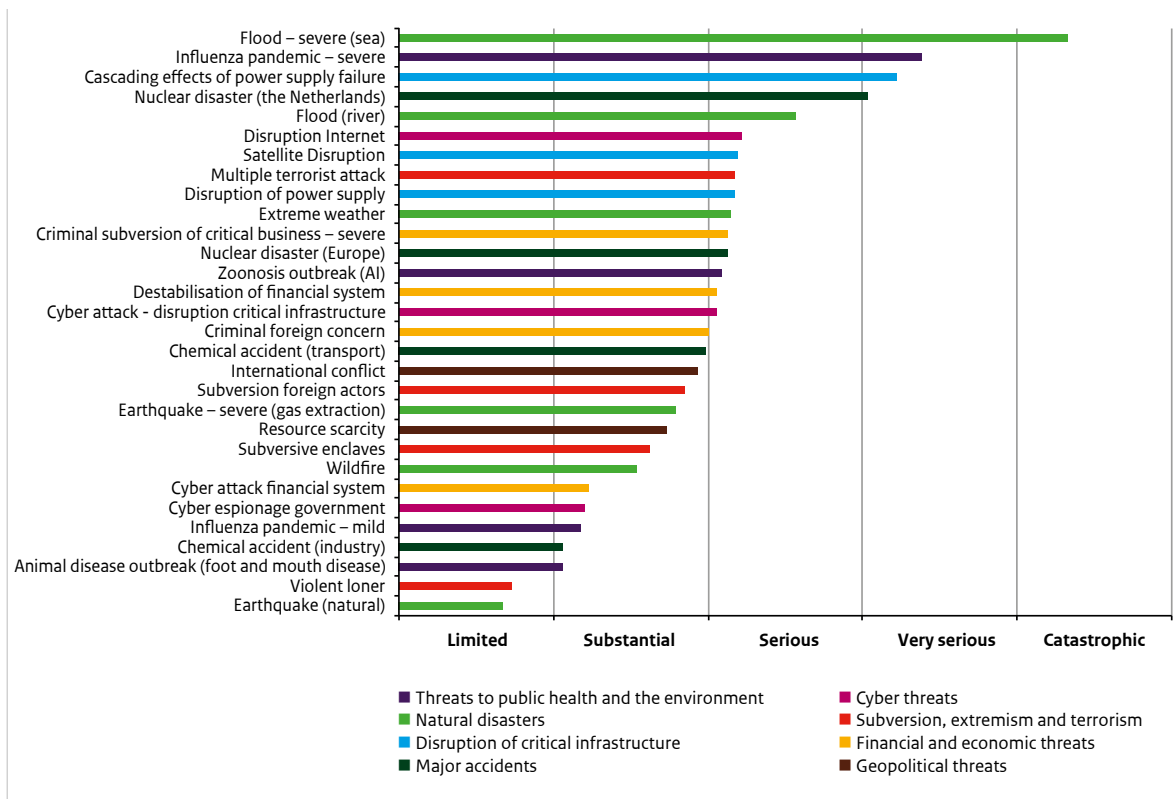


Figure 4: Overall impact



1.3. National electricity crisis scenarios

The electricity crisis scenarios within the National Crisis Plan for Electricity of the Netherlands are developed based on the government-wide strategy for National Security⁸ and a National Risk Assessment (NRB)⁹. These electricity crisis scenarios have been compared to the 31 electricity crisis scenarios developed by the ENTSO-E with specific attention for the security of supply, likelihood and impact (i.e., LOLE and EENS). The 'Dunkelflaute' scenario was developed through discussions between the government and the TSO TenneT. This scenario is basically a combination of multiple scenarios from the ENTSO-E analysis, which requires different capabilities than the other two scenarios to mitigate its (cross-border) impact.

The Ministry of Economic Affairs and Climate Policy and the Dutch TSO TenneT came to the conclusion that these three national scenarios together, cover the 31 scenarios by ENTSO-E in terms of impact and crisis management capabilities needed, and that these are the relevant scenarios with potential cross border effect.

Each of the three scenarios contains specific characteristics or building blocks. These building blocks are determining factors for the scenario; they affect the seriousness and scope of the effects of the drop-out and the necessary crisis management.

It concerns the following building blocks: the urgency of the crisis, the type of crisis, the size of the affected area, the expected recovery time in the event of a crisis and the season in which a crisis occurs.

In practice, a combination of different building blocks will be involved. These 'basic' scenarios are intended as a tool with which the target group of this risk preparedness plan can get started with their own preparation of their own organization for electricity outages.

Below, the scenarios are described.

Scenario 1: Disruption of power supply (blackout 24H)

In large parts of Europe (including the whole of the Netherlands) there is a power cut due to a significant drop in frequency. Due to complications, it takes 24 hours before the network is restored. The consequences for companies, institutions and citizens are extensive because all kinds of processes fail either totally or partially (such as public transport (train, tram, metro), home use medical devices, payment transactions, petrol stations, communication (landline, mobile, internet), shops remain closed, etc.). The assumption is that most elements of the critical infra-structure will continue to function (using emergency power).

Scenario 2: Cascading effects of power supply failure (regional power outage)

As a consequence of a terrorist attack on the power network, some of the Netherlands suffers a power outage. Daily life comes abruptly to a standstill. Large numbers of people get stranded in the morning rush-hour. Computers fail, landline and mobile telephony become disrupted, cash machines no longer work, heating systems, radio and TV no longer work, production processes are interrupted, etc. In the affected area (approx. 1.5 million people) it takes several days to a couple of weeks to fully restore the power supply. Although emergency provisions and makeshift solutions partially help to restore the power supply, it takes several months before the network is fully functioning again.

