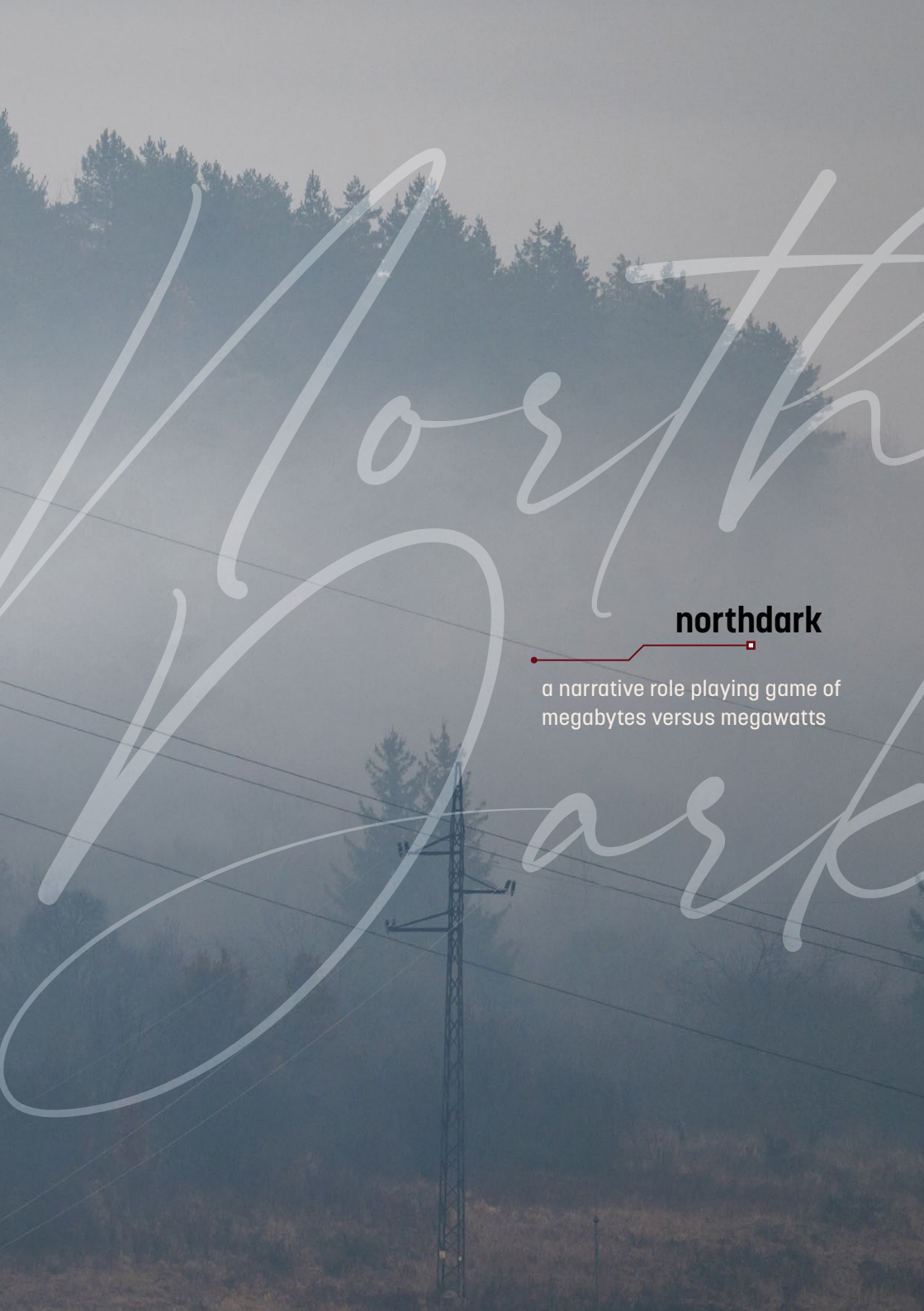
northdark
a narrative role playing game of
megabytes versus megawatts

northdark

Game created by Laura Watts, Sand14.com, 2025, in collaboration with the research team at Linköping University: Flora Mary Bartlett, Harald Rohracher, Johanna Sefyrin, Julia Velkova.

