

The Faroe Islands Space Program

Fact sheet

This sheet provides additional information about the project “The Faroe Islands Space Program” – a space program that never leaves earth.

[Visit the Faroe Islands Space Program website](#)

Introduction

Increased demand for energy has led to a new space race where [media reports](#) major nations are competing to control the Moon’s resources. But in fact, we already have endless moon energy on Earth. Tidal energy, driven by the Moon’s gravitational pull on our oceans, offers a renewable and predictable power source. Industry leader SKF and ocean energy developer Minesto are launching the Faroe Island Space Program to harness this untapped potential and highlight the urgency of utilizing Earth’s existing resources in a smart and sustainable way.

About the Faroe Island Space Program

SKF and Minesto are launching a space program, that never leaves earth, in one of the world’s smallest nations to harness the power of the Moon through tidal energy—generated by the Moon’s gravitational pull-on Earth’s oceans. The program aims to showcase the potential of tidal energy as a renewable and predictable power source which could come to play a vital role in the Faroe Islands’ goal of reaching 100% renewable energy by 2030.

By framing it as a space program, the partners aim to emphasize the importance of exploring how we can harness the moon's energy to generate renewable electricity through tidal forces right here on earth and make the most of the natural resources already available to us—amidst a new space race where others are discussing the potential of extracting resources from space and other planets.

About moon energy (tidal energy)

Tidal energy is a renewable power source generated by the movement of ocean tides, driven by the gravitational pull of the Moon. As the Moon's gravity tugs on Earth's oceans, it creates tidal streams—powerful flows of water that can be harnessed for electricity. NASA describes this phenomenon: *"When you see the tide roll in or out, what you're really seeing is a cycle of small changes to the distribution of our planet's oceans."* Though subtle, these shifts generate immense energy. By capturing this motion of kinetic energy, through underwater tidal kites—which move in a loop formation to accelerate the water speed through the turbine—we can turn the Moon’s gravitational pull into a steady, predictable source of renewable electricity.

About SKF

SKF is a Swedish global company renowned for its expertise in manufacturing ball bearings and seals. Founded in 1907 in Gothenburg, SKF has grown to become the world's largest bearing manufacturer. We are represented in around 130 countries, with more than 38,743 employees and 17 000 distributor locations worldwide.

Our products are found everywhere in society. We are an important part of the everyday lives of people and companies around the world. SKF is also known for its commitment to innovation and sustainability. We focus on improving energy efficiency and reducing CO2 emissions through their advanced products and solutions. The company aims to decarbonize its entire production by 2030 and achieve net-zero greenhouse gas emissions by 2050.

[Read more about SKF](#)

About Minesto

Minesto is an ocean energy technology developer, founded in 2007 as a spin-off from Swedish aerospace manufacturer Saab. Since then, Minesto has successfully developed its unique technology for plannable generation of renewable electricity from the ocean. With patented technology, tidal and ocean currents with low-flow velocities are exploited. The technology can be installed in areas where no other known technology can operate cost effectively. The company has operations in Sweden, Wales, the Faroe Islands and Taiwan, with headquarters in Gothenburg, Sweden. Main owners are BGA Invest and Corespring New Technology. The Minesto shares are listed on the Nasdaq First North Growth Market in Stockholm.

[Read more about Minesto](#)

About the Faroe Islands

Located half-way between Scotland and Iceland in the Northeast Atlantic, the Faroe Islands are an archipelago of 18 mountainous islands, with a total land area of 1,399 square kilometers, a sea area of 274,000 square kilometers and a population of about 55,000. The Faroe Islands may be small in land mass and population, but the extensive fisheries and maritime area makes them a major stakeholder in international cooperation on marine-based sustainable development.

[Read more about the Faroe Islands](#)

About Sev

The power company Sev is an inter-municipal community, owned by all the municipalities in the Faroe Islands, and therefore owned by the people of the Faroe Islands. Sev is obliged to supply power to all citizens, companies and organizations 24-hours a day. Sev has sole responsibility for power quality and the power supply system in the Faroe Islands. Sev has one of the world's most ambitious energy transition schemes, aiming to reach 100% renewable electricity by 2030. Together with Minesto, Sev has pioneered tidal energy and believe tidal energy can be a key part in reaching the goal.

[Read more about Sev](#)

Questions related to the project

Q: Is the Faroe Islands Space program a real space program?

A: By framing this initiative as a space program, the partners aim to highlight the importance of harnessing the Moon's energy to generate renewable energy through tidal forces—especially as the world enters a new space race, with growing discussions around extracting resources and energy from space and other planets. This space program (that never leaves Earth) instead taps into the Moon's influence by generating renewable and predictable energy through tidal power.

Q: What does the Faroe Islands Space program entail?

A: The Faroe Islands Space Program, that never leaves earth, is dedicated to harnessing tidal energy—Moon-driven power created by the gravitational pull on Earth's oceans. The program aims to showcase the potential of tidal energy as a renewable and predictable power source, a technology which could provide nearly half of the Faroe Islands' energy need by 2030.

Supporting the Faroe Islands' and Sev's goal of reaching 100% renewable energy, the program has pioneered tidal kite technology. The program's next goal is a 200 MW tidal energy facility to meet 40% of the country's projected demand. Beyond a new renewable energy production, the program showcases the importance of collaboration across industries to drive sustainability as well as the vast global potential of tidal energy in the transition to renewables and the role it could play in the future energy mix.

Q: What is the moon energy base in the Faroe Islands?

