



# Electricity shortage

– guide for organisations  
critical to security of supply

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## Introduction

This public guide is a compilation of general information on electricity shortages and recommendations for organisations on how to prepare for them. The guide was drawn up by the National Emergency Supply Agency (NESA) in cooperation with experts from distribution network companies. The content describing the procedure for electricity shortages is based on the guidelines of Finland's transmission system operator Fingrid.

**The target group of this guide includes companies critical to security of supply and municipalities. Read this guide if:**

- the possibility of an electricity shortage has increased or is expected to increase
- you need instructions on how to develop your preparedness for electricity shortages
- your organisation in general needs further information on electricity shortages and the risk of power outages
- the NESA has issued a recommendation to raise the level of preparedness for disruptions in energy supply

Organisations critical to security of supply must understand the need for and course of the electricity shortage procedure. Each organisation should prepare for the two-hour-long rolling blackouts that will be carried out as part of the electricity shortage procedure as well as for longer power outages that could potentially be caused by storm damage or technical failures, for example.

**The guide consists of three parts:**

1. What is an electricity shortage?
2. How to prepare for electricity shortages
3. Key operators and concepts

At the end of the guide, you will find references to other useful material.



# 1 What is an electricity shortage?

To maintain the stability of the entire electricity system, the generation and consumption of electricity must be matched at all times. During an electricity shortage, the generation and import of electricity does not cover the consumption of electricity. Therefore, consumption must be restricted to maintain generation and balance. This is done through rolling blackouts. An electricity shortage and the regulation of electricity are two different things. These concepts are explained at the end of this guide.

During electricity shortages, the aim is to ensure electricity supply to critical electricity consumers, which are defined in Government Decree VNA981/2022. It should be noted that operators critical to security of supply are not automatically critical electricity consumers.

Being classified as critical does not eliminate the risk of power outages. Therefore, all organisations critical to security of supply must prepare themselves for power outages – both planned and unplanned. The planned and controlled blackouts carried out during electricity shortages are probably more predictable than sudden failure blackouts.

## 1.1 An electricity shortage is always possible

Sudden and significant failures can lead to an electricity shortage. The electricity system is designed to withstand the sudden failure of the largest possible power plant or transmission connection. Although preparations are in place for the most typical types of disruptions, not all risks can be predicted. For example, an increase in electricity consumption as a result of freezing temperatures is predictable. In contrast, technical failures can occur unexpectedly. An electricity shortage can also occur in the summer.

Finland's transmission system operator Fingrid assesses the sufficiency of electricity during the coming winter season annually. Fingrid's estimate indicates the amount of power required in both average and exceptionally cold winter conditions. The estimate is compared to the available electricity generation capacity. These materials are published in autumn and can be found on the Fingrid website.

### IMPORTANT:

The image on the right shows the version updated in January 2025. The most recent estimate is available on the Fingrid website at <https://www.fingrid.fi/en>.

### On a very cold and calm winter day, electricity supply is scarce

Estimate of Finnish power balance in winter 2024-2025	On a very cold and calm winter day	On an average winter day
Available domestic production capacity	11 800 MW	13 600 MW
Estimate consumption	14 550 MW *)	14 000 MW
Domestic power balance, net	-2 750 MW	-400 MW
Import capacity	2 750 MW	2 750 MW
- From Sweden	2 400 MW	2 400 MW
- From Estonia **)	350 MW **)	350 MW

\*) The availability of electricity limits the maximum power consumption, and demand response is activated more by the price of electricity.

\*\*) 650 MW reduction in import capacity from Estonia due to damage to the EstLink 2



### Recommended actions:

First explore the websites of Fingrid and your distribution network company.

Keep up to date with the communications of Fingrid and the Ministry of Economic Affairs and Employment with regard to electricity shortages.

Also keep up to date with the communications of your local distribution network company.

Do not share unofficial bulletins or unconfirmed information about electricity shortages.

Prepare your company's communications on electricity shortages in advance and base them on communications by the authorities.