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// WHAT ;

This is a game for 1-2 players where you create an unfolding story of being trapped in a data centre with limited power. It is set in a Nordic forest at night during a snowstorm. It is a game of choices. Will you keep the data centre going or keep the lights on in your local town, where your friends and family huddle in the cold?

The aim of the game is to tell a story. This rulebook gives you a structure for doing that. But the rules do not cover every detail. You create the details, and you can create them differently every time you play.

Using simple components (dice, deck of cards, tokens, and a microphone) you record what happens each hour, through the night, as the snowstorm passes. Will you make it home? How will you change the data centre to keep its lights on? Will you plunge the local town into darkness?

The game is a mixture of dark, surreal, but also hopeful elements. This is a narrative game so explore what you find interesting, within your own limits. If you get stuck on a particular card prompt, don't use it, or invent something you prefer. Tell the story you feel inspired to tell.

What inspired this

The game is based on social research conducted around existing and planned data centres in the Nordic region. The project was 'Megabytes versus Megawatts' which ran 2023 to 2025 at Linköping University, Sweden. You can read more about the project at liu.se/en/research/megabytes-vs-megawatts.

The cards are inspired by real events narrated to the researchers by those working in the data centre industry. The cards also reflect the researchers' own experiences–the objects and sounds, the creatures and smells–from visiting the inside and outside of Nordic data centres.

The cards represent a fictional place and people, however, so make them your own.

// WHO ;

You are an **engineer** who works at a large data centre, hidden in the forest outside a small town. If there are 2 of you playing then the other person is a **security guard** who patrols the site. You answered a late night, emergency call from your boss to find out what is happening there.

A fierce snowstorm is raging. It brought down a power cable, leaving the town in freezing darkness. The only electricity available is from local backup systems. But the data centre is a major user of electricity so it will have to contend with the town for the limited supply.

You get out of the car, gloves and hood tight against the biting air. Your job is to keep the data centre going until the storm blows out, without using too much grid electricity. Back home, people you care about are waiting in the cold for the power to return. Tough choices lie ahead.

The storm lashes broken branches and icy snow into your face. The fir trees beyond the wire fence are dancing, wild. The ground cracks and a tree leans over you like a troll. Soil and snow explode into the air. The tree falls and hits the road, blocking the entrance.

Your heart thuds. The snow is coloured red by the emergency lighting. The data centre building is a dark, wine-coloured cube. Your only source of light is your phone, which will last a couple of hours. But it has no signal. Your sole connection to the outside world is by an emergency walkie-talkie radio. But even that is just transmitting static.

Clearly, you are not going home any time soon.

// HOW ;

Find the following components, which you need to play the game:

- Standard **deck of cards** with no jokers. These cards will give you prompts for activities that happen during a turn.
- **6-sided die**. You roll the die to find out how many card prompts you draw that turn–how many activities happen. Sometimes cards will also tell you to roll a die.
- **10 tokens** of some kind, such as a collection of coins, stones, sticky notes, or paperclips. The tokens should be similar to each other. The tokens measure the amount of electricity on the grid and how it is distributed between the data centre and the town.
- Sheet of **paper and a pen**. This will be where you keep track of the energy tokens.
- **Audio recorder** to capture your hourly log, such as a recording app on your phone. You could also write your log on paper or on a computer. Use whatever you feel comfortable with.

How it ends

The game ends when you leave the data centre and start walking home through the forest and snowstorm. Some card prompts will give you this option. You can also choose to leave at any time.

The best ending is to prepare the data centre so it can cope with the limited electricity supply and then find a way to walk home without getting lost in the cold and dark.

There are many ways it can end badly.

If the town runs out of electricity or the data centre runs out of electricity (all the tokens on one side or the other) then either you or people you care about are going to freeze, so you must try and get home immediately.

