Finland's most energetic customer magazine » 4/2019

HELEN

The importance of wind

Without wind, you couldn't fly a kite — and life as we know it wouldn't exist on Earth

» p. 11

Psst! Do you know what the highest recorded wind speed in Finland is? Read more about wind on page 11.

Let the wind blow!

EDITORIAL » "And we still don't have wind power..." sang Ultra Bra 20 years ago in their song Ilmiöitä ("Phenomena"). It's a statement that is no longer true today. The rate of wind power construction is increasing around the world, and Finland is no exception.

Finland's wind power production is currently at about 2,100 MWh, which represents some 9% of the country's total energy production. A further 1,000 MW worth of capacity is already under construction. According to the Finnish Wind Power Association, many times more that amount will be built in the near future. The target is a fivefold increase in wind power production capacity by 2030, which would see it account for 30% of Finland's total electricity consumption.

Helen sees wind power as a promising form of producing electricity. We have invested in our associated companies Suomen Hyötytuuli and Suomen Merituuli. We aim to increase our wind power holdings going forward.

As a Helen customer, you can influence where your electricity is produced today and in the future. You can choose Helen's Environmental Electricity product or wind power. Let's work together and usher in the winds of change!

"You can choose wind power."

Mirka Mäkelä Team Leader, Energy System Development

A SOURCE OF PRIDE

Open 24/7

No matter where in Finland you are moving to, you can call us 24/7 to sort out your electricity contract with no fuss. Helen's 24/7 phone service for movers is always ready to help our existing customers and new customers alike on 09 617 8020. The service is the only one of its kind in Finland.

PHOTO: ANNA-KAISA HÄNNINEN

Helen's 24/7 phone service for movers is based at our offices in Mikkeli (pictured), Kuopio and Varkaus.

HELEN

PUBLISHER Helen Ltd, Kampinkuja 2, Helsinki, 00090 HELEN, tel. 09 6171 **EDITOR-IN-CHIEF** Seija Uusitalo **EDITORIAL TEAM** Mari Eskelinen, Anna Huotari, Eija Lehtomäki, Tiina-Kaisa Saukkola, Petri Vihavainen, Mia Virolainen, Anu Ylänen **PUBLISHING AGENCY** A-lehdet Content Studio **COVER PHOTOGRAPHY** Antti Vettenranta **REPRO** Aste Helsinki Ltd **PRINTED BY** UPC Print, Vaasa **ISSN** 1455-9528 **HELEN MAGAZINE** is Helen Ltd's and Helen Electricity Network Ltd's shared customer benefit. The magazine is published four times per year. The next issue will come out in February 2020. To cancel your subscription, send a message to asiakaslehdet@helen.fi. Address change notifications: helen.fi. Our services online: helen.fi and helensahkoverkko.fi

Energy!

Read about current phenomena and news. Pick up tips for smooth daily life.

PHOTO: GETTY IMAGES

#climate change **Sustainability through plant-based food! Students from the University of Helsinki's degree programme for future teachers of home economics joined Helen's customer event in November to present a plant-based menu for festive occasions during the holiday period. You can find the recipes online at helen.fi/kasvisreseptit.**

#solarpower **Helen is building Finland's largest roof-mounted solar power plant at the Elo shopping centre in Ylöjärvi. With more than 3,000 panels, it will be Finland's first solar power plant exceeding one megawatt. The plant will be completed in November.**

WHEN YOU WORK FROM HOME...

- ✓ ORGANISE YOUR WORKSTATION IN SUCH A WAY AS TO DRAW A CLEAR BOUNDARY BETWEEN WORK AND FREE TIME.
- ✓ PLAN YOUR DAY AHEAD AND DON'T FORGET TO TAKE BREAKS.
- ✓ MAKE IT CLEAR TO YOUR FAMILY MEMBERS THAT YOU NEED TO WORK UNDISTURBED.
- ✓ MAINTAIN A GOOD POSTURE AND KEEP YOUR NECK ERECT. USE PILLOWS FOR SUPPORT IF YOU WORK LYING DOWN.
- ✓ WORK STANDING UP OCCASIONALLY. IF YOU DON'T HAVE AN ADJUSTABLE DESK, USE A STACK OF BOOKS TO ADJUST YOUR WORKING HEIGHT.
- ✓ KEEP IN MIND THAT ACCIDENTS THAT HAPPEN WHILE YOU EAT (OR DO HOUSEWORK) WILL NOT QUALIFY FOR COMPENSATION AS WORKPLACE ACCIDENTS.

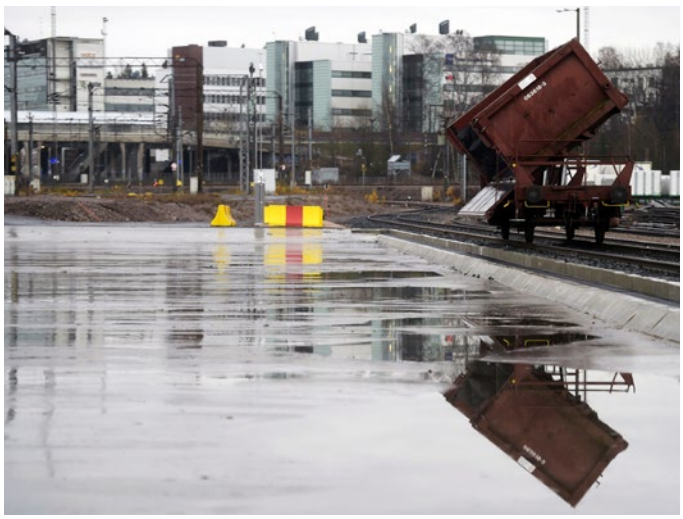


PHOTO: LEHTIKUVA

Putting a stop to the unnecessary transportation of snow! A snow melting field of 2,500 square metres has been placed in the Ilmala railway yard, where Helen's district heating is used to melt snow that poses problems to rail traffic in quantities as high as 100,000 cubic metres per winter.

HOW IRRESPONSIBLE IS IT...

...to charge an electric car directly from a domestic socket?

This could be dangerous! We do not recommend charging an electric car from a standard domestic socket or block heater socket unless the property's electricity system has been inspected by a professional. If you charge an EV battery from an underpowered electrical system or use unsuitable equipment and that causes a fire, your insurance company may reduce the compensation paid to you.

The answer was provided by Development Manager Ossi Mörö from LähiTapiola

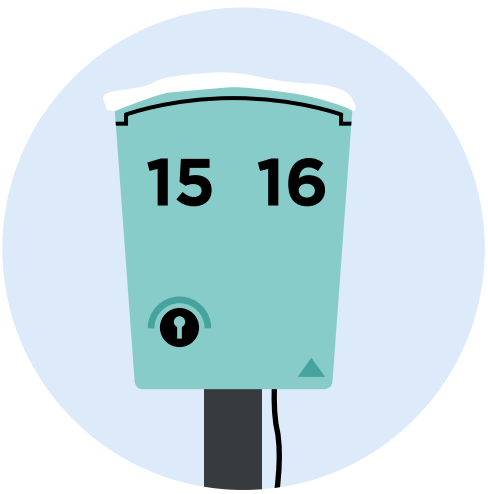


ILLUSTRATION: MIKKO HIRVONEN

#solarpower **Solar power from Messukeskus. Become a solar power producer and rent a designated panel for yourself at the Messukeskus solar power plant. Put in your order today — production at the plant has already begun! Visit helen.fi/messukeskus.**

I GIVE IT THE THUMBS UP

Drive in comfort

Kimmo Karhu made the switch to a pure-electric car at the start of the year. This marked a change in his driving philosophy.

