



# Annual review 2022





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# Annual Report for 2022

Arctia Group’s Annual Report 2022 comprises the report of the Board of Directors, corporate governance and remuneration report, sustainability report as well as financial statements. The reports are posted on the company’s website at [www.arctia.fi/en](http://www.arctia.fi/en).

## ANNUAL REVIEW



## CORPORATE GOVERNANCE AND REMUNERATION REPORT



## SUSTAINABILITY REPORT



## FINANCIAL STATEMENTS





YEAR 2022

OPERATING ENVIRONMENT  
AND STRATEGY

BUSINESS  
OPERATIONS

# Reliable service in challenging conditions

Arctia is tasked to facilitate safe, smooth and environmentally sustainable waterborne transport operations.

Arctia's three lines of operation are icebreaking, fairway maintenance and hydrographic surveying. Aside from the wealth of experience and expertise in these core areas, Arctia engages in oil spill response, hydraulic engineering, pipe and cable laying, towing as well as the manufacture of plastic buoys and spar buoys.

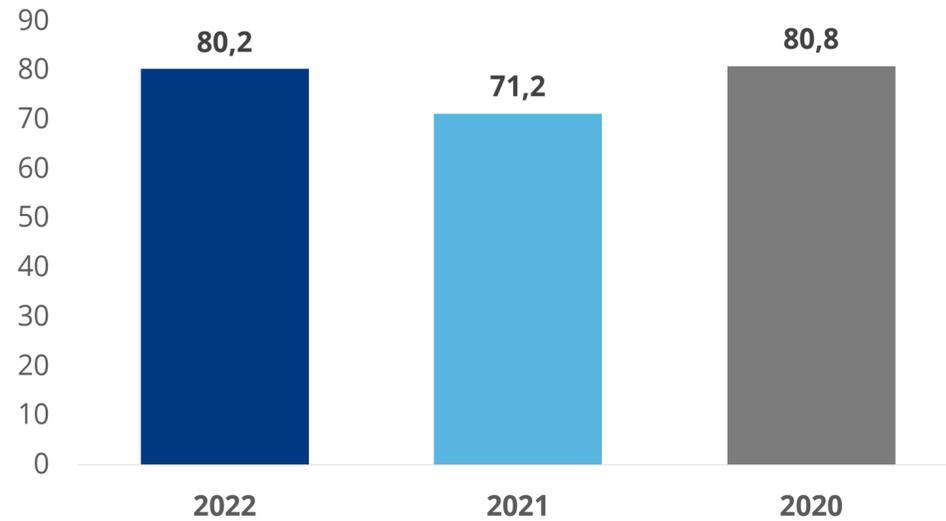
Arctia Ltd is 100 % state-owned.