Remember: when you save grid electricity in one place (move a token between town and data centre) it becomes available in the other. You should not save so much energy in one place that you reduce its electricity load to zero.

In all cases when you leave the data centre record your final log and read the *Debrief* page. This ends your game.

// BEGIN:

Take your blank sheet of paper and copy the player mat (p.14-15). This shows you where to put everything. You should:

- Draw a line down the middle of the page.
- Place 4 tokens in a pile on the left. Write 'data centre' on this side. This is the amount of energy available to the data centre.
- Place 4 other tokens in a pile on the right side. This is the amount of energy available to the town. Decide on the name of the local town. Write the town name on this side.
- Place the other 2 tokens in a pile elsewhere. These are energy tokens that you might be able to add to the town or data centre.
- Shuffle the deck of cards and place the die next to them.

If you have 2 players then decide who is the engineer recording the log. The other player, the security guard, might keep their own, unofficial log as an option.

Record your first hourly log by reading the following script.

"This is the engineer's log. Hour one. The exit is blocked. A tree has fallen across the road. The main building seems to be fine. Emergency lighting is active so there is some power on site. But there is no mobile phone signal. The only communication is through the emergency radio. But all I am getting is static. The first order of business is to get some lighting. Something better than the torch on this phone. Then I will be able to see what's happening in the data centre. This is engineer [your name], logging off."

Now you are ready to play.

// PLAY ;

Each turn is 1 hour in the game.
(In the real world you can take as long as you like and even pause or come back to the game later).

There are 2 phases in every turn:

1 Activities

- Roll the die and draw that number of cards from the deck. These are the activities that happen over the hour. Sometimes it will be really busy; sometimes not much will happen.
- Turn over the cards and look them up in the Eco System Manual.
- Decide which order to complete the cards in; some may link together.
- Complete the activities until you are done.

2 Log

- Take a moment to consider what you have done in the last hour, what the status of the data centre and the town is, and how you feel about it all. Think about how what you have done this hour connects to previous hours.
- Record your hourly log. You should start with "Hour [x]". Then summarise the hour and all that you have done. End the log with "This is engineer [your name] logging off." Any investigation into the emergency will then have evidence of what you did and did not do.