What if the most important thing when driving is not how quickly you get to your destination, but enjoying a comfortable and economical drive and having a clear conscience about your impact on the environment? Mäntyharju resident Kimmo Karhu switched from a diesel car to a pure-electric car. His thinking was entirely transformed.

"The more I looked into it, the more advantages I discovered about electric cars. I realised how much more comfortable they are to drive."

Karhu has driven about 14,000 kilometres in just over six months. He drives from Mäntyharju to Espoo for work a few times a month. The length of that drive is 210 kilometres.

"In summer, I can cover that distance without stopping to charge the battery."

As an IT industry professional, Karhu occasionally drives longer distances to various destinations around Finland. The switch to electricity has not made the longer drives more difficult.

"Charging the car at a rapid charger is so fast that I can barely finish my coffee," he says with a laugh.

"I'm happy to maintain a driving speed of 100 kilometres per hour. In the grand scheme of things, what's the big deal about getting to your destination 15 minutes faster?"

DID YOU KNOW?
The Virta service network now comprises more than 600 charging stations across Finland. Virta is an associated company of Helen.

"The range is slightly reduced in winter, but it's still more than enough."

TEXT: ANI KELLOMÄKI. PHOTO: PETRI MULARI

Hello, I light up your yard!

Decorative lights brighten up the darkness of winter.

1

Complete the reader survey on page 26 for a chance to win a set of decorative lights.

2

"LED candles and lights create a cosy atmosphere in your home. Lights that have dimming (100%, 40%, 15%) or adjustable colour temperature (warm white, cool white, daylight) make it easy to change the mood of your lighting."

Marja Einesalo Energy Advisor, Helen Ltd

3

What do you need to know about outdoor lights?

Naturally, outdoor lights need to be able to withstand rain. That means an IP rating of at least IP44. The second digit in the IP code indicates the level of protection against water. The higher the number, the better the protection.

4

What kind of lights should I choose?

LED lights are the most popular kind these days. They have many good attributes. They operate on low voltage through a transformer, which means a lower risk of electric shock than with lights that are connected directly to mains electricity. LED lights are low in power consumption and they last a long time.

5

How should I store outdoor lights?

The best way to keep decorative lights and transformers in good order is to store them in the original packaging. Your lights may have been handled roughly, stuffed into a bundle and stored in dusty, damp and cold conditions. In that case, you need to check the condition of the cables before you put the lights up again.

More information on energy-related topics: **energiatori@helen.fi**

PHOTO: JIRINA ALANKO

#windpower **The answer is blowin' in the wind... The Finnish Wind Power Association's target is a fivefold increase in wind power production capacity by 2030. That would represent about 30% of Finland's total electricity consumption.**

Let's find out... about snow

Does electricity help with snow removal?

	What?	How?	Price?
SNOW PUSHER	A cross between a shovel and a sledge. Primarily for ploughing, but can also be used to lift small amounts of snow from a small area.	Manually operated. With a rolling snow pusher, the snow accumulates on the scoop, which makes clearing snow faster and easier.	About €20–40.
ELECTRIC SNOW SHOVEL	A shovel that looks like an upright vacuum cleaner. Best suited for removing light layers of loose snow from a small area.	Is powered by electricity. To start, plug it in and press the start button. The shovel moves forward and sends the snow flying.	About €70–100.
SNOW BLOWER	A device powered by electricity or an internal combustion engine that can be used to remove snow from larger areas.	On a single-stage snow blower, the auger blows snow out, while on a two-stage snow blower, the snow is discharged by an impeller fan.	About €400–1,800.
MELTING SNOW BY DISTRICT HEATING	A snow melting system that makes it possible for housing companies with district heating to keep passageways clear of snow during winter.	Cables are installed under the surface materials of passageways and the circulation of liquid keeps the areas clear of snow.	The annual cost of the energy consumed is approximately €1,200 for an area of 150 square metres.

Fascinated by solar energy

YouTuber Herbalisti, what are your thoughts about Helen's "Let's join forces" event held at Allas Sea Pool last summer?

I really enjoyed the event. Getting to make a nice summery wreath was very cool, for example. I also got to spend time with my YouTube followers and chat with people in general.

What gives you energy?

Cooking at home and exercise. I also get energy from my friends and family, as well as my job!

What climate-friendly action have you taken?

I sort my plastic and biowaste and take paperboard waste to the collection point at my local supermarket. I have tried to eat less red meat for the past several years. I'm fascinated by solar energy and I've been thinking about getting solar panels for some time now.

"I've been thinking about getting panels for some time now."