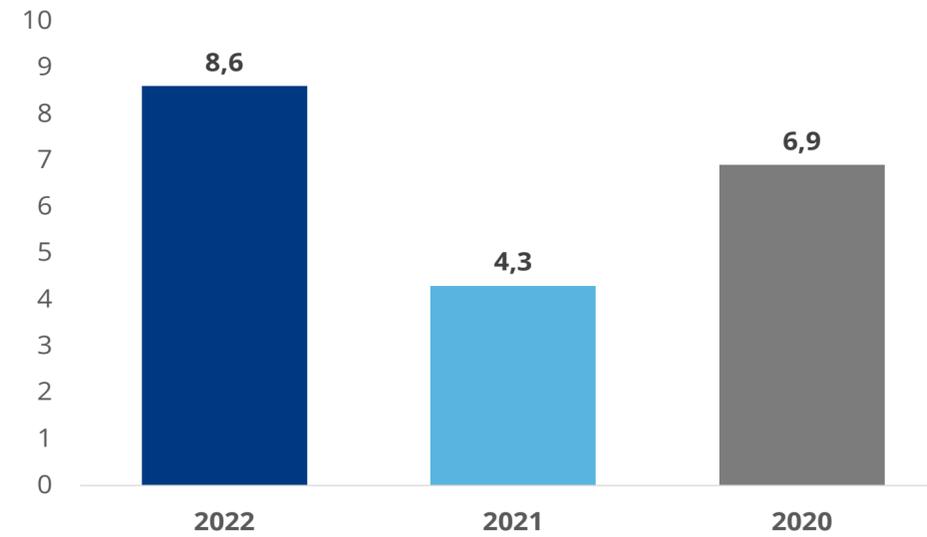
# Key financial indicators

Turnover MEUR



**80.2** 71.2  
80.8

Investment MEUR



**8.6** 4.3  
6.9

Result for the financial year MEUR

**1,2** -0,5  
0,9

Operating profit MEUR

**2,9** 0,2  
2,4

Return on capital invested %

**1,1** 0,1  
0,9



# Personnel in 2022

## Personnel in total



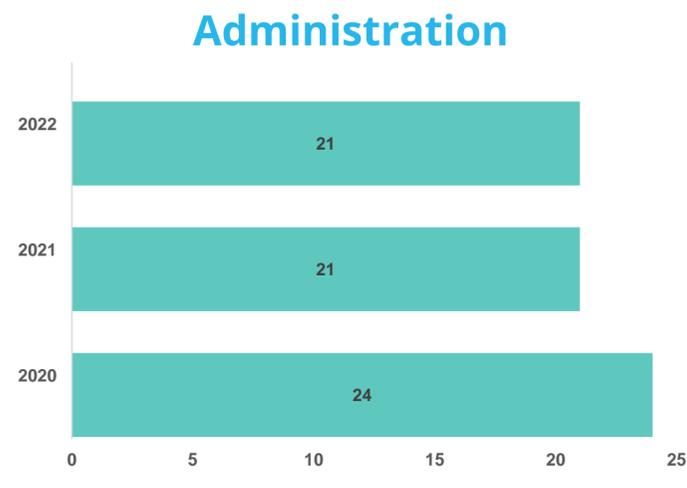
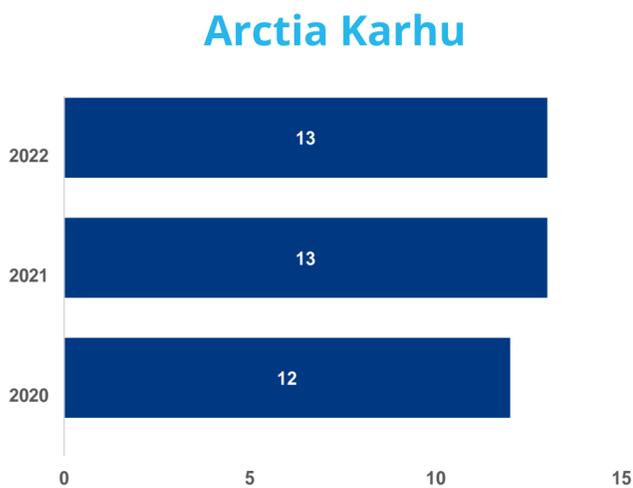
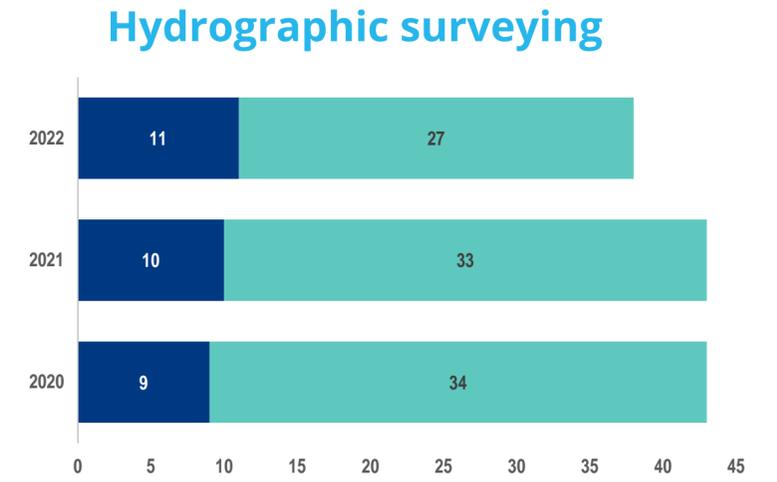
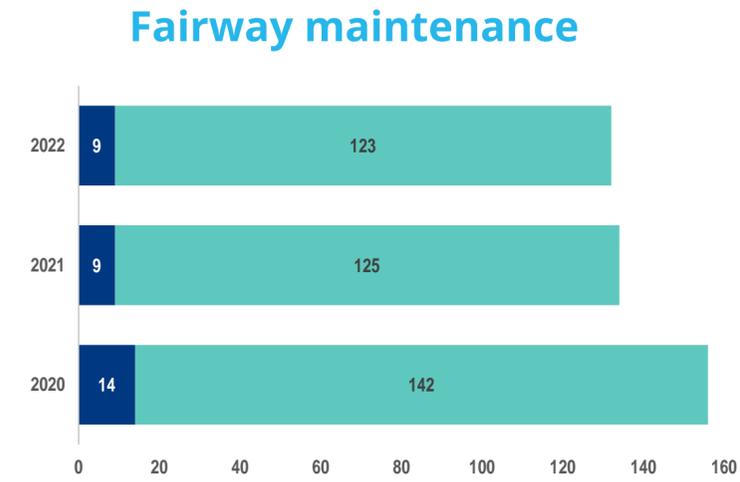
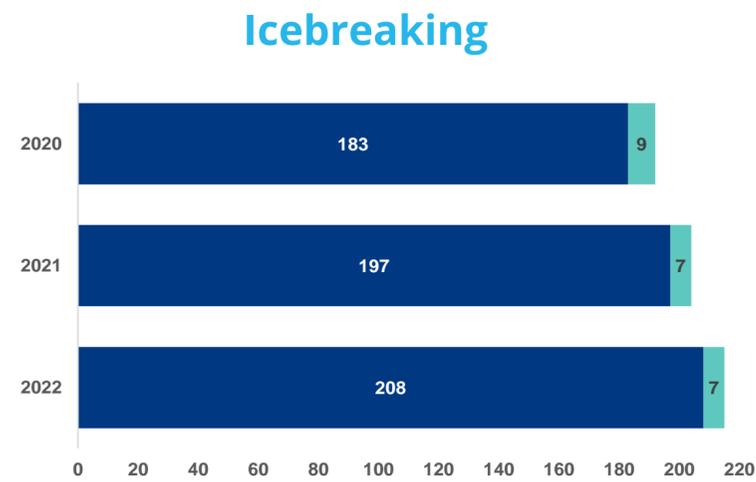
## Offshore personnel