A: Our "moon energy base" refers to Minesto's tidal energy facility located in the small town of Vestmanna in the Faroe Islands, serving as its operational hub. Over the past few years, SKF and Minesto have been piloting tidal energy production in a nearby inlet. As the next goal in the Faroe Islands Space Program and to support Sev's transition to renewable energy, the program aims to scale up production and establish a larger, cutting-edge tidal energy array. This expanded facility is expected to generate nearly half of the islands' projected energy demand by 2030.

Q: Is this space program really harnessing moon energy?

A: Yes, in theory. The Moon's gravitational pull is responsible for about 70% of tidal movement, meaning this program is indeed harnessing moon energy.

Q: How does the tidal kites work?

A: Minesto's technology generates electricity from tidal streams and ocean currents by a unique and patented principle similar to a kite flying in the wind. The wing uses the hydrodynamic lift force created by the underwater current to move the kite. With an onboard control system, the kite is autonomously steered in a predetermined figure-of-eight trajectory, pulling the turbine through the water at a water flow several times higher than the actual stream speed. The turbine shaft turns the generator which outputs electricity to the grid via a power cable in the tether and a seabed umbilical to the shore.

[Read more about Minesto's technology](#)

Q: What is SKF's role in the program?

A: Saving energy by reducing friction is a concrete way towards a more sustainable world. Collaborating widely with other forward-thinking organizations, we're helping to make industry smarter, more competitive, and more energy efficient every day.

Research shows how 20% of all energy consumed globally is used to overcome friction, and this is particularly important when producing energy as you want all the output to go to the electricity grid and not disappear as friction. By reducing the amount of friction in the world, we're able to use our resources in a more efficient way.

In this space program, that means harnessing moon energy with tidal kites off the coast of the Faroe Islands. SKF was brought on board to design the bearing and sealing systems for the rudders and elevators of the kites. The SKF software system calculates, for example, bearing rating life and estimates CO2 emissions, which makes it possible to compare different solutions not only from a technical standpoint but also from a sustainability point of view, reinforcing our mission to drive innovation in renewable energy. Since the kites operate deep down in the Atlantic, there are great challenges to tackle. The kite flies at speeds of up to 16 knots at a depth of 60 meters. During operation the turns are smooth, but the system must also be able to handle acceleration. Choosing the right bearings and seals to endure these conditions is critical.

Important SKF parts of Minesto's Dragon 12 (Luna 12) kite are:

- **Sensors** - which are installed on the turbine in the D12. The sensors measure vibrations and temperature during operation to monitor the turbine and detect abnormal frequencies. This enables planned maintenance and avoids bearing damage and unplanned downtime.
- **Bearings** – which are installed in the applications inside the kite such as rudders and turbine.
- **Sealing System** – which is used on its rudders, to prevent water and other contaminants to enter into the applications.
- **Product select software tool** – which supports in evaluating and selecting SKF products. Product Select is available for bearings, housings, seals and lubrication.
- **SimPro Quick software tool** – which evaluates and optimizes bearing arrangements. It allows customers and other users to perform detailed performance evaluations of bearing arrangements based on specific requirements and conditions.

[Learn more about SKF's initiatives to fight friction](#)

Q: How is this space program different to other space programs?

A: Very different, but to us, this is very much a space program—just with a different perspective. Instead of exploring outer space, we explore the sea space. The growing demand for energy has sparked a new kind of space race, with nations competing for lunar resources. But, in reality, tidal energy is moon energy—a force shaped by the moon's gravitational pull—available right here on Earth.

By framing our initiative as a space program, we highlight the significance of harnessing this lunar influence for renewable energy. This project isn't just about innovation; it's about global collaboration, sustainability, and the future of energy. We see this as a mission to explore and optimize our planet's natural resources—one that is just as ambitious and essential as any journey beyond our atmosphere.

Q: In what way is moon energy tidal energy?

A: Since the moon's gravitational pull creates tidal streams on Earth, tidal energy is in fact moon energy. As distant as the Moon may seem, its gravitational pull on our planet plays a huge role in the formation of tides.

[Read more about how it works](#)

Q: What is tidal energy? And how does it work?

A: Tidal energy is a renewable power source generated by the movement of ocean tides, which are driven by the gravitational pull of the Moon. As the Moon's gravity influences Earth's oceans, it creates tidal streams—powerful flows of water that surge during the rise and fall of tides. This movement can be harnessed to generate electricity in a sustainable and predictable way.

Q: What is the potential of tidal energy? Could it replace other energy sources?

A: Ocean energy is still a small part of the renewable energy mix. But Minesto estimates there are at least 3000 more “Faroe Islands” out there qualifying for our space program - if they all join, moon power could replace all coal power capacity currently under development globally. When the sun does not shine, when the wind does not blow – the ocean continues to flow.

Q: How much energy does tidal energy generate in the Faroe Islands today?

A: The kite Luna 12 has a rated power of 1.2 MW, enough to power 200 villas with electricity for one year. The electricity volume produced in the testing phase is still at a modest level. The visionary goal is to implement a 200 MW tidal energy facility. This could meet 40% of the expected electricity needs in 2030, providing renewable electricity to the small, remote island nation's 50,000 people and 70,000 sheep. Unlocking the power of the tides is a joint work together with power company Sev.

Disclaimers

The mission of the Faroe Islands energy company SEV, to reach 100% renewable energy by 2030, is not indicative of the displayed product's full supply chain impact.

Calculated on an example villa with an energy consumption of 17.000 kWh/year. For average consumption data, please refer to country-specific sources such as Vattenfall ([Link](#))

20% of the world's energy production is used to overcome friction. Source: Holmberg, K., Erdemir, A. Influence of tribology on global energy consumption, costs and emissions. Friction 5, 263–284 (2017)¹⁾ (alt: [How is bearing selection affecting your industry's CO2 footprint? | SKF](#))