### IMPORTANT:

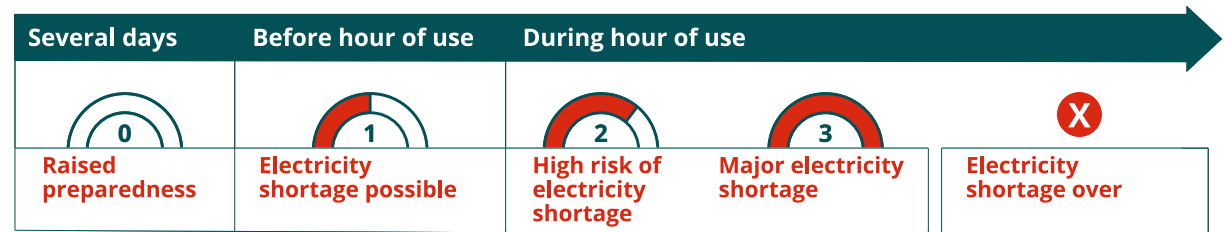
Electricity shortages can progress rapidly and raise public concern. Stay calm. Electricity shortages also attract the interest of the media.



## 1.2 Rolling blackouts protect the electricity system

Rolling blackouts are used to protect Finland's electricity system. If the balance of consumption, generation and import falters, it poses the risk of a nationwide power outage in Finland. Restoring power nationwide takes several hours at least.

Fingrid has prepared a procedure for electricity shortages. The next section presents recommended actions for each phase of this procedure.



### IMPORTANT:

In the worst-case scenario, an electricity shortage can happen very quickly. The duration of rolling blackouts may vary between areas. Distribution network companies provide instructions to the customers in their area of responsibility.

Fingrid is in charge of managing electricity shortages in Finland. In the event of an electricity shortage, Fingrid carries out controlled blackouts lasting for about two hours in a predetermined manner. These rolling blackouts exclude a small number of critical electricity consumers.

### 1.3 A small percentage of electricity consumers are critical

Electricity consumers that are essential to the management and functioning of society are classified as critical. Ensuring electricity supply to these electricity consumers is a matter of priority. Critical electricity consumers are defined in Government Decree VNA981/2022 (hereinafter the Decree). Under this Decree, whether or not an electricity consumer is classified as critical depends on the impact of power outages on functions that are essential to the management and security of society.

Organisations critical to security of supply should be aware that **being critical to security of supply does not guarantee the status of a critical electricity consumer**. The Decree also requires electricity consumers to make their own preparations. Additionally, the owners of critical electricity consumers must prepare for long-lasting power outages.

Critical electricity consumers have been informed of their status by their distribution network companies. Non-critical electricity consumers are classified into at least three groups according to their level of criticality:

1. electricity consumers for which an interruption in electricity supply should be avoided
2. electricity consumers whose electricity supply may be interrupted for a short period of time (about two hours)
3. electricity consumers whose electricity supply may be interrupted for a longer period of time.

#### Recommended actions:

Read the Government Decree on Critical Electricity Consumers (VNA981/2022).

Make preparations according to the Decree and the needs of your operations.

If you feel that your operations qualify you as a critical electricity consumer, but your distribution network company has not contacted you regarding this, contact them.

The Electricity Pool of the National Emergency Supply Organisation (NESO) has compiled examples and guidelines based on the criticality groups specified in the Decree. If necessary, please contact the pool secretary for your sector's pool and the Electricity Pool.

#### IMPORTANT:

Is your organisation a tenant of the property?  
The distribution network company contacts the property's owner as the contractual partner and only contacts the tenant by separate agreement.

## 2 How to prepare for electricity shortages

At best, you can make the preparations for electricity shortages, as well as long power outages, over a long period of time. You can also predict the challenges related to the sufficiency of electricity supply and raise your level of preparedness in good time. At worst, the situation occurs unexpectedly or at very short notice.



## **2.1 Electricity shortage possible – actions during elevated risk conditions**

If the risk of an electricity shortage has increased, Fingrid, the Ministry of Economic Affairs and Employment and distribution network companies will release information about it via their public communications channels. Distribution network companies do not generally send out customer-specific bulletins regarding the risk of electricity shortages.

The NESO provides information about electricity shortages via its public channels and within the NESO. The NESO informs the operators in the NESO separately if there is a need to increase preparedness and build better situational awareness.