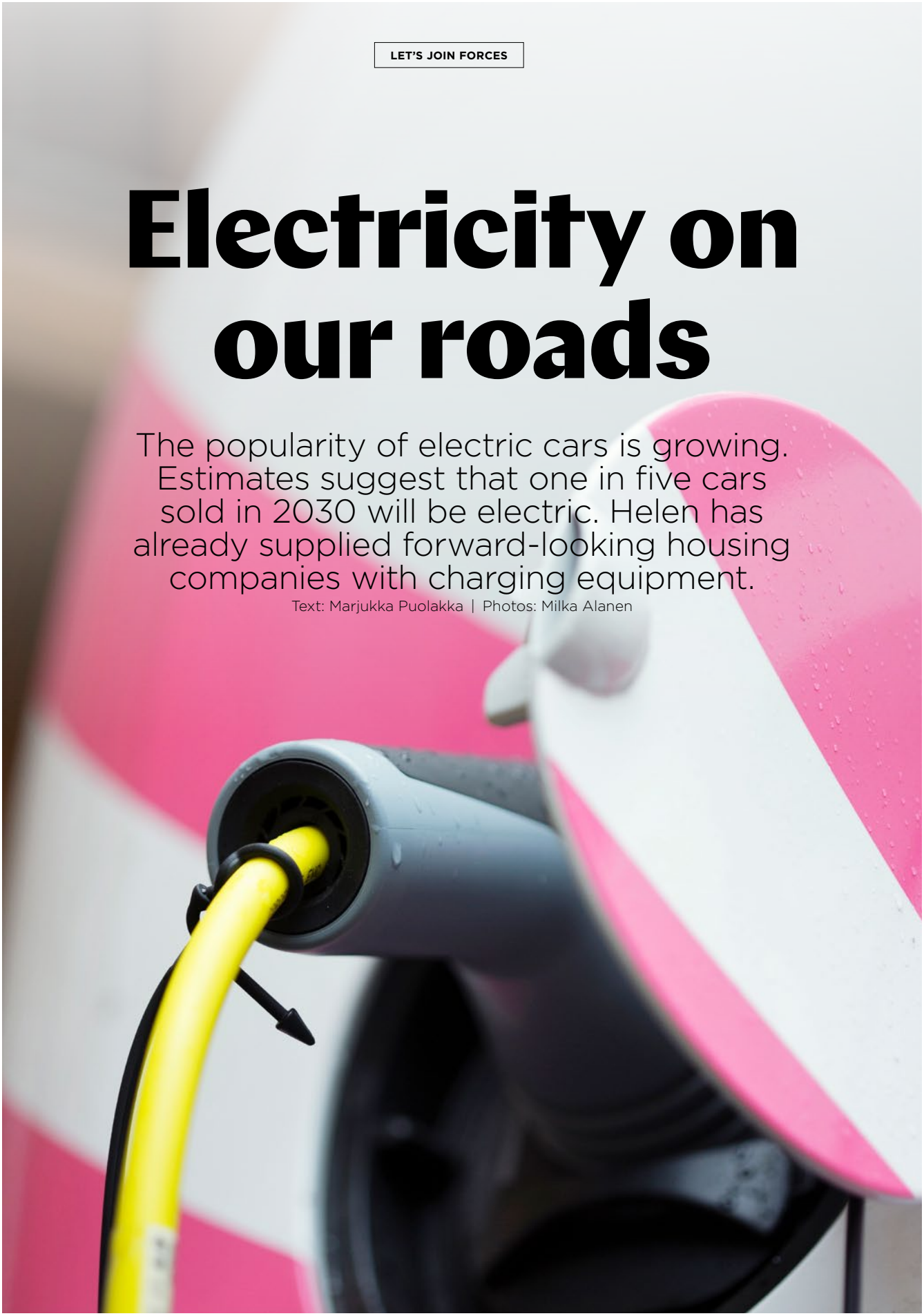
Herbalisti

#electriccars **Get charged up for the morning! With a home charging unit you can get your electric car safely from zero to full charge overnight. Helen takes care of the charging unit's delivery, installation and testing on your behalf. More information: helen.fi/kotilataus.**

Electricity on our roads

The popularity of electric cars is growing. Estimates suggest that one in five cars sold in 2030 will be electric. Helen has already supplied forward-looking housing companies with charging equipment.

Text: Marjukka Puolakka | Photos: Milka Alanen



“The cost of the charging equipment was less than €5,000”

BUYING AN EV CHARGING UNIT WAS NOT A difficult decision for this housing company on Museokatu in Helsinki.

“Electric cars are a smart choice. Many of the people who live in this housing company have thought about making the switch. At our General Meeting, we reached a unanimous decision on buying a shared charging unit for electric cars,” says Pekka Ahoniemi, Chairman of the Board of Bostads Ab Museigatan 3.

Helen was a natural choice as the supplier of the charging unit.

“We have complete trust in Helen’s expertise when it comes to energy. Helen is a large and experienced operator and they were very helpful in this project.”

Following a remote survey and a visit by a Helen representative, the housing company decided to buy Helen’s ICU EVE charging point, which can be used to charge two electric cars at medium speed at the same time.

The charging point was installed in the inner courtyard. The installation coincided with the renewal of the surface of the yard. A heating system was installed underneath to take advantage of the return water of the district heating system to keep the yard clear of snow in winter.

“We didn’t need to upgrade the main distribution board and Helen’s technicians finished the installation in a single afternoon. The power cable for the charging station passes through a waterproof duct in the asphalt to the switchboard in the basement.”

The charging point is operated by the Virta charging service, which Helen’s public charging stations are part of. The residents who drive electric cars have personal Virta accounts for using the charging point in the yard as well as the public charging stations of the Virta network.

The cost of the charging point, including installation, came to just under €5,000.

“That’s a small expense in the housing company’s overall budget. Having EV charging capability is a selling point for people with electric cars who are thinking about buying an apartment here.”

Facts

Bostads Ab Museigatan 3 (As Oy Museokatu 3). Chairman of the Board: Pekka Ahoniemi.

A housing company in Helsinki’s Etu-Töölö district, comprised of 16 original units and five attic apartments.

Designed by the architect Sigurd Frosterus, the building was completed in 1913.

The EV charging point in the courtyard is shared by the residents.

8+1 things you should know

if your housing company intends to buy EV charging units

1 The process of buying charging units starts with your housing company placing an order for a remote survey report on the Helen website. The survey reveals how many charging units can be safely installed at the property.

2 Helen's representative can also visit the site to determine how the charging units could be installed, what type of equipment suits the property and where it could be located. The housing company then receives a proposal that includes an installation plan and schedule.

3 The General Meeting discusses the issue and makes a decision on buying the charging units. If the housing company is planning a renovation project that includes excavation work, it makes sense to at least consider building the capacity to install a charging system.

4 The housing company's representative places an order for charging equipment and the installation service with Helen's contact person. The delivery of the equipment and the schedule of installation work is also agreed upon at this time.

5 The building manager should inform the residents in a timely manner of when and where the charging equipment will be installed. Keeping the area in question clear of parked cars ensures that the installation work can be completed on schedule.

6 Helen delivers the charging equipment and builds the charging system (changes to the switchboard, cabling, cable racks, charging hubs, etc.) The charging units are usually installed on a wall or separate pole in the parking area.

7 Residents who drive electric cars sign up as users of the Virta charging network. The Virta service invoices the EV users directly, which means there is no additional work for the housing company to deal with.

8 The residents of the property can now charge their electric vehicles safely and easily. For people who are thinking about buying a car, making the decision to go electric is easier when you can charge the car at home.

+1 By building the capability to charge electric vehicles, the housing company can prepare for the growth of electric motoring. Helen installs charging units safely at new as well as old properties.

"A shared charging point is a great way for a housing company to promote electric motoring."

Jori Malmi
Account Manager, Helen Ltd

Wind

Everything you ever wanted to know about wind — and more.

What is the highest recorded wind speed in Finland? How far can a tornado carry objects? How will climate change affect wind? We took a deep dive into the world of wind and how the winds will blow in the future.

Text: Kati Kelola | Photos: Antti Vettenranta

TREES FELL IN LARGE NUMBERS WHEN THE STRONGEST storm in Finnish history hit Kökar in the Åland Islands on the second of January this year.

The average wind speed measured by the weather station on the islet of Bogskär that night was 32.5 m/s, with gusts that were even stronger. The police urged the residents of the Åland Islands to stay inside. The cruise ferries that travel between Finland and Sweden did not make their customary stop in Mariehamn.

The event was recorded in the history books as storm Aapeli. It caused power outages and damage in other parts of Finland. Storms of Aapeli's magnitude only hit Finland once in 45 years on average.

Aapeli brought close to hurricane-strength winds. Storms with an average wind speed of at least 33 m/s are classified as hurricanes.

Such winds have never been recorded in Finland.

WIND IS VITAL FOR FINLAND. WITHOUT WIND, WE wouldn't have rain. According to the Finnish Meteorological Institute, this would lead to rivers drying up and Finland turning into a desert. Without winds balancing the Earth's temperature differences, the polar regions would cool down and the equator would get hotter.

Many plants would be unable to spread their pollen and seeds, which would prevent them from reproducing. Sea currents would become weaker, altering marine ecosystems.

Many species would go extinct.

Fortunately, this scenario of the Earth having no more wind could not occur in reality. The only way winds would stop entirely would be for the Earth to be thrown off its orbit and have nothing to heat up the atmosphere. The fact that we have windy days and nights is crucial for life on Earth.

Winds arise from the sun heating the Earth unevenly. This results in temperature and air pressure differences, which are then balanced out by the flow of air. Warm air is lighter than cold air. Heated by the sun, the air starts to rise up, with heavier and cooler air flowing in to replace it.

The circulation of air is a complex sum of many parts, which is affected by factors including the Earth's rotation, atmospheric friction as well as the shape and structure of land areas and seas.