The disruption to the power supply has a major impact on the functioning of other critical processes in the affected region. Although emergency power systems are available for many critical processes, these become exhausted quite quickly or break down due to technical failings or a shortage of fuel (experience-based figures show that approximately 10% of the emergency power systems fail to work at crucial moments). In this scenario the entire impact is due to the failure of critical processes. The long duration of the power outage means that almost all critical processes are eventually affected. Other energy supplies are disrupted, telecommunications fail after several hours, the management of surface water, wastewater and drinking water become disrupted, as does transport, with public administration also being seriously hampered. Drinking water companies are legally obliged to be self-sufficient for 10 days. After those ten days, they are dependent on, in any event, the supply of diesel oil for the emergency generators. These disruptions occur in phases, as it were, because the emergency supplies for more and more critical infrastructures are exhausted or indeed because makeshift measures may start functioning after a certain period of time.

Scenario 3: Dunkelflaute

Europe gets the majority of its electricity supply from the sun and wind. Due to circumstances, there is a very high demand for electricity. At the same time, a period of a few days to a week has been predicted with no wind and very cloudy. As a result, almost all of Europe is expected to produce hardly any electricity from sun and wind. To compensate for this, the power plants have to run at full speed. As a result, this scenario is particular in the way that indicators of this scenario will develop over a longer period of time, which presents the opportunity to mitigate the societal impact by taking proactive action.

⁸ [National Security Strategy | Publication | National Coordinator for Security and Counterterrorism \(nctv.nl\)](#)

⁹ [Nationale Risicobeoordeling 6 \(rivm.nl\)](#)

After careful analysis of the different crisis scenarios in the ENTSO-E risk assessment combined with existing scenario's used within the Netherlands the decision was made to develop a combination of scenario's 10 and 12 and title this scenario 'Dunkelflaute'. This scenario is fundamentally different from the two existing crisis scenarios because the electricity network is fully operational but there is insufficient electricity production to meet demand. This is why the capabilities needed to deal with this event are also different and will focus more on a demand side response and reduction of consumption then on restoration of the power grid. With the existing and planned interconnector capacity in the Netherlands a realistic scenario has to be international in nature. More specific a large part of the continental European electricity system needs to be confronted with extremely high demand and very low RES production. And then still these conditions are likely not enough to result in a national electricity crisis for the Netherlands unless there is also an unforeseen unavailability of one or more significant conventional power plants. This constitutes the very definition of a so-called High Impact Low Probability (HILP) risk that we want to take into consideration in the National crisis management plans.

1.4. Dutch National Crisis Structure and NCP

The Dutch TSO TenneT in cooperation with the government has developed a System Protection and Recovery plan¹⁰. This plan is based on Regulation (EU) 2017/2196 (Network Code for the State of Emergency and Grid Restoration), Articles 11, 12, 23 and 24. This plan entails the measures to mitigate balance issues and measures to recover from even the worst scenario such as a Blackout. Coincidentally the Netherlands has developed its own crisis structure. This is a general crisis structure coordinated by the Ministry of Justice and Security and functional crisis structures for every department. Each ministry is responsible for National Crisis Plans (NCP) concerning crisis situations within the boundaries of their respective policy areas as mentioned in National Risk Diagram of the National Safety and Security Strategy. For example, there are National Crisis Plans for: water, extreme weather conditions, nuclear incidents, cyber, gas and also electricity. The NCP Electricity is the competence of the Ministry of Economic Affairs and Climate Policy.

The three national electricity crisis scenarios are the benchmark for the National Crisis Plan-Electricity (NCP-E). These National Crisis Plans are part of the national crisis structure and is developed by the Ministry of Economic Affairs and Climate Policy. All relevant stakeholders are involved (public-private). Parts of this plan are incorporated into the risk-preparedness plan.

¹⁰ [Systeembescherming en -herstel - TenneT](#)



2. Roles and responsibilities of the competent authority

This chapter discusses the role and responsibilities of the competent authority and the bodies to which tasks have been delegated.

Minister of Economic Affairs and Climate Policy

The Minister for Climate and Energy Policy is the competent authority as referred to in article 3 (1) of the Regulation.

The Minister is responsible for ensuring the national security of supply of electricity. The Minister provides for the national legal framework, within the transmission system operators, distribution system operators and all other relevant stakeholders operate.