### **Electricity shortage possible – recommended actions**

Reduce your electricity consumption. Make use of Motiva's guidelines for saving energy.

Keep up to date with the communications of Fingrid, distribution network companies and the Ministry of Economic Affairs and Employment.

Inform your company's key personnel about the risk of an electricity shortage and review the essential guidelines on what to do during a power outage.

Ensure rapid deployment of any backup power arrangements.

Provide the NESO with information on the situation of your company and sector in accordance with the instructions you have been provided.

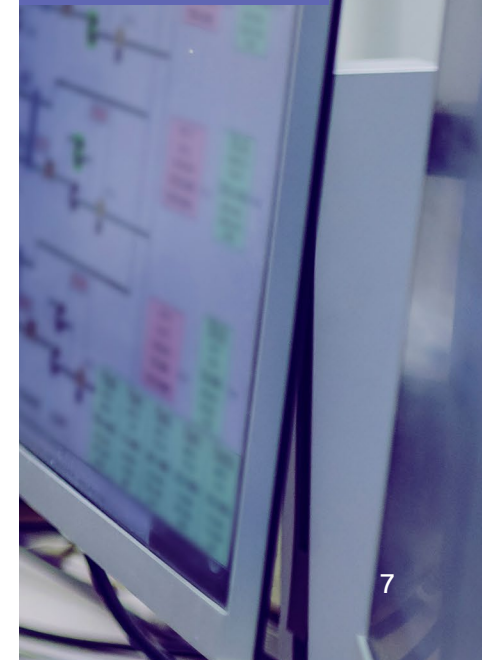
Keep up to date with the NESO's communications. Attend any situational awareness meetings.

Make sure that your company passes on the guidelines provided by the NESO and any information that is meant to be shared within the company.

Property owner: inform your tenants.

### **IMPORTANT:**

Communicate information in a calming manner based on official press releases. Rolling black-outs last for about two hours, they have been practised, and they are used to prevent greater damage. You should wait until the situation has normalised to send non-urgent enquiries to the authorities and distribution network companies.



## **2.2 High risk of electricity shortage – actions as the risk increases**

In the 'High risk of electricity shortage' phase, the actions taken by companies critical to security of supply should be similar to those taken in the 'Electricity shortage possible' phase. Organisations must pay special attention to information sharing and keeping up to date with official communications.

### **High risk of electricity shortage – recommended actions**

Reduce your electricity consumption, particularly during peak hours, if possible.

Take the roughly two-hour-long blackouts into account in your company's processes. If power outages have the potential to cause damage, assess whether it would be appropriate to halt any processes or production in advance.

Inform your company's key personnel about the risk of an electricity shortage.

Keep up to date with the communications of Fingrid, distribution network companies and the Ministry of Economic Affairs and Employment.

Provide the NESAs with information on the situation of your company and sector in accordance with the instructions you have been provided.

Keep up to date with the NESO's communications. Attend any situational awareness meetings.

Make sure that your company passes on the guidelines provided by the NESAs and any information that is meant to be shared within the company.

Property owner: inform your tenants.

### **IMPORTANT:**

As every effort will be made to prevent an electricity shortage, it may not be possible to inform customers in advance about the exact implementation method of rolling blackouts or the areas to be affected.

## 2.3 Electricity shortage – actions during rolling blackouts

The rolling blackouts carried out during an electricity shortage last for about two hours. It may not be possible to inform each customer in detail about the rolling blackouts. However, customers will not be kept in the dark, and information will be provided to the extent possible.

### Rolling blackouts during an electricity shortage – recommended actions

Keep up to date with the communications of Fingrid, distribution network companies and the Ministry of Economic Affairs and Employment.

Prevent dangerous situations. Turn off equipment as necessary. Ensure the safety of equipment and systems for when the electricity supply is restored.

Provide the NESAs with information on the situation of your company and sector in accordance with the instructions you have been provided.

Keep up to date with the NESOs' communications. Attend any situational awareness meetings.

### IMPORTANT:

During blackouts, it is particularly important to prevent dangerous situations.

## 2.4 Actions at the end of rolling blackouts

After a blackout ends, it is important to keep up to date with the communications of the authorities and distribution network companies regarding the follow-up to the situation. You should continue to reduce your electricity consumption, if possible.