Horrible hurricanes

The worst hurricane season on record happened in the Atlantic in 2005. A total of 27 storms developed during the record-long season. As many as four of them were Category 5 hurricanes, which is the highest categorisation: Emily, Katrina, Rita and Wilma.

SIROCCO, MISTRAL, FÖHN... DIFFERENT WINDS IN DIF- ferent parts of the world have names that carry echoes of romance. Sirocco winds blow from the Sahara desert to the Mediterranean, giving rise to sandstorms and even carrying bits of sand over to Europe. The Mistral is a strong cold wind that occurs in Southern France.

The dry föhn winds that occur in the downwind side of mountain ranges bring warm air to many places, including Finland.

Storm winds also have types, categories and names.

Tropical storms are called hurricanes, typhoons or tropical cyclones depending on where in the world they appear, but they are all examples of the same phenomenon.

Hurricanes rage in the southern parts of the North Atlantic, in an area stretching from Cape Verde to the Caribbean and the Gulf of Mexico, and in the eastern and southern parts of the Pacific.

Typhoons occur in the Northwest Pacific Ocean, in the seas of East Asia. Tropical cyclones occur in the Indian Ocean, the Arabian Sea, the Bay of Bengal and Southeast Africa.

There are roughly a hundred tropical storms each year. They are named according to regional conventions. Hurricanes, for example, are named each year in alphabetical order, starting with A and alternating between male and female names.

The World Meteorological Organization is in charge of the lists of names. There are six lists for hurricanes, used in a rotating six-year cycle.

Terrifying tornadoes

The highest estimated wind speed during a tornado was 135 metres per second at Bridge Creek, Oklahoma, in May 1999. The furthest distance travelled by an object was a cheque that flew a distance of 359 kilometres, from Stockton, Kansas to Winnetoon, Nebraska.

If a tropical storm causes such devastation that reusing the name would be offensive to the victims, the name is retired. Examples of such storms include Hurricane Katrina in the United States (2005), Typhoon Haiyan in the Philippines (2013) and Hurricane Irma in the Caribbean (2017).

IN THE FUTURE, TROPICAL STORMS MAY BE INFLUENCED by climate change.

"Studies suggest that the number of tropical storms will decrease, but the storms will become stronger," says climate researcher Kimmo Ruosteenoja from the Finnish Meteorological Institute.

According to Ruosteenoja, the effects of climate change on wind strength are generally not well understood at present, especially in Europe.

"It would seem that wind strength will be affected in quite a different way than temperatures and precipitation levels," Ruosteenoja points out.

The latter two will be significantly affected by climate change. Heat waves will become more intense and winters will become milder. Rains will become heavier and more frequent.

FOR PEOPLE, WIND HAS ALWAYS BEEN HELPFUL IN many ways. Without it, we could not have sailed on the seas and explored different parts of the Earth. We have used wind to mill grain.

Today, we use wind to charge our phones and tablets and keep our home appliances running. We use it for lighting and heating.

Last year, wind power represented 9% of Finland's total electricity production. According to Toni Sulameri, Managing Director of Suomen Hyötytuuli Oy, that figure is likely to be higher this year. The reason for that is that it has been a good year for wind. Production has increased by 20–30% compared to last year.

Sulameri says there is a big boom in wind power, both in Finland and internationally.

The Finnish Wind Power Association has announced its target as a fivefold increase in wind power production capacity between 2018 and 2030. If this target were achieved, wind power would cover 30% of Finland's estimated total electricity consumption.

According to Sulameri, the start of new wind power projects in Finland has been boosted recently by government production subsidies. The production costs of wind power have also been on a downward trend.

Helen is a partner in Hyötytuuli Oy with a 12.5% stake. The company currently owns six wind farms, and eight new projects are in the works.

Sulameri says there is plenty of room for growth. He points out that Finland is several years behind Sweden when it comes to wind power production, and even more behind Denmark, which is a leading country with regard to wind power. More than 40% of Denmark's energy consumption is already covered by wind power, Toni Sulameri says.

Germany – another leader in wind power – has more than 25,000 wind power plants, compared to about 700 in Finland.

"Germany is the same size as Finland, but the population is 15 times larger. So we should have plenty of space for further development here in Finland," Sulameri says.

According to Sulameri, increasing transmission capacity would be a significant technical step in the continued progress of Finnish wind power production. This would make it possible to sell wind power in the Central European markets, representing a substantial expansion in the size of the market and supporting the growth of the industry in Finland.

ACCORDING TO CLIMATE RESEARCHER KIMMO RUOS- teenoja, climate change may lead to increased intensity for individual thunderstorms in Finland, but a more significant change may concern the direction of wind.

"The proportion of southerly and westerly winds appears to be growing, especially in autumn," Ruosteenoja says.

This would mean better conditions for wind power production on Finland's western coast.

"There's a big open sea to the west where wind could blow from."

Southwesterly winds bring warm and humid air, while northeasterly winds bring cold air. If we get more southwesterly winds in autumn and winter in the future, our winters will get milder.

Ruosteenoja points out that these would be long-term changes occurring over several decades, and the predictions reflect the current understanding of the scientific community.

And will we ever reach hurricane strength winds of 33 metres per second or more in Finland?

"If you wait long enough, I suppose it will eventually happen somewhere in Finland. But maybe not in our lifetime," Ruosteenoja says.

Tornadoes are punctual

In Europe, tornadoes form in connection with the updrafts of cumulonimbus clouds, with July–August being the most active period. They also have a preferred time of day — nearly 70% of tornadoes formed on land occur between 3 p.m. and 9 p.m.