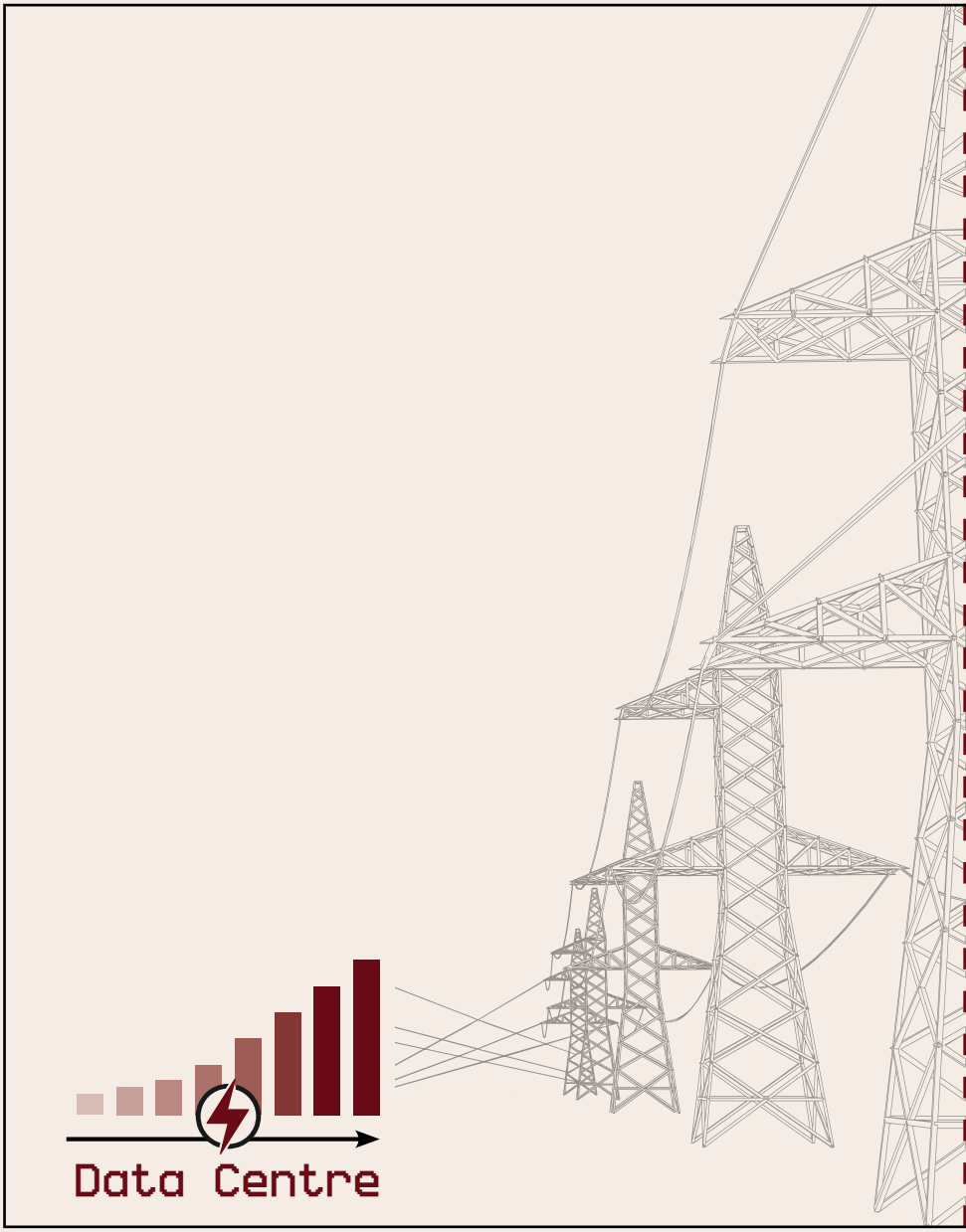
Playing as two

Discuss who does which activity. Perhaps split them up or do some together. Consider how you feel about the activities. Maybe you disagree on some things. When you are creating the log make sure you reflect on who did what, and any differences of opinions or concerns.

Activities

Card Deck

Dice



northdark Player Mat

This Turn

Town

Spare Tokens

// ECO SYSTEM MANUAL ;

Use this manual to look up each card you draw. This will give you an activity that happens during the hour.

The data centre is more than just a building or a technology. The data centre is an ecosystem. It includes connections to the electricity network, to people, and to the forest outside.

The Ecosystem has 4 different elements: People, Place, Power, and Processing.

HEARTS. People.

The people who are indispensable in your life right now, both those who can help keep the data centre lights on, and your friends and family in town who are affected by the storm. When you draw a heart, you connect with them.

DIAMONDS. Place.

Diamonds represent places in and around the data centre, both the building and the forest outside. When you draw a diamond you might find unexpected places and visitors.

SPADES. Processing.

Data centres exist to process and store data, some critical, some forgotten. But processing data costs energy. When you draw a spade you may have to make choices about what data is worth, and what computing processes are really necessary in the storm.

CLUBS. Power.

Power is everything in a data centre. Clubs represents the electricity and energy systems in and around the data centre. Drawing a club will impact how much power you have to keep the lights on.

// HEARTS ;

The people who are indispensable in your life right now, both those who can help keep the data centre lights on, and your friends and family in town who are affected by the storm. When you draw a heart, you connect with them.

2 You check the time. Your friend is in surgery at the hospital. The hospital has backup power, but the digital medical records are stored here. What might happen to your friend if the hospital cannot access their medical file? What could you do to keep the records available?

3 The head of the local housing cooperative is on the radio. They have electricity stored in their home batteries and electric cars to trade. If you have found honey or tomatoes you can make them a sweet offer (add 1 token from the pile to the data centre).