Transmission system operator and Distribution System Operators

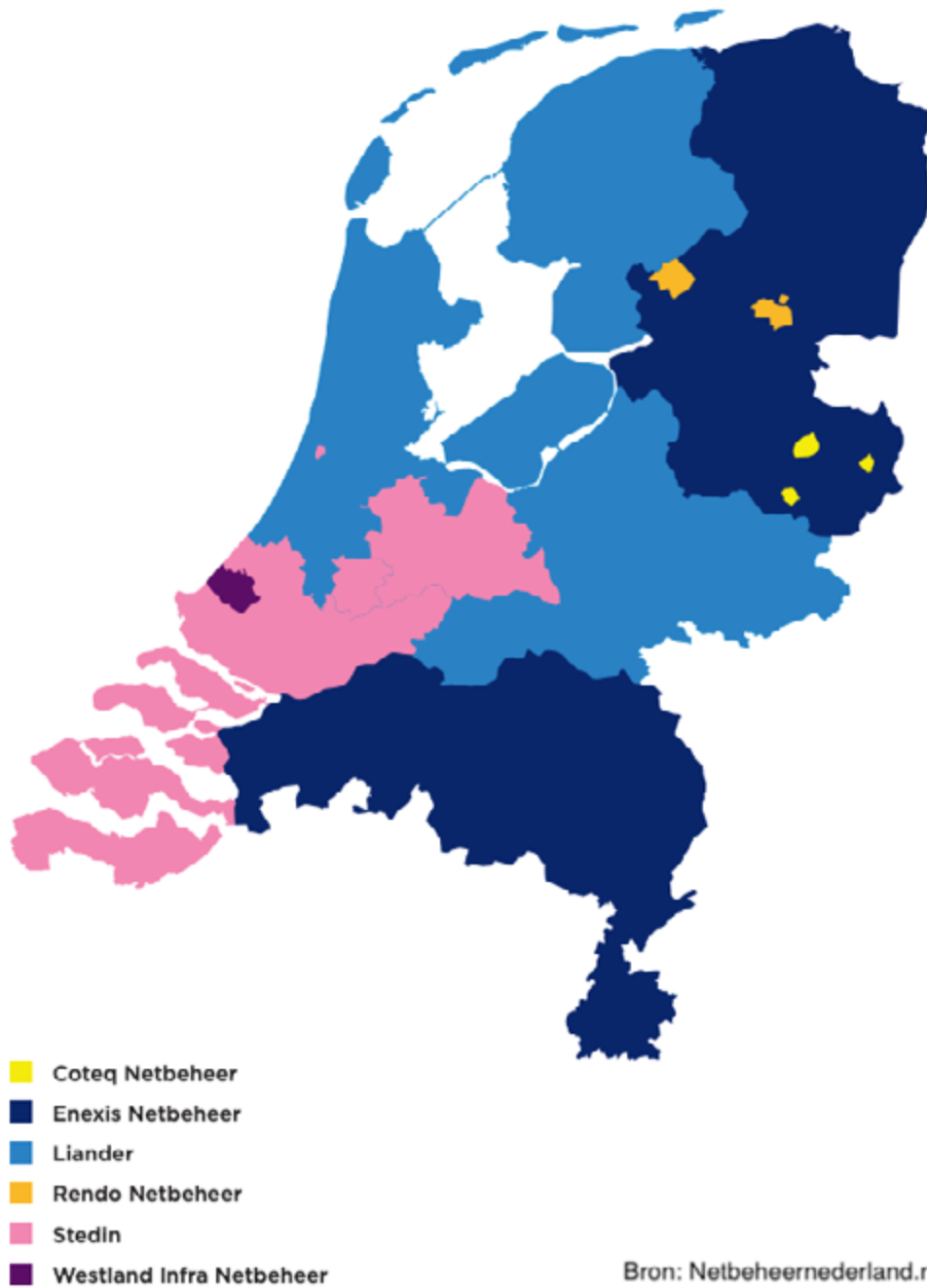
TenneT is designated by the Minister for Climate and Energy Policy as the transmission system operator (TSO) in the Netherlands both onshore and offshore. The TSO has the obligation, if the Minister instructs, based on article 3 (3), to perform activities for the implementation of Regulation 2019/941. In accordance with article 35 of the Regulation (EU) 2019/943 the TSO performs the task of Regional Coordination Centre. The TSO and the distribution system operators (DSOs) are obliged to perform the tasks as laid down by the national electricity act¹¹. These tasks include – amongst others - to guarantee the safety and reliability of the grids, the transmission of electricity over the grids in the most efficient way. To this end, TenneT has the role to monitor the adequacy of the system. TenneT has the obligation to have reserve capacity that can be used immediately available at all times. In the context of the Regulation particularly relevant is the legal obligation of system operators to protect their networks against possible external influences. This all-hazard approach encompasses all possible kinds of external threats¹².

¹¹ Article 16 of the Dutch electricity act

¹² Article 16, subsection 1 of the Dutch electricity act

Figure 4: Overview of the areas of Distribution System Operators in The Netherlands

2022 Elektriciteit







3. Procedures and measures in the electricity crisis

In this chapter the procedures and measures in an electricity crisis at both national and regional level, including preventive and preparatory measures are described.