## Onshore personnel



## Personnel by business area





## CEO's review

# A year of positive development

Late 2022 marked the end of our three-year strategy period, which focused, in particular, on improving the efficiency, development and sustainability of in-house operations. We are pleased to note that all business operations achieved a positive financial result in 2022, thanks to all of Arctia's personnel. The Group's cost structure is now permanently over 5% lower than at the beginning of 2019, when Arctia and Meritaito merged.

As 2022 proved to be a year of major geopolitical turbulence, Arctia's contribution to maintaining adequate stocks of critical supplies only increased in relevance and importance. Russia's invasion of Ukraine, the lessons drawn from the pandemic, the acceleration of the EU's green transition and the growing trend towards sustainability have all shaped our actions, pointing a new direction for the future.

The Group's operating income was EUR 2.9 (4%) million, while total revenue reached EUR 80.2 million. It was particularly pleasing to see the fairway management and hydrographic surveying businesses turn a profit after several

challenging years. Underlying this success were efficiency-enhancing measures, expansion to new business areas and an operationally coherent year.

We continued our efforts to develop sustainability on a broad front, with major improvements being made in occupational safety, in particular. Work under the CO2 Roadmap has continued, while the next big step – the launch of the icebreaker fleet upgrade programme – will require a contribution from our network of stakeholders. No serious occupational accidents or environmental damage occurred in the Group during the reporting year.

As far as the personnel is concerned, job satisfaction was almost at par with the previous year, with the meaningfulness of work being the biggest single strength – people in Arctia feel that their work is highly important. Sustained efforts have been made to lay a solid foundation for a change in corporate culture and job satisfaction. Next, we will step up the pace and achieve our ambition of ensuring that every Arctia employee feels comfortable and develops

in his or her work.