4 A woman from the electricity grid operator crackles through the static. They can shut down the baking factory and give you power (move 1 token from the town). The factory is a major employer in town. Is the data centre more important than the factory? Who do you know who works at the factory? What do you reply?

5 You are hungry and wish you had brought some food. Who likes to cook at home? Will they be cooking anything tonight? Will they be worried about you? Are you worried about them?

6 The head of the local housing cooperative is on the radio, desperate. They use the data centre to host the energy management software that keeps their homes going–everything from heating to car charging. Do you run their software (move a token to the data centre) or ignore their request? How will your friends, who live in this cooperative, feel about your choice?

7 Someone from the town council crisis committee keeps breaking through the static. They want to know the status of the data centre, and what you can do to help

the town in this emergency. What will you tell them? Do you know them?

8 Up in the hills above you is a line of wind turbines that were never built. The turbines were intended to offset the carbon of a major tech company, but the community protested. Did anyone you know protest? How do you feel about not having the wind turbines right now?

9 The snow is blinding outside. The track to your abandoned car is becoming hard to see. You remember that a snowplough driver died right there last year, just sitting in his cabin. Is that his anguished cry on the wind?

10 The town council crisis committee shouts from the radio. They need your help. An old friend runs the local-owned wind turbines on the other side of town but will not hand over control. The wind turbines are switched off due to the storm, but the council wants to turn them on. What do you know about this friend? What do you tell the committee?

J You usually work a shift with another colleague. What habit of theirs do you miss? How would things be better or worse if they were with you?

Q You walk into an empty server room, silent and waiting. There are pots of old paint and a ping pong table, here. What's the story of how the ping pong table got here? Who are you reminded of? Did you ever play?

K There is a makeshift desk in the server room. It is piled high with random equipment, from hard drives and usb sticks to marker pens and empty cans. Is there anything you can use here?

A The national grid is broadcasting an emergency message. The storm has brought down another power line. The data centre will be cut off from the grid in one hour so they can repair the line. This is your last hour here. What are you going to do before you leave? How will you prepare to walk home? (End the game).

// DIAMONDS ;

Diamonds represent places in and around the data centre, both the building and the forest outside. When you draw a diamond you might find unexpected places and visitors.

2 You walk out to inspect the fallen tree. It fell near the company's bee hives. The bees support the forest wildlife. The beekeepers make rich dark honey, named after the data centre. The hives are fine, but you find a lost honey jar in the snow. You take the honey.

3 You peer through the wire fence into the forest. There is a sound on the roaring wind. A series of barks. Not a dog. Something bigger. There is movement in the dark. You blink. A reindeer, owned by the local Sámi village no doubt, stands motionless between the fence and the trees as though teleported. What is it telling you?

4 You are patrolling the perimeter of the site. You stay close to the wire fence so you don't lose your way in the snowstorm. Out in the forest shadows move. Strange blue eyes reflect what little light there is. What is that?

5 You look up into the beams of the wooden ceiling, and inhale. You can almost smell the wood resin. The data centre was built from local forest wood. What does the smell evoke for you? What does it promise?

6 You hear a high splintering sound on the wind. One panel of the great industrial greenhouse, warmed by the data centre, has smashed. Snow is already blowing in and covering the tomatoes. You need to patch the hole. Move an energy token to the data centre, as its heating system tries to compensate.

7 It's late. You dream of cross country ski-tracks under your feet. There was a ski-track through here, once, before the data centre came. Did you ski through the forest? How do you hope the forest will change in the future? Will the data centre still be here?

8 You wander the data centre looking for inspiration. You arrive at a door painted to look like the entrance to the blue police box that is Doctor Who's time machine from the television show. Everyone calls it the 'Doctor Who door'. What is on the other side? Does it inspire any ideas?

9 You hear skittering beneath your feet. You pull up a floor plate. The once neat bundle of cables has been pulled apart. Copper wire is showing. Rats have been chewing at the cables again. You ought to check the rat traps.