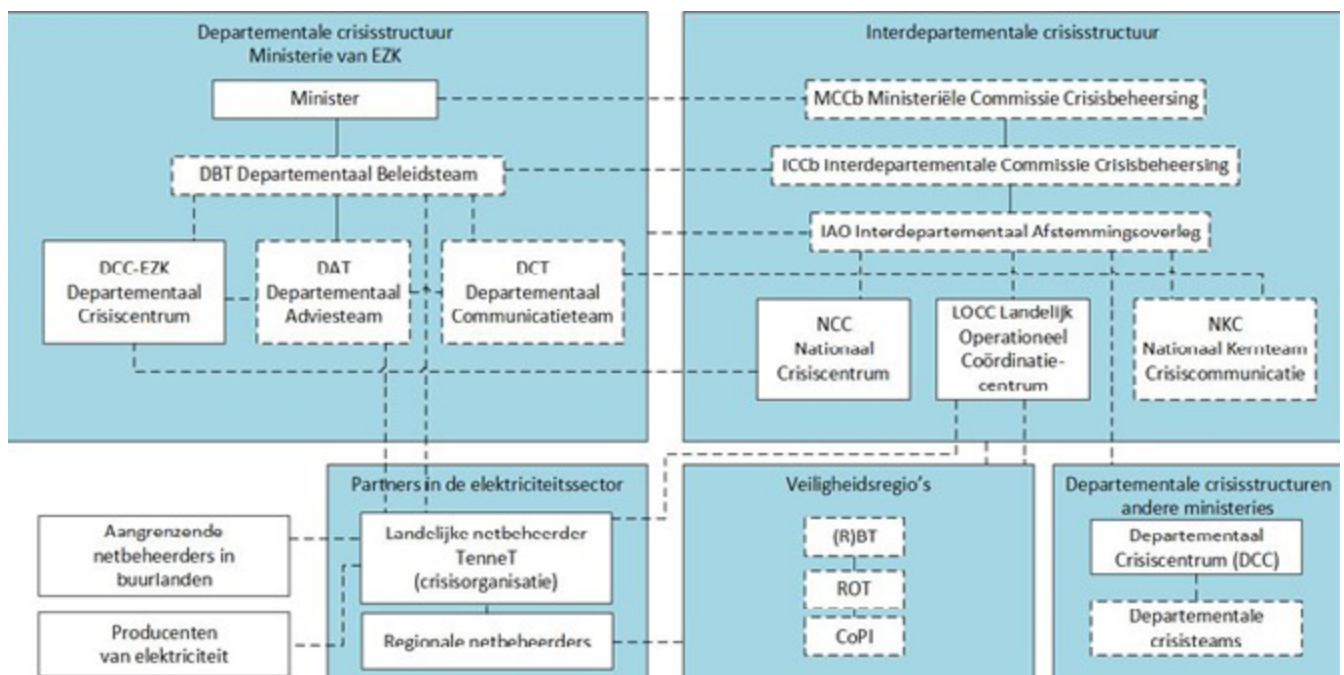
3.1. National procedures and measures

3.1.1. Procedures

In the event of an electricity crisis, it is the responsibility of the TSO, in cooperation with the DSOs, to take all operational measures necessary to resolve the crisis/interruption as quickly as possible. Depending on the extent of the crisis, the TSO involves neighboring TSO's and other stakeholders in the electricity market. At the national level the TSO is linked with the crisis

management structure of the Ministry of Economic Affairs and Climate Policy and the National Operational Coordination Center (LOCC). At local or regional level coordination of crisis management takes place between the DSOs and the so-called 'safety regions' (see below). The relationships between the involved parties are shown in the figure below.

Figure 5: National Crisis structure the Netherlands



Crisis management structure Ministry of Economic Affairs and Climate Policy

The Minister for Climate and Energy Policy (the Minister) is supported by the crisis structure of the Ministry. This structure consists of a Departmental Policy Team (DBT), a Departmental Advice Team (DAT), a Departmental Crisis Center (DCC) and a Departmental Communication Team (DCT). The role and responsibilities of these teams are explained below:

- The Departmental Policy Team (DBT), on behalf of the minister, prepares strategic decisions about the approach to the electricity crisis, determines the communication strategy, informs and advises the minister. The DBT is chaired by the director-general Climate and Energy, who is also designated as the crisis coordinator as referred to in article 11 and 12 in the Regulation (see chapter 4). The DBT is composed of a secretary, advisor on crisis management (head of unit DCC), information coordinator, advisor on communication (director Communication), policy advisors (director/heads of unit) and a facility manager. A liaison from the TSO participates in the DBT.
- The Departmental Advice Team (DAT) prepares the crisis decision-making of the DBT and coordinates the implementation of the decisions. The DAT is responsible for providing the insight in the actual crisis situation that is as reliable and complete as possible. The DAT is chaired by the director Electricity of the Ministry. The DAT is composed of a secretary, advisor on crisis management, information coordinator, advisor on communication, advisors (policy advisor electricity and international energy policy) and a facility manager. A liaison from the TSO participates in the DAT.
- The Departmental Crisis Center (DCC-EZK) supports the departmental teams in the process crisis management and decision making. It bundles information from the electricity sector (for example on operational aspects such as recovery time, cause and limitations that technology imposes on being able to honor administrative wishes with regard to recovery priorities) and can advise on political and policy aspects such as the use of emergency legislation. The DCC-EZK is also the linking pin to the National Crisis center (NCC) of the ministry of Justice and Security.
- The Departmental Communication Team (DCT) gives substance to the press and public information in the event of a crisis and advises the DAT and DBT on the communication strategy to be followed. Communication is broadcasted via normal technical sources. If not, the communication is possible via satellite-telephones. To enhance the accessibility of communication messages the Ministry of Justice and Security launched a public campaign for preparedness including having a battery powered radio in case of severe disruption.

At the initiative of the chairman of the DBT or DAT, also liaisons from the TSO for Gas or the DSOs can be invited to the crisis team.

Crisis coordinator

The EU Regulation on Risk Preparedness 2019/941, article 11 (1), sub (d), stipulates that each Member State must designate a crisis coordinator who, in the event of an electricity crisis, coordinates the approach within and on behalf of the Member State and, where appropriate, is a member of the European Union crisis management group. Due to the intimate correlation between gas and electricity, the Netherlands has elected to combine this role with the coordination role for gas, as prescribed in the EU gas security of supply regulation 2017/1938. The Director-General for Climate and Energy at the Ministry of Economic Affairs and Climate Policy has the role of *Gas and Electricity Crisis Manager*. For a more elaborated description of this function, see section 4 of this plan.

Neighboring TSO's

Neighboring TSO's are important partners for the TSO in order to ensure the security of the supply of electricity, also in the event of an electricity crisis with a spillover effect. The TSO coordinates with the Neighboring TSO's in the event of an electricity crisis.

To guarantee European cooperation, the European Network of Transmission System Operators of Electricity (ENTSO-E) has drawn up binding rules (policies) to guarantee the reliability of the electricity supply in their shared area. Within ENTSO-E, the System Operations Committee monitors daily whether sufficient power is available on the European electricity market. This platform offers the TSO the opportunity to switch quickly if power is lost. Just like other TSOs in Europe, TenneT has the obligation to have reserve capacity that can be used immediately available at all times. For electricity crises, there is as yet no crisis platform for national governments.