### At the end of rolling blackouts – recommended actions

Do not return to full electricity consumption immediately after electricity is restored.

Reduce your electricity consumption, particularly during peak hours, if possible.

Provide the NESAs with information on the situation of your company and sector in accordance with the instructions you have been provided.

Keep up to date with the NESAs' communications. Attend any situational awareness meetings.

## 2.5 Guidelines for long-term preparedness

Companies critical to security of supply and municipalities must be able to function during power outages, including long ones. The NESAs recommend that households keep enough home emergency supplies to last 72 hours. The rolling blackouts during electricity shortages last for about two hours.

### Recommended actions

Plan your organisation's processes and operations so that roughly two-hour-long rolling blackouts do not cause any risks or significant problems.

Ensure leadership and the necessary communication links during blackouts.

A blackout may interrupt the supply of district heat. Be prepared for properties becoming colder. If your heating is based on heat pumps, prepare for the property becoming colder or to heat up the property in an alternate way.

Make sure that your distribution network company has your current contact information. If needed, check your company on the Energy Authority's map.

Make sure that your risk preparedness plans cover power outages.






Prepare an exercise calendar. Include regular blackout exercises in the calendar. For guidelines, see the NESAs' exercise guide for the energy sector.

Promote preparedness for an electricity shortage with animated tabletop exercises. Make sure that the management and key personnel take part in the exercises.

Test the use of backup power regularly. Ensure fuel deliveries.

Ensure uninterrupted UPS power supply to critical systems. Plan and carry out a blackout test with electrical professionals to confirm that you have the right UPS and backup power supply.

## 3 Key operators and concepts

Operator	Role during an electricity shortage	Link
	<p>Fingrid is responsible for communications regarding operative activities. Fingrid uses a three-step system to warn key operators about electricity shortages, and it draws up a press release during each step. These press releases are updated as the situation progresses.</p>	<a href="https://www.fingrid.fi/en/grid/information-regarding-electricity-shortages/">https://www.fingrid.fi/en/grid/information-regarding-electricity-shortages/</a>
 <p>Ministry of Economic Affairs and Employment of Finland</p>	<p>The Ministry of Economic Affairs and Employment publishes a press release when Fingrid announces that the power situation is becoming critical. This press release indicates the possibility of an electricity shortage and highlights the critical nature of morning and afternoon hours.</p>	<a href="https://tem.fi/en/information-on-electricity-shortages">https://tem.fi/en/information-on-electricity-shortages</a>
 <p>energy authority</p>	<p>Oversees the preparedness of distribution network companies for electricity shortages and the classification of electricity consumers by criticality. The Energy Authority is the competent Finnish national authority and crisis coordinator in risk preparedness in the electricity sector. When necessary, it issues an early warning about an electricity crisis in accordance with the EU regulation on risk preparedness in the electricity sector or declares an electricity crisis and maintains contact with the competent authorities in neighbouring countries and the European Commission.</p>	<a href="https://energiavirasto.fi/en/frontpage">https://energiavirasto.fi/en/frontpage</a>
 <p>Huoltovarmuuskeskus Försörjningsberedskapscentralen National Emergency Supply Agency</p>	<p>The NESAs are tasked with monitoring and providing information on the availability and inventory of fuels in actions concerning electricity shortages in the event that a severe electricity shortage is prolonged. The NESAs maintain and share the situational picture of security of supply in a more efficient manner during electricity shortages.</p>	<a href="https://www.huoltovarmuuskeskus.fi/en">https://www.huoltovarmuuskeskus.fi/en</a>
	<p>Motiva is tasked with producing material for the Ministry of Economic Affairs and Employment regarding opportunities to save electricity, as agreed upon with the Ministry.</p>	<a href="https://www.motiva.fi/en">https://www.motiva.fi/en</a>
<p><b>Distribution network companies</b></p>	<p>Provide their customers with information on the situation and tell them that an electricity shortage is the reason for the power outages. These communications rely on press releases by the Ministry of Economic Affairs and Employment and Fingrid.</p>	<p>Identify your distribution network company:  <a href="https://energiavirasto.fi/verkonhaltijat-kartalla">https://energiavirasto.fi/verkonhaltijat-kartalla</a></p>
<p><b>Electricity sales companies</b></p>	<p>The communications by electricity sales companies are based on their own needs. No other specific role.</p>	