SOURCES: FINNISH METEOROLOGICAL INSTITUTE, WORLD METEOROLOGICAL ORGANIZATION, FINNISH WIND POWER ASSOCIATION

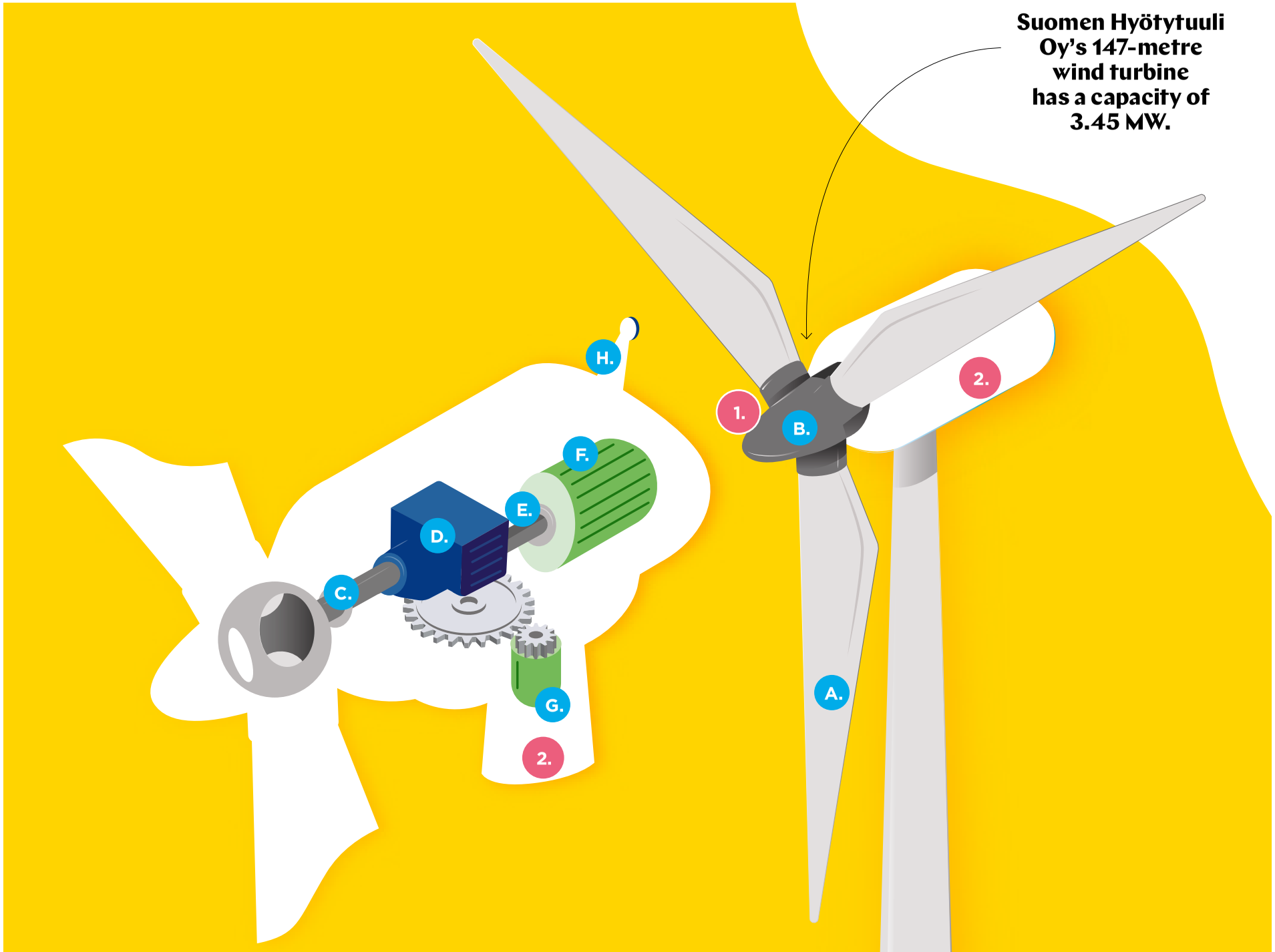
Winds arise from the sun heating the Earth unevenly. This results in temperature and air pressure differences, which are then balanced out by the flow of air.

At the end of 2017, the total worldwide wind power capacity exceeded 539 GW.

The global leader in wind power capacity at the end of 2017 was China with 188 GW.

The country with the largest wind power capacity in Europe at the end of 2017 was Germany with 56 GW.

Finland's total wind power capacity at the end of 2017 stood at 2.044 GW.


Suomen Hyötytuuli Oy's 147-metre wind turbine has a capacity of 3.45 MW.
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F.
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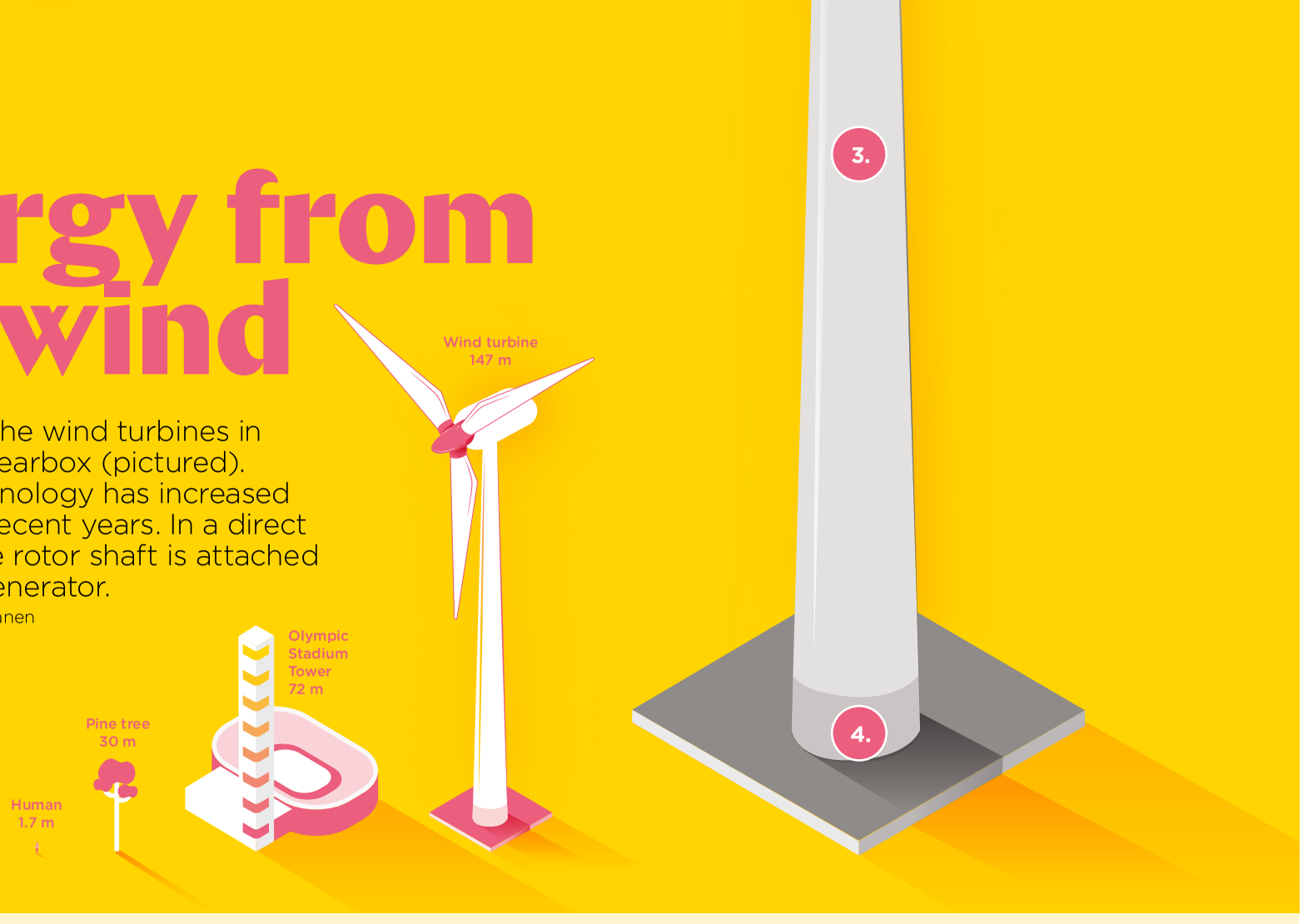
HOW IT WORKS

Energy from the wind

The majority of the wind turbines in Finland have a gearbox (pictured). Direct drive technology has increased in popularity in recent years. In a direct drive turbine, the rotor shaft is attached directly to the generator.

Infographics: Henna Ryynänen



1. ROTOR

A. Blades
- Usually made from fibreglass. Wind rotates the blades, which are attached to the rotor shaft via the rotor hub. The kinetic energy of the wind is converted into the kinetic energy of the rotor shaft.

B. Rotor hub
- Contains the blade control system. It is used to adjust the pitch of the blades to optimise the efficiency of power generation at different wind speeds and stop the turbine if the wind speed gets too high.