10 You lose yourself in the snowstorm for a moment and trip over the hatch to the bomb shelter. You climb down into the bunker. You find a wind-up radio and tune in to the weather report. Roll a die. This is the number of hours the weather service expects the storm to last.

J The visitor room has a big screen showing the company's vision for what a green data centre looks like in a sustainable future. You have seen it a hundred times. What's your favourite bit of the film?

Q You walk out into the snow, checking equipment. You stop where the tulip bulbs are planted. A Dutch architect donated them. When the shoots come through each spring you feel hope. What do you hope for right now?

K You turn a corner at the far end of the server room and see a hare. It is standing on its hind legs, ears upright, eyes fixed on you. Then it bounds off, around the corner. You follow. It stops in front of a server cabinet, paws at the door, and then runs off. Is the hare trying to tell you something?

A You keep seeing a hare in the server room. It appears again and you follow. It slips through an open floor plate and you peer into the cable space. There is a rugged torch. You grab it, not quite believing your luck. The torch will shine a path through the forest. You might be able to reach home. Do you have spare batteries? You can make your last log and leave the data centre (end the game), if you choose.

// SPADES ;

Data centres exist to process and store data, some critical, some forgotten. But processing data costs energy. When you draw a spade you may have to make choices about what data is worth, and what computing processes are really necessary in the storm.

2 Streaming services from the data centre are demanding huge energy. People are watching films as they wait out the storm. Do you switch off streaming and save energy (move a token from the data centre)? What are the consequences of you breaking the contract with the big streaming companies?

3 The town council crisis committee barks out a list over the radio. She is telling you which data to prioritise for the town. Medical records are at the top. The list does not include the company's main customers. Do you implement this list from the town council and risk your job? Or do you stick with the company's priorities?

4 A voice from the local housing cooperative comes on the radio. They offer old servers in an apartment basement, which are running on battery backup power. They could store essential data until the storm passes. It is unorthodox and insecure. Do you risk it? What if the data leaks?

5 The stress is getting to you. You remember that most of the data is still stored on hard drives. If the power goes out they will retain data. Do you just 'pull the plug' and turn off the data centre (move all tokens to the town)? This will save the town but may end your career. If you do, record your last log and start walking home (end the game).

6 Your boss yells on the radio that the data centre uptime is at risk. This is what customers pay for. Your boss demands you commit to keeping all servers 'up and running' no matter what. He offers you a bonus as an incentive. Will you make that commitment?

7 You check the data centre efficiency: high efficiency is good, even if the task is trivial. But tonight you are unsure whether this is true. Could you save energy by stopping trivial data tasks (move a token from the data centre)? What do think is a trivial task? What is an important task?

8 There are security cameras everywhere on site. They use AI to do facial recognition and tracking. But AI takes power. Do you disobey company policy and switch off the security cameras (move a token from the data centre). What are the consequences of making the site less secure? What are the consequences to you?

9 You are bored. The servers are named after cloud formations: Stratus, Cirrus, Nebula. What would be more original names? The local school children visited last week. What names might they give them? Do you rename the servers?

10 You know that half the data has not been accessed in the last year. You could pull the plug on those servers. The data would still be there but not accessible. It could be important data to someone. You hope not. Do you pull the plug (move a token from the data centre)?

J You find the manual with instructions on how to safely shut down the data centre. This could save the town. Do you follow the instructions (move all tokens to the town and end the game)? What are the consequences for the data centre, and your job?

Q Your grandmother passed away last year. Her online world, her photos and posts, are stored here. She is in the data centre with you. Do you see her ghost in dark corners? Are there other dead people from the town in here?

K Your boss is on the radio. A major customer wants to move all their data to another data centre but the bandwidth is too low because everyone is doing the same. He wants you to stop everything else, including transfers of medical data to the hospital. What do you reply?

A The town council crisis committee radio's in with an idea. They could take control of the data centre and its energy directly. Most of the data is for the town anyway, they argue. Do you help them stage a takeover of the data centre? Or do you refuse? Which decision makes you a hero? If you agree, you must figure out how and then leave (end the game).