European Commission

Among other things, the EU legislation stipulates in Article 14 that Member States, in coordination with the TSO, must ensure that in the (possible) event of a significant deterioration of the electricity supply the European Commission and Member States are informed already at an early warning stage. No measures are introduced that unduly restrict the flow of electricity within the internal market at any time or that could seriously endanger the supply situation in another Member State, as is also stipulated in Article 16 of the Regulation. Cross-border access to infrastructure is maintained as far as technically and safely possible, in accordance with the emergency plan. Might a crisis occur, the competent authority will inform the European Commission, as well as other Member States (at least in the Penta region) as soon as possible. As a general mechanism for emergency assistance the Emergency Response Coordination Centre (ERCC) might be used¹³. After the crisis the competent authority will as soon as possible, but maximum three months later, report to the Electricity Coordination Group with an ex-post evaluation report, consulted with the national NRA beforehand.

¹³ See for example the 'Bestuurlijke Netwerkkart rampenbestrijding algemeen & handhaving openbare orde' (in Dutch): <https://www.ifv.nl/kennisplein/Documents/20210215-IFV-BNK-1-Rampenbestrijding-en-handhaving-openbare-orde.pdf>.

National general crisis management structure

Parties involved in the general chain of crisis management at national level are the Ministry of Justice and Security and the interdepartmental crisis structure. At regional level the safety regions are involved.

Minister of Justice and Security

The Minister of Justice and Security is the coordinating minister for the crisis management in general. He is responsible for the functioning and the coherence of the crisis management system. However, in case of an electricity crisis, the Minister of Justice and Security has no decisive power over the functioning of the electricity system (the continuity of the supply). This remains the responsibility of the Minister for Climate and Energy Policy. The role of the Minister of Justice and Security is to coordinate the decisions needed to mitigate the effects and impact on society of an electricity crisis.

Furthermore, the Minister of Justice and Security is in charge of strengthening national security, in cooperation with the other Ministers involved. And for the coordination of policies regarding strengthening critical infrastructure.

Interdepartmental crisis structure

Below is a brief explanation of the interdepartmental crisis structure.

- The Ministerial Crisis Management Committee (MCCb) is in charge of the coordination and decision-making on all measures and facilities with a view to an interdepartmentally coherent approach to the electricity crisis. The decisions of the Minister for Climate and Energy Policy on handling the electricity crisis are here aligned politically and administratively with the decisions taken by other ministers to prevent and limit the consequences of the electricity crisis within their own domain as much as possible. The implementation of measures, including the application of powers, takes place in accordance with the decisions taken in the MCCb. The decisions of the MCCb provide the framework for their implementation by public and private partners. The Minister of Justice and Security or the Prime Minister chairs the MCCb.
- The Interdepartmental Crisis Management Committee (ICCb) is a coordinating and decision-making body at senior official level (director-general). If necessary, decisions taken by the ICCb are submitted to the MCCb for approval. The ICCb prepares the decision-making of the MCCb.
- Interdepartmental Coordination Consultation (ILO) advises and supports the decision-making of the ICCb and the MCCb.
- The National Crisis Center (NCC) is the hub of and for information and crisis communication. The NCC supports and facilitates interdepartmental crisis decision-making, both at official and political-administrative level. The NCC provides for 24/7 information exchange and is in direct contact with the LOCC and NKC during a crisis in the electricity domain with an impact on local authorities or safety regions (see below).

- The National Crisis Communication Team (NKC) advises on the government-wide communication strategy and the communicative consequences of decisions taken. The NKC develops and coordinates the communication of the national government and, where necessary, coordinates this with other crisis partners involved. In the event of an electricity crisis, the NKC is closely connected to the Communication Team of the Ministry of Economic Affairs.
- The National Operational Coordination Center (LOCC) is the link between local security regions and central government. The LOCC directs requests for assistance. The LOCC also provides operational advice for decision-making at national level.
- The Information Team (IT) draws up an up-to-date, continuous national picture and interpretation of the situation for the benefit of the national crisis structure and decision-making teams.

Safety regions

Safety regions focus on the regional consequences of an electricity crisis in public life. This concerns care for the population, firefighting services, medical care and crisis management at regional level. The crisis organization of the safety region must be able to function continuously independently for 72 hours. Safety regions, together with their partners, make a global inventory of the possible cascade effects and the demand for emergency power supplies as a result of the power outage in their region.

Insight into the possible risks and cascade effects of power outages is essential for the realization of the entire safety chain: risk management, incident and disaster management and crisis management, risk and crisis communication to citizens and participating organizations, and normalization of society after an incident.

In principle, the mayor or chairman of the Safety region has no influence on the functioning of the electricity sector itself (the continuity of the supply): government intervention in the electricity sector is centralized and lies with the Ministry of Economic Affairs and Climate Policy and the European Commission.

Within a Safety region the following teams can become active:

- Incident Site Command (CoPI), operational team.
- Regional Operational Team (ROT), operational / tactical team.
- (Regional) Policy team (RBT), strategic team, chaired by the mayor or chairman of the security region.

Information management

Information is shared netcentric through the National Crisis Management System (LCMS), so that all relevant actors have the correct information in good time, have the same picture of the crisis and are aware of each other's interventions.