2. NACELLE

C. Rotor shaft
- Rotates at approximately 15 rpm and is connected to the gearbox.

D. Gearbox
- Is connected to the high speed shaft and increases the rate of rotation to 1,500 rpm.

E. High speed shaft
- Connects the gearbox to the generator.

F. Generator
- The high speed shaft rotates the generator, which converts the rotational energy into electricity. The electricity goes through an inverter and tower-mounted transformer to a substation and then on to the electricity network (see Helen 3/19).

G. Yaw mechanism
- Turns the nacelle in the right direction to keep the rotor facing the wind.

H. Measurement instruments
- Located on top of the nacelle to monitor wind speed and direction.

3. TOWER
- Tubular steel structure.

4. FOUNDATION
- Made from concrete.

Wind in your sails

Ice windsurfer Feodor Gurvits is in his element when the wind sends snow flying and creates a white blanket on ice.

I bought a garage-load of surfing equipment in February 2006. Not wanting to wait for summer, I went online to ask people if I could windsurf in winter. That's how I got turned on to ice windsurfing. It turned out that windsurfing on snow and ice is a lot easier than doing it on water.

The following year I entered my first competition. I finished last, but I only got more enthusiastic about the sport. The popularity of ice windsurfing, or snow sailing, started to increase rapidly in 2009 and the sledges began to get better here in Finland as well. That year I won my first Finnish Championship. Just under ten years later, in 2017, I won gold at the World Championships.

When you're in the zone, you glide across the snow effortlessly. You don't think about the ice or wind. You just go with the flow and everything is under control. It might be the same for a skilled dancer, the way it feels when everything is going right. Speed is definitely one of the best aspects of this sport, but even more satisfying is getting the most out of the wind and conditions you're in.

My favourite time to go winter windsurfing is in March, when it is brighter out and you can enjoy the warmth of the sun. The most beautiful moments I've experienced were on the snowy slopes of Pallas and the times when the wind turns the snow into a moving white blanket on the ice.

I like teaching and making this sport easier for others to take up, because I made every mistake in the book when I first started out. You don't want to have the wrong equipment in the wrong conditions and ruin your experience of the sport.

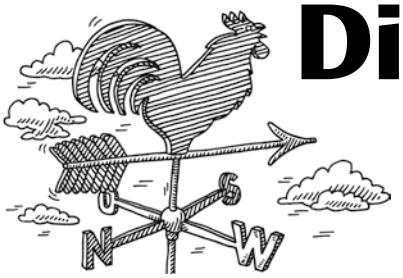
This is a hobby for people of all ages. I lost to a 72-year-old at the World Championships once, and my youngest students are 6–7 years old.

"When you're in the zone, you glide across the snow effortlessly," Feodor Gurvits says.

FEODOR'S TIPS
How to keep warm in windy weather:

- Wear waterproof shoes.
- Put on thin winter work gloves.
- Wear windproof jacket and pants.
- Also, wear thermal underwear.

TEXT: ANI KELLOMÄKI. PHOTO: LAURA OJA



Did you know this about wind?

Find out how familiar you are with wind.

1

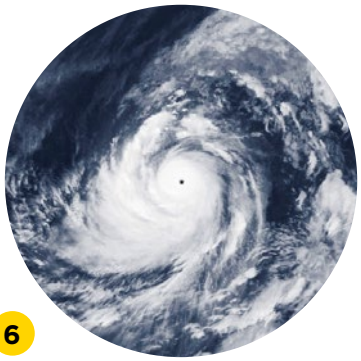
Where does wind get its energy from?
A. The Earth's gravitational pull
B. The warmth of the oceans
C. The radiation of the sun

2

What is the lower limit for wind classified as a storm?
A. 21 m/s
B. 26 m/s
C. 31 m/s

3

Who wrote the Finnish lyrics for the song Tuuliviiri recorded by Danny in 1968?
A. Saukki
B. Pertti Reponen
C. Kari Tuomisaari



4

How many wind turbines were there in Finland at the end of 2018?
A. 398
B. 698
C. 998

5

A wind turbine with an annual output of 8,000 MWh produces enough energy for...
A. ...80 single-room apartments
B. ...800 single-room apartments
C. ...8,000 single-room apartments

6

What was the diameter of Typhoon Tip, the largest tropical cyclone on record?
A. 1,200 km
B. 1,700 km
C. 2,200 km

7

What is the height of the world's largest wind turbine?
A. 164.5 m
B. 264.5 m
C. 364.5 m

8

What is a snow roller?
A. A biscuit
B. A snowball blown along by wind
C. A type of tumbleweed

9

What were the strongest gusts of wind measured during storm Aapeli?
A. 31.6 m/s
B. 41.6 m/s
C. 51.6 m/s

Storm Aapeli felled trees on power lines in the Åland Islands on 2 January 2019.

PHOTO: LEHTIKUVA

ANSWER KEY: 1.C, 2.A, 3.C, 4.B, 5.C, 6.C, 7.B, 8.B, 9.B.

IMAGE: ALL OVER PRESS

THE BIG PICTURE

It got very windy here

Barrow Island lies in the Indian Ocean, 50 kilometres off the northwestern coast of Australia.

Tropical cyclone Olivia hit Barrow Island on 10 April 1996. The unmanned weather station on the island measured the strongest gust of wind at 113 m/s. According to the World Meteorological Organization (WMO), that is the fastest wind speed on record that has been verified by an anemometer.

Barrow Island is a place of extremes. It is an important hub for oil and natural gas production in Australia, but it is also an A-class nature reserve. It is home to a number of mammals that have become extinct or lost in most of mainland Australia, such as the spectacled hare-wallaby, burrowing bettong, golden bandicoot, black-flanked rock-wallaby, Barrow Island mouse, perentie and flatback sea turtle.

The endangered green sea turtle is one of the many unusual residents of Barrow Island.

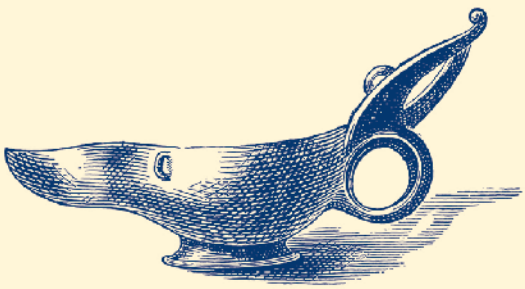
TIMELINE

Street lighting through the years

Did you know that Finland's first electric street lights were turned on in 1885?

100 BCE

Ancient Romans used oil lamps filled with vegetable oil in front of their houses and had slaves whose only duty was to take care of those lamps.



500 BCE

In Beijing, street lights were fuelled by natural volcanic gas emissions channelled through bamboo pipes.

1417

Sir Henry Barton, Lord Mayor of London, issued an order requiring all houses in the city to hang lamps outside at night during the winter months.

1524

An order was issued in Paris requiring all street-facing windows to be lit at night.

1600

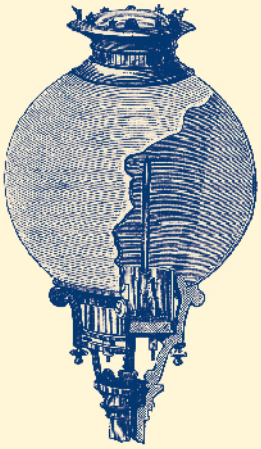
Wealthy Londoners lit up the streets by having torch-bearing boys walk in front of them in the dark (this was also dangerous, as they risked being led into a dark alley to be mugged).

