

# Possible disruption of services due to natural disasters

## User tips for possible long-term service disruption of utility systems due to natural disasters

The Civil Protection Agency has declared a state of uncertainty in Suðurnes due to earthquakes and a possible volcanic eruption. It is clear that conditions may change very quickly in the event of a volcanic eruption, and in certain scenarios of such events, socially important infrastructure could be at risk. This refers to the distribution of electricity, hot water, and cold water. Hot water for residents and businesses in Reykjanes is produced in the geothermal power plant in Svartsengi. Cold water for most residents and businesses in Reykjanes comes from water sources in Lágur, which is a short distance west of Svartsengi. These water sources also play a role for the heating utility, because the cold water from them is led to the geothermal power plant in Svartsengi and heated there to be sent to the heating utility's system, as mentioned above. Whether one or both of these resources, i.e. hot and cold water, goes out depends on where the eruption occurs and how the lava flow from it behaves. The suggestions below discuss reactions to the conditions that may arise, i.e. power outages, water outages, and hot water outages, but also the scenario that access to these services will be limited. In that context, it is worth noting that HS Veitur, HS Orka, Landsnet, and the government are working on responses and possible aids should these circumstances arise.

### Utilities liability and loss minimisation

Please note that homeowners' systems, i.e. house utilities (electrical pipes, heating pipes, and water pipes) are the property and responsibility of every homeowner, and it is necessary that homeowners do what is in their power to prevent or minimise damage to these systems should a natural disaster reduce access to the service. However, it should be kept in mind that in the event of an evacuation by the Civil Protection Agency, there may not be time to attend to these suggestions, as it is important that the first priority is always to save human lives.

### Special suggestions for prolonged disruption of hot and/or cold water

In the event that the disruption of services lasts for a long period of time, special measures must be taken to protect the house utilities against damage, especially if the weather is cold and there is a risk of frost damage in buildings. In these circumstances, professional guidance must be sought in order to drain water from the house utilities (in some cases, both heating pipes and drinking water pipes). Care must be taken to never leave open faucets in a water outage due to the risk of water damage when water is returned to the distribution systems.



## Electricity use, if hot water becomes unavailable and electricity is used for heating:

### Choosing equipment if electricity is to be used for domestic heating, and its use

In the event that the heating utility becomes unavailable for a prolonged period of time, it is important to remember that the electricity distribution system is not built for the load of all residents heating their houses with electricity. It is therefore important that residents limit electricity use so that each home, each apartment, uses a maximum of 2,500 W (2.5 kW) and for central heating. It is very important that this is kept in mind when choosing equipment, and that every effort is made to save energy in other household electricity use. It is clear that the above maximum is only sufficient for minimum heating of each apartment. It is important that everyone respects these limits in order to ensure the safety of all systems, i.e. both HS Veitur's distribution system, but most importantly, the electrical wiring of the respective apartment.

### Some tips on choosing equipment and its use:

- *It is important that the equipment as a whole does not use more than 2,500 W (2.5 kW.)*
- It is better to use several smaller heaters that can be spread around the premises, rather than one large one. By using several smaller radiators, it is possible to spread the load on the sockets that are in the house.
- Do not go for heaters larger than 1,000 W (1 kW), and then you can have a maximum of two of them running at the same time. It may also be convenient, depending on the size and number of rooms, to have five 500 W (0.5 kW) heaters and distribute them around the home. Larger electric heaters can be set to 1,000 W (kW) or 500 W (kW) as needed, so that the total use (combined use of all electric heaters in the apartment) does not exceed the maximum use.
- When buying new heaters, always read the data sheets that come with it and follow the manufacturer's instructions. It is important to use heaters with stability control and an automatic switch-off if the heater overheats.
- If you are intending to use heaters that you already have i.e., in the garage or storage room, check them carefully and make sure they are in good condition, the same applies to heaters borrowed from friends and family.
- Never place clothes or other items to dry on electric heaters, as this can cause a fire.
- Only one heater should be connected per electrical circuit. It is recommended to read the information in the fuse box about the division of circuits by space, and spread the heaters evenly on the circuits.
- Do not use multiple socket outlets when connecting electric heaters. They should only be connected directly to an earthed socket on the wall and you must ensure that the size of the socket is adequate.
- The heater should always be positioned so that it does not create a fire hazard, and thus the risk of it tipping over. Do not leave the heater running for a long time when no one is home.
- It is important to limit the use of other electricity as much as possible in the event that the heating utility is not available and electricity has to be used for central heating and to minimise the loss of heat. [See more information on energy saving below].