While enjoying the fruits of our labours, our eyes are already firmly fixed on the opportunities and challenges that the future will bring. Our business environment is changing faster than ever before. Competition is intensifying in fairway maintenance and hydrographic surveying. Developing the overall organisation of icebreaking from a Finnish perspective, repatriating the revenue generated by the construction of offshore wind farms and maintaining the scale of current operations require an evolving internal machinery, new products and services, as well as employees who enjoy what they are doing under safe working conditions.

I wish to express my heartfelt thanks to all employees for the past year. We are in a great position to continue. At the same time, a big thank you to all our customers and stakeholders for smooth cooperation and the trust you have placed in us.

**Maunu Visuri**  
President and CEO





# Operating environment and strategy

Arctia's operations are divided into icebreaking, fairway maintenance and hydrographic surveying. Within this broader scope of operations, Arctia engages in port icebreaking, towage, buoy and marker manufacturing, digital tools development, canal management, structural surveys of ports, cable and pipe surveying, oil spill response services and customized service solutions.

Arctia has developed a comprehensive service concept where customers can choose from a wide range of waterway management services. Customized service solutions allow customers to focus on their core business.

Aside from Arctia's largest customer, the Finnish Transport Infrastructure Agency, we provide services to Traficom, the Finnish Border Guard, ELY centres, ports, companies, cities, municipalities and international customers.

In the Baltic Sea region, the demand for icebreaker assistance is expected to grow in the medium term due to the increase in maritime traffic, the growing size of vessels and, in particular, the vessels' impaired performance in ice conditions. New environmental standards and legislation will only accelerate this trend. Maintaining sufficient icebreaking capacity ensures that winter shipping will meet the needs of business and industry. As the current fleet

ages and operational needs change, there are growing pressures to modernize Arctia's icebreaker fleet, either by making mid-life upgrades or constructing new vessels.

Changes are also taking place in the fairway maintenance environment with the adoption of new tendering models. At the same time, digitalisation is gaining ground along with the maintenance of conventional safety devices and navigational aids. Remote control and management of safety devices will be introduced to new sea lanes, accompanied by active efforts to develop smart safety devices and systems. New service solutions will ensure safe and smooth navigation as municipalities, cities, ports and private operators continue to outsource the management of their watercourses to an increasing extent.

Currently, there are plans to construct several hundred megawatts of wind power capacity in Finnish territorial waters. In hydrographic surveying, we are currently carrying out a number of preliminary marine surveys for various offshore wind projects, and the volume of work is expected to increase as the projects make headway. There is no lack of areas to survey in the Finnish waters. At the same time, international demand for hydrographic services is expected to intensify as more plans are being made for

harnessing sea areas. Aside from hydrographic surveying, extensive use of data will grow in importance.

## STRATEGY

We are currently updating the strategy which is scheduled to be announced in Q2/2023. Some of the themes of the previous strategy will continue to be pursued, particularly sustainability and operational efficiency. With regard to icebreaking, our ambition is to play a major national role in the overhaul of the entire icebreaking system. Aside from marine cartography, we want to be market leaders in offshore wind farm surveying.

To briefly summarise the 2020-2022 strategy, we have made progress in all areas. Our structural profitability improved thanks to efficiency-enhancing measures. Progress has also been made in the understanding and implementation of sustainability policies. Further measures will be taken in particular to increase revenue and expand staff skills.





# Long winter in the Bay of Bothnia

The 2021-2022 winter was mild but long. Icebreaker assistance was needed on the Bay of Bothnia up to the end of May.

Compared to 2020, the 2021-2022 icebreaking season was abnormally long. The first icebreaker sailed on 2 December, and icebreaker assistance was required until the end of May. At its largest, the ice sheet on the Baltic Sea covered an area of 93,000 km<sup>2</sup>.

Seven of the eight Arctia icebreakers were in operation during the season. On the Bay of Bothnia, merchant vessels were assisted by icebreakers Otso, Kontio, Polaris, Sisu and Urho,

while Nordica operated on the Gulf of Finland and the Bothnian Sea. Icebreaker Voima experienced some technical issues during the season. Off-hire days totalled 21 in the season.

As in 2021, Covid-19 posed challenges to icebreaking. However, they were overcome and operations were carried out as agreed.

Kontio, Fennica and Sisu were docked in accordance with the five-year docking plan.