Cyber

In the event of a cybercrisis, procedures can partially differ since this type of crisis needs a different approach. Specific risk preparedness plans are stated in the European legislation: the Network and Information Security Directive (NIS). The ministry of Justice and Security is responsible for the National Crisis Plan Digital. Operators of essential services need to report (digital) incidents that affect their vital processes. Also, a duty to take proportionate technical and organisational measures to manage the risks posed to the security of network and information systems. For the electricity sector the TSO and DSO's (and producers of electricity with powerplants of at least 100 MW) have a duty to report such incidents to the regulator for cybersecurity in the Energy sector: The Radiocommunications Agency and the National CSIRT in the Netherlands: The National Cyber Security Centre. The National CSIRT can also provide information, advice and assistance for operators of an essential service (so also the TSO, DSO's and some producers of electricity). The Radiocommunications Agency can inform the Ministry of Economic Affairs and Climate. Due to an update of the NIS Directive, more entities within the electricity sector are expected to be in scope of this Directive.

3.1.2. Preventive and preparatory measures

Regarding preventive and preparatory measures: As described in chapter 2 the TSO and the DSOs have the obligation to protect their networks against external influences. This obligation encompasses the implementation of preventive measures. Yearly the TSO monitors and analyses the security of electricity supply in the Netherlands and checks whether there is sufficient supply of electricity to meet demand at all times¹⁴. Based on Regulation (EU) 2017/2196 (a network code on electricity emergency and restoration), Articles 11, 12, 23 and 24, the TSO developed and applied a system defense plan and a recovery plan¹⁵. This plan entails measures to provide a coordinated and adequate response in case of electricity interruptions. This document is discussed in more detail within this plan in the subsection 'TSO'.

3.1.3. Measures to mitigate the electricity crisis

National government

As elaborated in chapter 1, the national government develops national crisis plans for sectoral policy areas. Minister for Climate and Energy Policy is responsible for the National Electricity Crisis Plan (NCP-E). An updated version of this plan was published on 14 March, 2022¹⁶.

The purpose of the NCP-E is to contribute to effective crisis management by national and local authorities. Crisis management encompasses all measures and facilities that central government takes in collaboration with other organizations during an electricity crisis, in order to safeguard national security.

The NCP-E aims to guarantee that during an electricity crisis, the management of the Ministry of Economic affairs and Climate is coordinated according to the generic crisis structure of the central government, supplemented with necessary specific knowledge and expertise of relevant organizations. The NCP-E also aims to provide support to public and private organizations involved in the situation in which social disruption threatens or occurs as a result of an electricity crisis.

The regulation on tariff structures and conditions electricity

For the preventive and mitigating measures concerning electricity crisis the national regulation on tariff structures and conditions electricity, based on the Dutch Electricity Act article 26b, is of particular interest in the national context¹⁷.

This regulation contains, among other topics, the framework for the conditions under which the TSO and the DSO perform their legal tasks towards customers. These conditions are further elaborated in various national network codes for gas and electricity, as proposed by the network operators and established by the Autoriteit Consument en Markt (= NRA, national regulatory agencies for the electricity and gas market).

¹⁴ [Rapport Monitoring Leveringszekerheid - TenneT](#)

¹⁵ [Systeembescherming en -herstel - TenneT](#)

¹⁶ [Nationaal Crisisplan Elektriciteit | Kamerstuk | Rijksoverheid.nl](#)

¹⁷ [Regeling inzake tariefstructuren en voorwaarden elektriciteit](#)

The regulation also contains the framework for the conditions under which the TSO is entitled to take measures to maintain the energy balance of the national electricity transmission system¹⁸. In applying these measures, the TSO has to observe the following sequence:

1. use of regulating power;
2. use of reserve power;
3. deployment of emergency power;
4. appeal to producers to deploy power that has not yet been made available;
5. use of tolerance;
6. disconnection customers¹⁹.

The regulation stipulates that if it comes to load shedding, no distinction is made between Dutch customers and that only technical criteria are to be applied.

National netcode on electricity

The conditions in the regulation are elaborated in the national netcode on electricity. This code contains a specific paragraph for load-frequency control and reserves, in which – amongst other topics – the procedures and sequence of measures to be taken by the TSO in the event of disbalance of the electricity²⁰. Summarized, this sequence of measures encompass activating reserve capacity, cancelling export of electricity and – if not sufficient to rebalance the electricity system, load shedding.

The national netcode on electricity also contains a specific paragraph with the condition for the emergency and restoration situation. This encompasses the conditions for automatic load shedding by the DSO and TSO in the event of decreasing frequencies²¹.

TSO

It is the task of the TSO to maintain technical provisions and to perform system services, including maintaining sufficient production reserve capacity, which are necessary to guarantee the transport of electricity in a safe and efficient manner. System services include services provided by the TSO to resolve large-scale interruptions in the transmission of electricity and to maintain or restore the energy balance on all networks.

In accordance with Regulation 2017/2196, the TSO has developed and implemented a System Protection and Recovery Plan^{22,23}. This plan contains the framework for more detailed technical and operational measures that the TSO – in cooperation with neighboring TSO's, DSOs, Significant Grid Users (SNGs) - takes in the event of an (impending) electricity crisis. The plan also contains the criteria to determine in which state the transmission network is, as well as the measures required to stabilize or restore the state of the transmission network. TenneT coordinates the implementation of this plan, supported by the relevant stakeholders, such as the DSOs, restoration service provider, defense service providers and the significant grid users.

In accordance with Regulation 2017/2196, TenneT has also developed a scheme for automatic load shedding at low frequencies²⁴. This plan gives substance to Regulation (EU) 2017/2196 and article 9.26 of the national Netcode on electricity²⁵. This article contains the frequency threshold values for automatic load shedding at low frequencies.