## Read more about electricity shortages and preparedness for power outages

Website	Website administrator
<a href="https://caruna.fi/en/products-and-services/electrical-grid/electricity-shortage">https://caruna.fi/en/products-and-services/electrical-grid/electricity-shortage</a>	Caruna Oy
<a href="https://www.elenia.fi/en/power-outages/preparing-for-electricity-shortages">https://www.elenia.fi/en/power-outages/preparing-for-electricity-shortages</a>	Elenia Network Plc
<a href="https://energia.fi/energiatietoa/asiakkaat/varaudu-hairioihin/sahkopula-ja-sahkokatkot/">https://energia.fi/energiatietoa/asiakkaat/varaudu-hairioihin/sahkopula-ja-sahkokatkot/</a>	Finnish Energy
<a href="https://sahkokatkokartta.fi/">https://sahkokatkokartta.fi/</a>	Finnish Energy
<a href="https://www.fingrid.fi/en/grid/information-regarding-electricity-shortages/">https://www.fingrid.fi/en/grid/information-regarding-electricity-shortages/</a>	Fingrid Oyj
<a href="https://www.helen.fi/en/current-topics/trending/electricity-shortage">https://www.helen.fi/en/current-topics/trending/electricity-shortage</a>	Helen Ltd
<a href="https://www.suomi.fi/guides/preparedness/how-to-prepare-for-incidents-and-crises/power-cut">https://www.suomi.fi/guides/preparedness/how-to-prepare-for-incidents-and-crises/power-cut</a>	Suomi.fi
<a href="https://tem.fi/paatos?decisionId=0900908f807fa33b">https://tem.fi/paatos?decisionId=0900908f807fa33b</a>	Ministry of Economic Affairs and Employment (Decree and memorandum, VNA981/2022)

## Concepts

### **Criticality to security of supply, organisation critical to security of supply**

Organisations critical to security of supply play a particularly important role in ensuring the vital functions of society. The NESAs and the pools of the NESOs are responsible for identifying companies critical to security of supply. The NESAs are tasked with supporting companies critical to security of supply so that security of supply can be ensured as best as possible during severe disruptions under normal conditions as well as under emergency conditions.

### **Distribution network company**

Distribution network companies or distribution network operators control a distribution network or a high-voltage distribution network. Distribution network companies are responsible for the distribution of electricity in certain areas. The largest distribution network companies in Finland are Caruna Oy, Elenia Network Plc and Helen Electricity Network Ltd.

### **Transmission system operator**

The responsible transmission system operator is responsible for the technical functionality and reliability of the Finnish electricity system, ensuring the reliable and safe operation of the system. Fingrid Oyj is the designated responsible transmission system operator in Finland, excluding the Åland area, where the responsible transmission system operator is Kraftnät Åland. The main grid is the backbone network for electricity transmission, to which major electricity producers, factories that consume great amounts of electricity, and electricity distribution networks are connected.

### **Critical electricity consumer**

Network operators include critical electricity consumers in their risk preparedness plans. The electricity supply to critical electricity consumers must be ensured as a priority in order to maintain the functions necessary for the management and safety of society. Critical electricity consumers are defined in the Decree. Network operators inform the electricity consumers that they have identified as being critical about the

fact that the electricity consumers in question have been taken into account as critical electricity consumers in the risk preparedness plan. Network operators determine the order of priority of non-critical electricity consumers in preparation for disruptions, electricity shortages and crises. This order of priority takes into account the management and safety of society, the livelihoods of the population, and electricity consumers important to the functioning of the private sector.

### **Rolling blackouts**

Rolling blackouts are about two-hour-long power outages that are used to restrict electricity consumption during electricity shortages.

### **Electricity crisis**

A present or imminent situation in which there is a significant electricity shortage, as determined by EU Member States and as described in their risk preparedness plans, or in which it is impossible to supply electricity to customers.