// CLUBS ; ♣

Power is everything in a data centre. Clubs represents the electricity and energy systems in and around the data centre. Drawing a club will impact how much power you have to keep the lights on.

2 You have found a way to switch on the overhead lights and the outside floodlights. This will make it easier to see. If you switch the lights on move 1 token to the data centre. What object do you see as a result of having more light? Is it worth it?

3 You find the old diesel backup generator. Do you switch it on, and burn the fossil fuel (add a token from the pile to the data centre)? It will break the carbon neutral contract with the town and data centre customers. If you switch it on, roll a dice and divide by 2. This is the number of hours you can keep the additional token (after that number of turns it returns to the pile). How do you feel about this?

4 There is a flash of light and sparks from the High Voltage AC power room. The lights flicker but the data centre stays on. If there is another power spike then the fuses will blow, and you will be plunged into forest darkness. What do you fear?

5 The hydrogen fuel cell, your backup power, starts beeping. It is a big blue shipping container inside the power room. It combines stored hydrogen with oxygen to release energy and water. But a water pipe is frozen somewhere and needs fixing. How will you get it working?

6 There is a mobile phone tower at the corner of the site. Its backup power ran out hours ago. You manage to prise open the panel to the power unit and fiddle with it. You get mobile phone signal for a brief moment and send a text message. What do you say and to whom?

7 The server room has become hot and silent. The cooling fans have stopped. The computing equipment is over-heating. What do you do? If you get the cooling

fans working, move a token to the data centre. If you do not, some servers are permanently damaged and critical data for the hospital is lost. What are the consequences for you and others?

8 The staff kitchen, the microwave and kettle, is powered by a home lithium battery that was charged by two solar panels before the storm hit. What else could you do with that battery power? Does it help you in some way?

9 You are getting desperate. Your electric car is blocked by the tree but it has a car battery and a vehicle-to-grid charger. You could suck out the car's power (add a token from the pile to data centre). What could you do with that energy? What else could you do with your car?

10 The data centre no longer produces enough heat to keep the on-site industrial greenhouses warm. All the tomato plants will freeze and die. To protect the plants you need to process more data (move a token to the data centre from the town). What will you do?

J The hydrogen electrolyser is a green shipping container outside in the snow. You could switch it on and use electricity to split water and store the hydrogen. This will give the data centre backup power at the expense of the town. If you do, move a token from the town every hour (until you turn it off). Will you tell the town?

Q The woman from the electricity grid operator comes over the radio. She wants to use your backup power to balance the grid. It means shutting down the data centre, but you will save the town. If you do, this will be the last log you make before you start walking home (end the game). What do you say?

K The hydrogen fuel cell, your backup power, kicks into overdrive. The hydrogen tanks start to empty as electricity is generated from the gas' reaction with oxygen. Maybe the company is making more money from selling electricity than data right now. Roll a dice and divide by 2. That is how long you have before the backup power runs out and you have to start walking home. How do you feel?

A With no warning, the lights tremble and then go out. The data centre falls silent. You stand in utter darkness. Outside is more darkness and an ice wind between snow heavy trees. What do you feel? Where will you go? This is your last log, what do you say? (End the game.)

// DEBRIEF ;