1802

William Murdock lit up the front of a foundry in London's Soho district using gas lights, which ushered in a new era of more efficient street lighting. Five year later, the first street in London was lit up with gas lamps.

1805

Finland's first street lighting, using candles and oil lamps, was turned on in Turku on 15 November.



1876

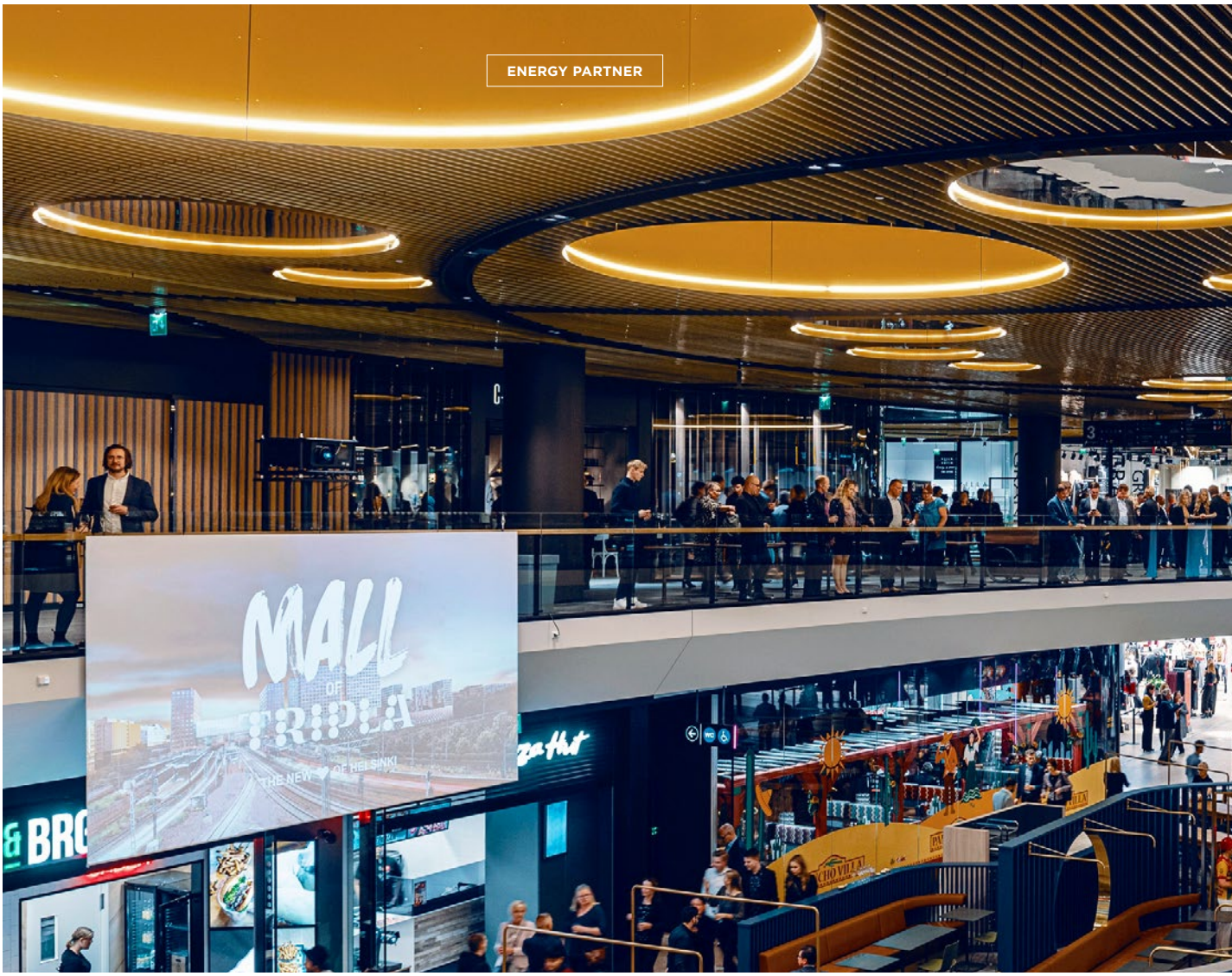
The Russian electrical engineer Pavel Yablochkov invented an electric lamp known as the Yablochkov candle, which was powered by alternating current. The lamps were first used two years later in Paris.

1930

In parts of central Helsinki, you can still see the Y-shaped lamps whose installation began in the 1930s. The first electric street lights in Finland were introduced in Helsinki about 50 years earlier.

2010

LED lights have started to become increasingly common in city centres, although high-pressure sodium lamps are still the most commonly used technology for street lighting.



5 x Mall of Tripla trends

The largest shopping centre in the Nordic region was opened in November.

Text: Marjukka Puolakka | Photo: YIT

1 Sustainable energy consumption is a very high priority at Mall of Tripla

Located in Helsinki's Pasila district, the largest shopping centre in the Nordic region is a leader in energy efficiency even by international standards.

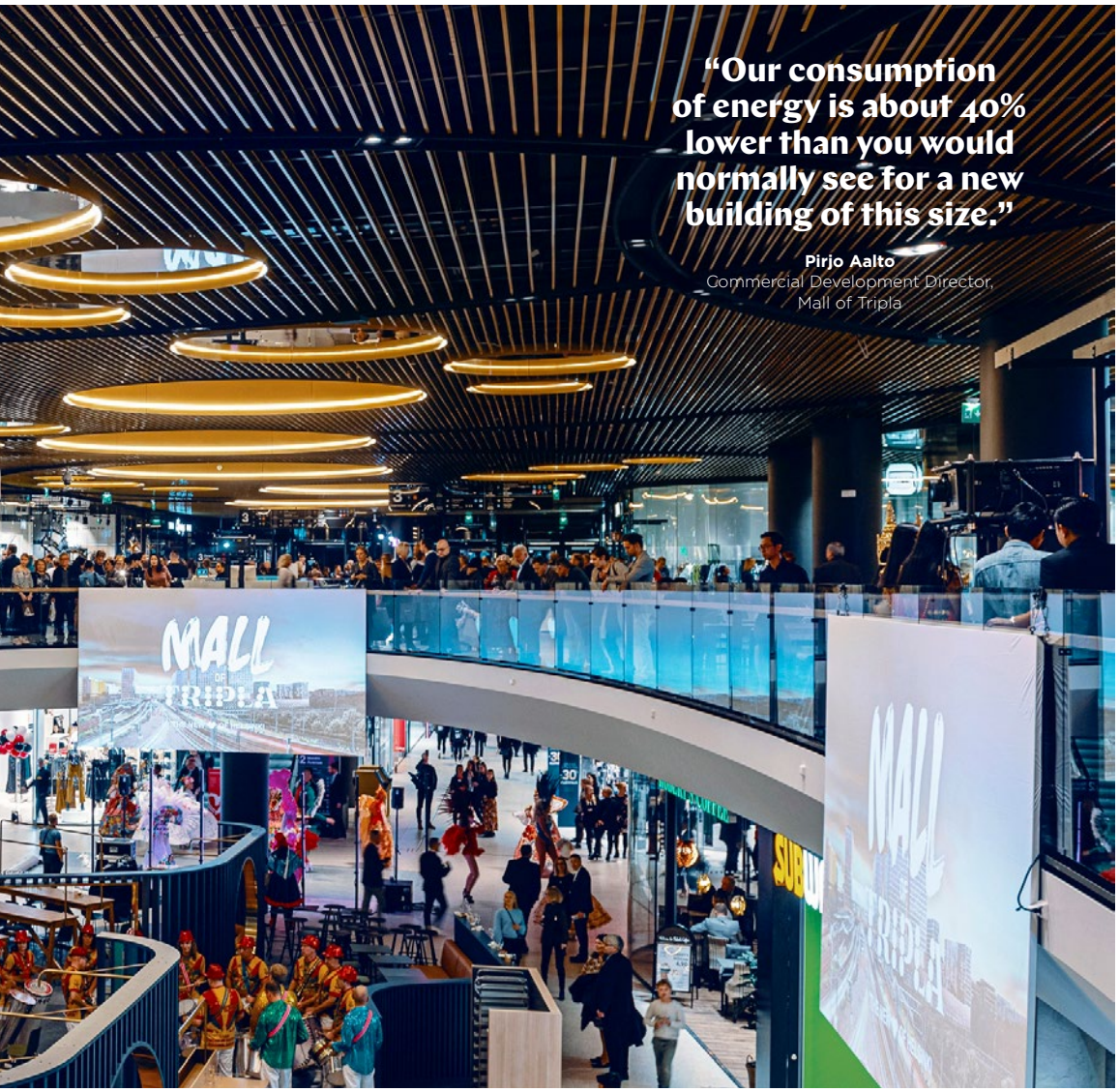
"Our consumption of energy and water is about 40% lower than you would normally see for a new building of this size. We recycle waste using a centralised vacuum collection system and we also provide a large waste collection point for consumers to use. Green roofs cover 40% of our total roof area," says Commercial Development Director Pirjo Aalto from YIT.