### **Electricity shortage**

An electricity shortage refers to a situation in which the generation and consumption of electricity in Finland are not in balance. The amount of electricity generated must match the amount consumed at all times. During electricity shortages, consumption has to be restricted in accordance with the availability of electricity. This is done through about two-hour-long rolling blackouts.

### **Regulation of electricity**

The regulation of electricity is linked to a declaration of emergency conditions and a situation in which electricity consumption is restricted in order to save energy and fuels. Restrictions on the use of electricity are provided for in the Emergency Powers Act (29 December 2011/1552), sections 36–39. Unlike an electricity shortage, the regulation of electricity is a way to ensure the continuity of vital functions of society during long-lasting crises.

## Summary table of recommended actions

General recommended actions
First explore the websites of Fingrid and your distribution network company.
Keep up to date with the communications of Fingrid and the Ministry of Economic Affairs and Employment with regard to electricity shortages.
Also keep up to date with the communications of your local distribution network company.
Do not share unofficial bulletins or unconfirmed information about electricity shortages.
Read the Government Decree on Critical Electricity Consumers (VNA981/2022).
Make preparations according to the Decree and the needs of your operations.
If you feel that your operations qualify you as a critical electricity consumer, but your distribution network company has not contacted you regarding this, contact them.
Electricity shortage possible – recommended actions
Reduce your electricity consumption. Make use of Motiva's guidelines for saving energy.
Keep up to date with the communications of Fingrid, distribution network companies and the Ministry of Economic Affairs and Employment.
Inform your company's key personnel about the risk of an electricity shortage and review the essential guidelines on what to do during a power outage.
Ensure rapid deployment of any backup power arrangements.
Provide the NESO with information on the situation of your company and sector in accordance with the instructions you have been provided.
Keep up to date with the NESO's communications. Attend any situational awareness meetings.
High risk of electricity shortage – recommended actions
Reduce your electricity consumption, particularly during peak hours, if possible.
Take the roughly two-hour-long blackouts into account in your company's processes. If power outages have the potential to cause damage, assess whether it would be appropriate to halt any processes or production in advance.
Inform your company's key personnel about the risk of an electricity shortage.
Keep up to date with the communications of Fingrid, distribution network companies and the Ministry of Economic Affairs and Employment.
Provide the NESO with information on the situation of your company and sector in accordance with the instructions you have been provided.
Keep up to date with the NESO's communications. Attend any situational awareness meetings.

### Rolling blackouts during an electricity shortage – recommended actions

Keep up to date with the communications of Fingrid, distribution network companies and the Ministry of Economic Affairs and Employment.

Prevent dangerous situations. Turn off equipment as necessary.

Ensure the safety of equipment and systems for when the electricity supply is restored.

Provide the NESO with information on the situation of your company and sector in accordance with the instructions you have been provided.

Keep up to date with the NESO's communications. Attend any situational awareness meetings.

### At the end of rolling blackouts – recommended actions

Do not return to full electricity consumption immediately after electricity is restored.

Reduce your electricity consumption, particularly during peak hours, if possible.

Provide the NESO with information on the situation of your company and sector in accordance with the instructions you have been provided.

Keep up to date with the NESO's communications. Attend any situational awareness meetings.

### Recommended actions over a long period of time

Plan your organisation's processes and operations so that roughly two-hour-long rolling blackouts do not cause any risks or significant problems.

Ensure leadership and the necessary communication links during blackouts.

A blackout may interrupt the supply of district heat. Be prepared for properties becoming colder. If your heating is based on heat pumps, prepare for the property becoming colder or to heat up the property in an alternate way.

Make sure that your distribution network company has your current contact information. If needed, check your company on the Energy Authority's map.

Make sure that your risk preparedness plans cover power outages.

Prepare an exercise calendar. Include regular blackout exercises in the calendar. For guidelines, see the NESO's exercise guide for the energy sector.

Promote preparedness for an electricity shortage with animated tabletop exercises. Make sure that the management and key personnel take part in the exercises.

Test the use of backup power regularly. Ensure fuel deliveries.

Ensure uninterrupted UPS power supply to critical systems. Plan and carry out a blackout test with electrical professionals to confirm that you have the right UPS and backup power supply.



Huoltovarmuuskeskus  
Försörjningsberedskapscentralen  
National Emergency Supply Agency