### Electric cars and other cars:

It is important to always have the electric car fully charged at home, and likewise that the fuel tanks are full in other cars, so that the cars are accessible in the event of an evacuation. If a state of emergency has been declared and electricity consumption needs to be limited, it is important that electric cars are not charged at home, but only at fast charging stations. Keep in mind that it is important to prioritize the use of electricity for household use and for central heating, see above. The system cannot handle home charging in such conditions.



### Energy Savings:

These suggestions aim to limit the use of electricity in the event that the heating utility is not available and electricity has to be used for central heating as previously described. It should be borne in mind that in these conditions it is unlikely that it will be possible to maintain full heat in dwellings. These suggestions mainly concern electricity use and minimising heat loss:

It is important to prioritize electricity use and remove all unnecessary use and remove use that the system will not handle as described above. The main examples are the following:

- Electric hot tubs
- Sauna, steam rooms, etc.
- Home charging of electric cars
- All outdoor heat sources, e.g. heating mats in the pavement or driveways and infrared heat sources for outdoor use.

It is also recommended to minimise the use of other electronic devices and use the energy wisely, for example:

- For cooking, it doesn't matter if you use the stovetop or the electric kettle, but you always have to make sure that you use the energy wisely, and don't heat things unnecessarily. In those cases it is better to let, for example, the pasta water cool down rather than pouring it into the sink. Then the heat from the water helps to heat up the kitchen. We also recommend turning off radiators or other energy-intensive loads while cooking.
- Minimise the use of washing machines and dishwashers, and if they are used, make sure to fully utilise their capacity. Washing at 60°C instead of 90°C makes a big difference. The same applies to dishwashers. Use lower temperature settings. Likewise, using systems that take longer instead of quick washes (use an economy system). Dryers are very energy intensive and it is best not to use them if electricity is scarce.
- It is possible to use an outdoor cooking device such as a gas barbeque or a Primus. Never use these devices indoors.
- Limit the use of lights. Preferably use light sources that utilise energy the best. This applies, for example, to newer LED lights. In order to limit heat loss, it is necessary to close windows, it may be necessary to seal openable sashes more than usual to further reduce heat loss.
- It is also good to use the curtains and draw them over the windows when the sun is not shining.
- Close the door to rooms that are not in use and do not need to be heated.

## Preparing for a possible power outage

General instructions for power outages The Civil Protection Agency has compiled various instructions regarding reactions in a natural disaster situation, where, for example, power outages are taken into account. To that end, it is recommended that households prepare a so-called emergency box, which contains, among other things, equipment that is necessary to have in the event of a power outage. You can find these instructions at [www.almannavarnir.is/english](http://www.almannavarnir.is/english). The Civil Protection Agency's instructions also place great emphasis on preparing possible responses in advance, to the extent that this is possible. You can also refer to information on the website of the Icelandic Red Cross, [www.3dagar.is](http://www.3dagar.is), which has a special button on "What should I in case of an evacuation?" and pictorial information about emergency or precaution boxes. Other things to keep in mind are electrical appliances that may have been running when the power went out, washing machines, dryers, etc. The same goes for other devices that may pose a danger when they start back up when the power comes back on, e.g. devices that emit heat, or the like. It is also necessary to remember refrigerators and freezers if it can be assumed that the power outage will persist. It is important to unplug electrical equipment that is sensitive to power outages. The aforementioned factors aim to ensure that there is room for action and that there is no emergency evacuation by The Civil Protection Agency.