DSOs

The DSOs are also obliged to have a load shedding and recovery plan for (imminent) electricity crisis. These plans are adjusted to each other and aimed at maintaining the supply of electricity, preventing serious damage to the electricity networks and infrastructure and preventing the spread of a power outage.

In the load shedding and recovery plans, the following sequence of priority must be included:

1. public order and safety, public health;
2. critical processes in industry, utility and basic facilities;
3. other industry, public buildings, businesses and consumers²⁶.

In the event of malfunctions or imminent malfunctions, this sequence will be used as far as technically feasible. The load shedding and recovery plans have to be adapted to the local circumstances of the DSO. DSOs and safety regions work together to mitigate the effects on society in the event of an electricity crisis. The Safety Regions have their own plans to mitigate the effects of an electricity crisis on the public.

¹⁸ [§ 3.3 Regeling inzake tariefstructuren en voorwaarden elektriciteit, articles 19-26](#)

¹⁹ [Article 19 \(1\), Regeling inzake tariefstructuren en voorwaarden elektriciteit](#)

²⁰ [§ 9.7 Netcode elektriciteit](#)

²¹ [Article 9.25b – 9.28 § 9.8 Netcode elektriciteit](#)

²² [Articles 11 and 23 of COMMISSION REGULATION \(EU\) 2017/2196 establishing a network code on electricity emergency and restoration](#)

²³ [Systeembescherming en -herstel - TenneT](#)

²⁴ [Article 15 of COMMISSION REGULATION \(EU\) 2017/2196 establishing a network code on electricity emergency and restoration](#)

²⁵ [Artikel 9.26 Netcode Elektriciteit](#)

²⁶ [Article 22 Regeling tariefstructuren en voorwaarden elektriciteit](#)

3.1.4. Framework for manual load shedding

In the event of an imbalance between supply and demand in the Netherlands, the TSO takes measures to prevent opposing regulatory actions by foreign institutions. In a step-by-step process automatic and manual load shedding are steps the TSO could instigate. In accordance with Regulation 2017/2196 and on the basis of the provisions in the national netcode on electricity, the DSOs are obliged to adjust their network in such a way that in the event of a drop in frequency, the system provides for automatic load shedding in case of frequency drops to 49.0 Hz and lower values²⁷. If manual load shedding is necessary, this will only be done by the DSOs by order of the TSO or by the TSO by disconnecting Transmission System Connected Grid Users²⁸.

3.1.5. Mechanisms to inform the public about the electricity crisis

In the event of a major electricity crisis The National Team Crisis Communication (NKC) coordinates the press and public information from the national government. The NKC advises at the national level on the communication strategy to be followed and the communicative consequences of decisions taken. The NKC communicates on measures to be taken and provides for process information.

At regional level, the safety region is responsible for providing information to citizens about disasters and crises. If a crisis is contained within a municipality, the mayor is responsible for crisis communication. The safety region focuses on his own region.

As long as the interruption of electricity is very local or regional and the local or regional authorities are not yet involved, the DSO is responsible for communication. The DSO provides information on the extent of the interruption and the expected restoration.

3.2. Cross-border regional and bilateral procedures and measures

As mentioned in the section introduction and context, there is substantial cooperation between the countries of the Pentalateral Energy Forum with a particular mandate to coordinate their efforts in the event of an electricity crisis.

Pursuant to the requirements on solidarity and regional cooperation, the Pentalateral Energy Forum drafted and signed a MoU on Risk Preparedness in the Electricity Sector. It provides a common understanding and clear mandate to continue the collaboration concerning the identification of possible common measures.

The common measures that will be assessed in further detail within the Penta Context will build upon existing inter-TSO agreements, as well as other relevant solidarity mechanisms. Examples of such existing mechanisms are the network code on electricity emergency and restoration or the guideline on electricity transmission system operation. More specifically, possible common measures that will be analysed in more detail are: cross-border usage of reserve capacities and flexible loads, exchange about demand disconnection plans, surveillance of the short-term security of electricity supply, coordinate information regarding saving appeals to the public, support with electric equipment, knowledge and expertise, and usage of mobile generators. Within the context of Support Group II of the Pentalateral Energy Forum dealing with security of supply, a preliminary exchange on these measures already took place. Based on the mandate and intentions expressed in the MoU, they will be further analysed from a regional point of view with respect to their technical, legal and economic characteristics.

²⁷ Article 9.25a national netcode on electricity

²⁸ Article 9.20d national netcode on electricity





4. Crisis coordinator (Gas and Electricity Crisis Manager)

This chapter indicates the role of the crisis coordinator and introduces the contact details related to the Dutch crisis structure. The Regulation stipulates in article 11 and 12 that each Member State must designate a crisis coordinator who, in the event of an electricity crisis, coordinates the approach within and on behalf of the Member State and, where appropriate, is a member of the European Union crisis management group.

4.1. Crisis coordinator

Due to the close correlation between gas and electricity, the Netherlands has chosen to combine this role with the coordination role for gas, as prescribed in the EU gas security of supply regulation 2017/1938. The role of crisis coordinator is defined as *Gas and Electricity Crisis Manager* is filled by the Director-General for Climate and Energy at the Ministry of Economic Affairs and Climate Policy. As chair of the Departmental Policy Team at the Ministry, he or she prepares the (strategic) decisions on the approach to an electricity crisis. In any event, the Departmental Policy Team includes the usual members and liaison officer(s) from the TSO. Liaison officers from the regional electricity network and electricity grid operators involved can also be invited on the chair's initiative.