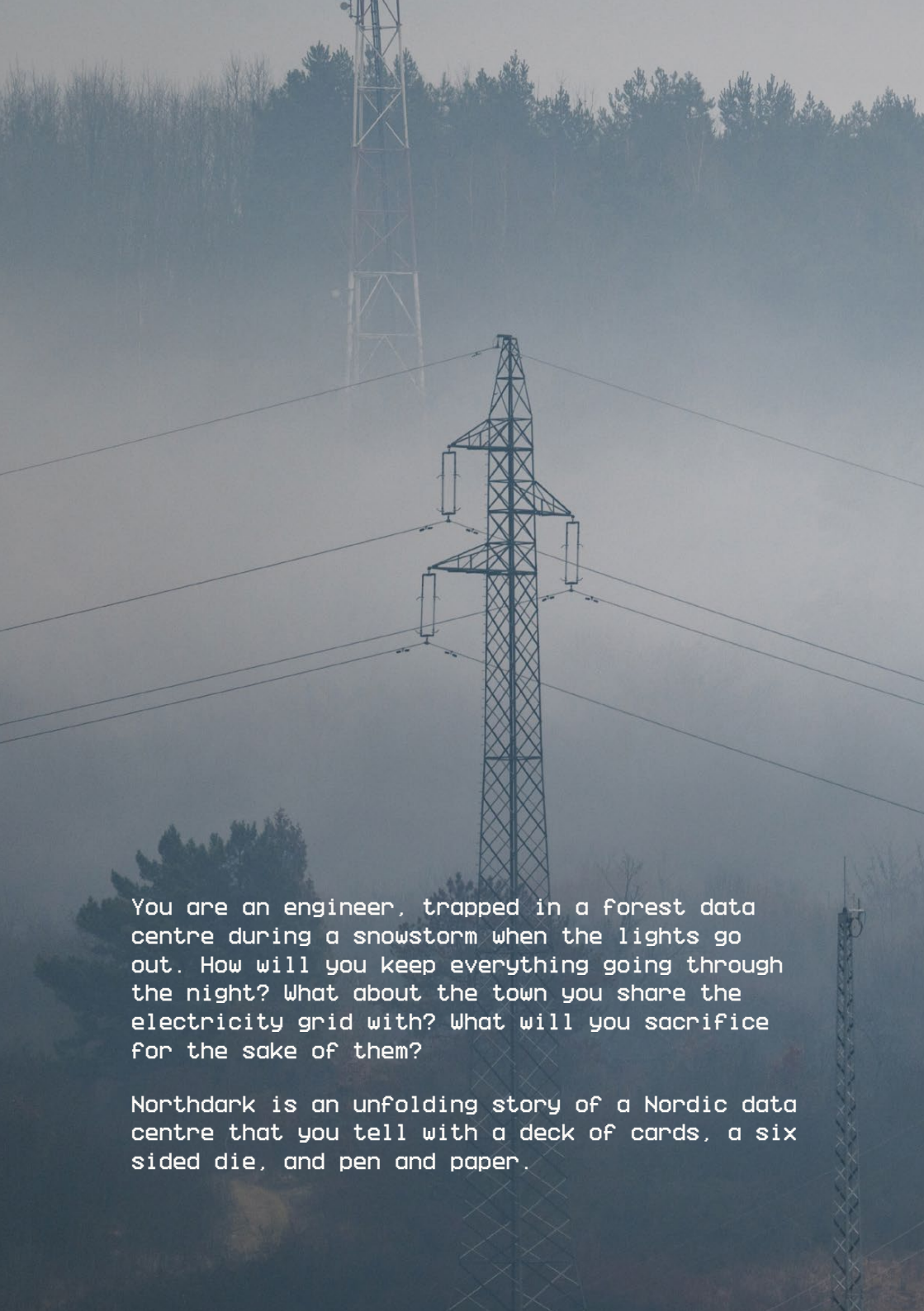
…Take a moment…
…get warm.

Maybe you made it home. Maybe you didn't. Maybe you became lost in the trees and snow. Maybe a reindeer herder found you.

There will be an investigation into what happened at the data centre. Your log, your voice, is the story everyone remembers.

What are the consequences for you, for your friends and family, for the town and company? What might they learn from this crisis? What did you change, in some small way? Or will the mistakes of the past just repeat?

When you close this rulebook, what will you do with your log? Do you want to share your experience and log with others? The researchers who made this game would be interested to hear from you. Use the hashtag #NorthDarkGame if you post comments on social media.



You are an engineer, trapped in a forest data centre during a snowstorm when the lights go out. How will you keep everything going through the night? What about the town you share the electricity grid with? What will you sacrifice for the sake of them?

Northdark is an unfolding story of a Nordic data centre that you tell with a deck of cards, a six sided die, and pen and paper.