Located at a public transport hub, Mall of Tripla also has parking spaces for 3,400 bicycles and 300 electric cars.

2 Urbanisation brings people closer together

Consisting of three city blocks, Tripla is a new urban centre in Helsinki and an area that will have lots of new housing and jobs. A total of 900 trains, 850 buses and 400 trams come to Mall of Tripla every day.

"We have about 1.5 million people living within half an hour from here. We are part of urban life and we provide people with attractive and comfortable urban environments both indoors and outdoors," Aalto explains.



Facts

As Mall of Tripla's energy partner, Helen ensures that the premises are heated and cooled cost-efficiently and reliably in all conditions.

The partnership began in the early stages of the design process, with experts from Helen and YIT working together to develop optimal heating and cooling solutions for Mall of Tripla.

“Helen ensures that we have access to consistent and highly functional district heating and district cooling services. The condensation heat generated by refrigeration equipment is used to heat water. Energy efficiency is good for the environment and good for the bottom line,” says Sakari Meriläinen, Property Manager at Mall of Tripla.

Energy partnership also includes the continuous development of new and environmentally friendly energy solutions.

3 Physical and mental well-being are increasingly important to people

“Health is a big trend right now. The importance of rest is now being recognised alongside physical exercise. Mindfulness, guided naps and various relaxation exercises are very popular.”

Mall of Tripla offers a diverse selection of recreational activities. There are opportunities for sports ranging from beach volleyball to resistance training and various wellness services. You can also visit the Töölö congregation's multi-purpose facility for a moment of peace and quiet.

4 Food and good nutrition are important to people in their daily lives and on special occasions

With more than 60 restaurants, Mall of Tripla offers everything from quick lunches to rich culinary experiences as well as genuine local and organic food. There are also five grocery shops and a market hall.

“Sustainable consumption is the big food trend right now. We have 20,000 square metres of daily consumer goods retail and restaurants, so there are food options to suit every situation.”

5 The population is ageing and also becoming increasingly active

“The shopping centre provides opportunities for community activities such as morning workouts and guided Nordic walking. Going from one end of Mall of Tripla to the other easily turns into a three-kilometre walk.”

We also have childcare facilities and a play area for our youngest visitors.

“Accessibility means Mall of Tripla is easy to get around for people who are visually impaired, have reduced mobility or simply have a child in a pram.”

Internationalisation is reflected in Mall of Tripla's diverse range of products and services. Services are also available in languages other than Finnish.

SUDOKU

Sudokus solution: helen.fi/sudoku

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READER SURVEY

Send us your feedback and win a prize!

Which of the stories in this issue was the most interesting to you? You can also let us know what you would like to read about in Helen magazine.

Participate in the survey by 11 January 2020 online at **helen.fi/lukijakilpailu** or send a postcard to Helen, Helen magazine, 00090 HELEN. Don't forget to write your contact details and customer number on the card.

One lucky survey respondent will win a set of decorative lights.

Decorative lights
A set of mains-powered decorative outdoor lights. 5 spot-lights. Cable length 5 m. Wall plug transformer. Output 6.5 W. Brightness 150 lm. Colour temperature warm white 3000K. Service life 15 years. IP44.

7 SOURCES OF ENERGY

Anne Kukkohovi

1

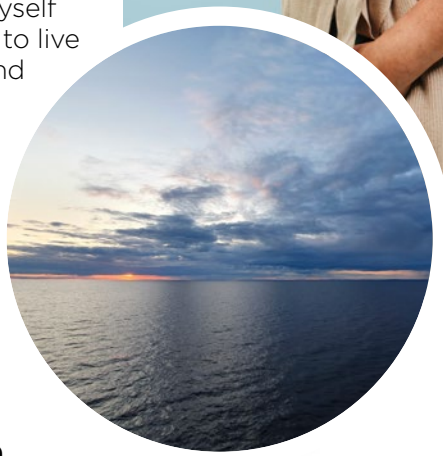
Music

I have different playlists for all kinds of situations. Music stimulates me and gives me energy, but I can also use it to calm myself down and relax.

2

The sea

I was born in Vaasa, close to the sea. Later in life, I've noticed myself looking for places to live close to the sea and opportunities to spend time by the sea. My dad loved the sea and it was a big source of strength for him.



3

Meditation

I never let the process of getting out of bed get drawn out. I don't do a morning meditation in the conventional sense, but having a quiet morning coffee is a similar experience. You feel like a newborn for those moments.

Facts

Anne Kukkohovi, 49, is a TV personality and former model.

She currently manages her own cosmetics brand, Supermood.

Her biography ("Päin punaista – Anne Kukkohovin kyydissä 24/7") was published in October.

4

Yoga

I do yoga at home by myself almost every day. I listen to my body to figure out what part feels sore and needs stretching. I call it intuitive yoga.

5

People

There are two sides to me. I love meeting new people and talking to people. I often lose track of time and I get energy from these encounters. I also need to spend a lot of time on my own. I sometimes have a strong need to be completely unreachable.

6

Passion

I am passionate about a lot of things. Keeping passion alive gives you energy and makes life more playful, fun and exciting.

7

Walks

I used to go for walks with my mum when I was a child. These days, I go for walks alone, with my brother Jari or with my best friend. I often solve problems while I am out for a walk. That makes you realise how connected our mental and physical sides are.

PHOTOS: ANTTI RAATIKAINEN AND GETTY IMAGES

The highest a kite has ever flown is 4,879.54 metres.

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