The scope of the formal role of the Crisis coordinator makes it impossible for a single person to fill this role in practice; therefore, a Gas and Electricity Crisis Team should be activated. The Crisis Team is supported by the Departmental Crisis Center of the ministry of Economic Affairs. In the event of a significant deterioration of the electricity supply situation for which non-market-based measures must be employed, i.e., an electricity crisis/emergency, this Crisis Team must perform the following tasks in any event:

- Coordination of the overall cohesion within the Ministry in the crisis structure (departmental, interdepartmental, GTS crisis structure, with partners in the electricity sector, with the gas supply and with the security regions).

- Coordination of the provision of information within the Ministry's crisis structure.
- Participation in the European Union's crisis management group.
- Chairing the Departmental Policy Team.
- Representing the chair of the Departmental Policy Team on the Interdepartmental Crisis Management Committee (ICCb).
- Notifying the Minister for Climate and Energy Policy and the Minister of Economic Affairs and Climate Policy.
- Supporting the Minister in the Ministerial Crisis Management Committee (MCCb).

The *Gas and Electricity Crisis Manager* directs the Crisis Team. Within the Crisis Team, coordination of the cohesion is delegated to a crisis coordinator, coordination of the provision of information to an information coordinator, preparation of participation in the EU crisis management group to a policy officer for international affairs, and preparation of the provision of information to and support for the Minister to a management advisor.

The *Gas and Electricity Crisis Manager* can be reached via secretariaatDGKE@minezk.nl.



5. Stakeholder consultations

In accordance with Article 10(1) this chapter describes the mechanisms used for the consultations carried out, for the development of this plan at national and regional level.

5.1. National consultation

The national Risk Preparedness Plan has been consulted with national stakeholders and was finalized in March 2022. Among the responses to the consultation procedure were the TSO, Distribution System Operators, the NRA, the large energy production companies (Energie-Nederland) and the industrial end-users of energy (VEMW). Many of their comments and suggestions have been integrated in this final version. Also, in parallel with the National Crisis Plan Electricity, which has been revised in the end of 2021. The National Crisis Plan Electricity is drawn up in close coordination with many stakeholders as prescribed in Article 10(1) of the Regulation, including TSOs and DSOs.

5.2. Regional consultation

5.2.1. Regional assessment of regional and national consistency

An essential factor in setting-up an effective and efficient crisis management framework is ensuring its overall consistency. Therefore, the interaction between the regional procedures and measures identified in the previous chapters and the policies set out at national level should be assessed. Furthermore, the cross-border impact of the measures of individual countries needs to be assessed. In this context, the Pentalateral Energy Forum organised a regional assessment of the draft national Risk Preparedness Plans amongst its Member States. The focus of this assessment was on cross-checking the consistency of the procedures and measures at national, bilateral and regional level. To achieve this, Competent Authorities shared the English version of their draft Risk Preparedness Plans with the Support Group II of the Forum in May 2021. A dedicated meeting of Support Group II of the Forum was then organized in June 2021, to exchange initial concerns and make clarifications. To align this initiative with the activities on a European level, the European Commission was invited to attend the meeting, and a representative of the Forum was available shortly after to give a presentation of the main results of the outcomes of the regional assessment during a dedicated meeting of the Electricity Coordination Group in June 2021.

The outcomes of this meeting will be included in the progress report on the implementation measures of the regional aspects of the Risk Preparedness Regulation by the Pentalateral Energy Forum, which were presented to Directors-General at the end of June. Afterwards, Penta-members had until mid-July to file written comments to the draft national Risk Preparedness Plans. Member States took these comments into account while finalizing their Risk Preparedness plans.



6. Emergency tests

This chapter reports about the emergency tests and the procedure at regional level. Penta-members earlier carried out a first joint exercise in 2018 based on a MoU on Emergency Planning and Crisis Management concluded in 2017.

The successful exercise enabled the sharing of different national power crisis management mechanisms and established contact between crisis management bodies in the Penta region for the first time. The report after the joint exercise expressed the following:

1. “The exercise goals were met:
 - the participants got to know each other better, even in a national setting, and strengthened the Penta network,
 - awareness was raised on national and cross-border issues arising from a Europe-wide scarcity situation,
 - some best practices were identified and explored,
 - this exercise was a first step in jointly working towards an even better collaboration within the Penta community.
2. Penta sets a good example, but needs to keep on running:
 - Penta is a front runner amongst multilateral forums in the area of crisis management and leads the effort on cross border harmonization
 - Penta needs to build a road map for future improvements in effective crisis prevention and management based on the lessons learned and,
 - the effort needs to be expanded to the EU-level
3. We have to be aware that, in order to maintain grid stability, the technical solution always prevails over political solutions.
4. At TSO level, there are mechanisms and tools in place to coordinate, to operate and to communicate on a daily basis with each other, but in case of electricity crisis prevention and management a formalization of this platform should be encouraged.”

Given the success of the first joint exercise and the identified action points, Penta members acknowledge the importance of continuing to regularly organise joint exercises. Based on the MoU signed in December 2021 and pursuant to article 12 of the Risk Preparedness Regulation, these will be held biannually starting in the fall of 2022. The exercises will mainly aim to assess the coordination, communication and mutual assistance mechanisms. The specifics of the upcoming joint exercises have been drafted and aligned within Support Group II during the finalisation of the Risk Preparedness Plans.

This report was published by:

Ministry of Economic Affairs and Climate Policy
Postbus 20401, 2500 EK The Hague
Bezuidenhoutseweg 73, 2594 AC The Hague
070 379 8911

More information

www.rijksoverheid.nl/ezk
[@MinisterieEZK](https://twitter.com/MinisterieEZK)

15 April 2022