## PORT ICEBREAKING AND ESCORT TOWAGE SERVICES

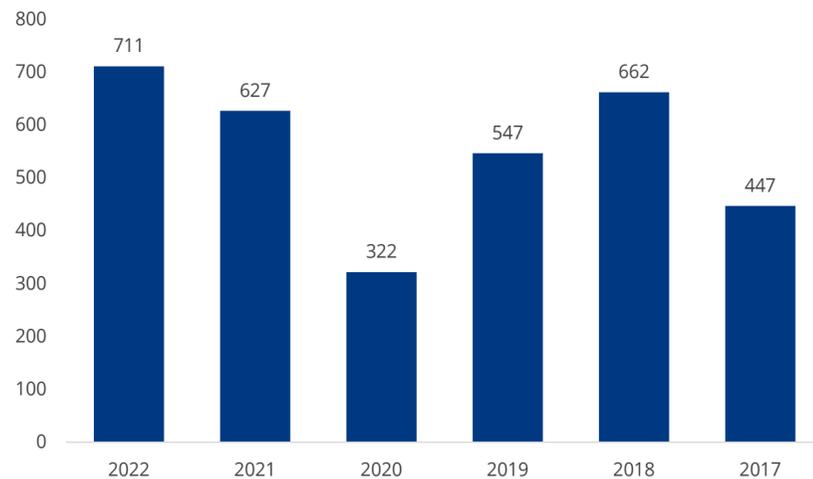
Arctia Karhu Oy is a company jointly owned by Arctia (90%) and Kemi Port Ltd (10%), providing harbour icebreaking, assistance and towage services extensively in the Bothnian Sea. In 2022, the port icebreaker Ahto assisted vessels in the port of Röyttä in Tornio and the harbour icebreaker Jääsalo in Ajos, Kemi. Port icebreaker Ulla served as a back-up.

Winter 2022 started early in the Bothnian Sea, but ice conditions in ports eased up significantly already in mid-March. As a result, the number of port icebreaking and assistance operations was lower than in the previous year. During the open season, Arctia managed to achieve record sales in services.

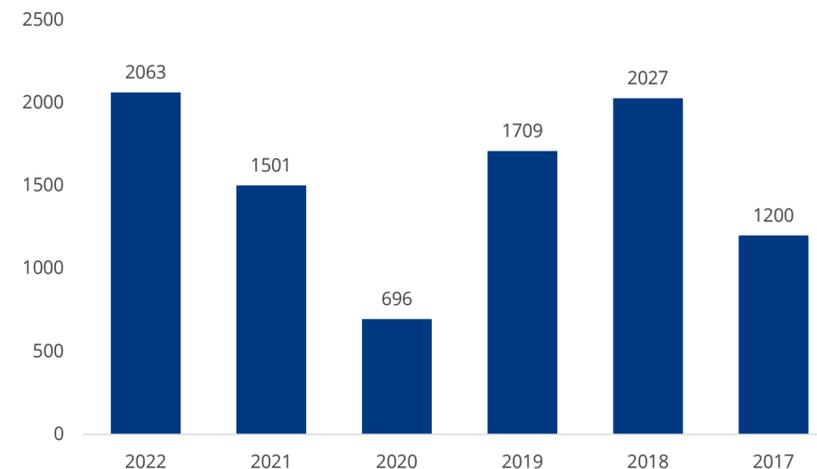
As in previous years, we continued to transport crews to the Ajos wind farms using a RIB boat.

The company's oil spill response agreement with the Lapland Rescue Department was extended until spring 2023.

Total operating days (qty)



Total assistance operations (qty)





# Positive financial performance in challenging conditions

The competitive tendering model for fairway maintenance contracts and fall in traffic volumes on the Saimaa Canal due to the war in Ukraine create uncertainties for business.

Fairway maintenance is undergoing a transformation as a result of the introduction of the tendering system based on maintenance management contracts. Under the new model, fairway maintenance operations on the Gulf of Finland and Gulf of Bothnia were put out to open tender, with Arctia winning the contract for the Gulf of Bothnia. In response to the changes in the operating environment, Arctia took measures to improve competitiveness.

The company continued to actively offer a range of waterways management and maintenance services to various customer groups in Finland, and multi-year service agreements were signed with several ports.

Online data on the status of maritime safety devices increases fairway safety. Remote monitoring of safety devices allows preventive maintenance, making it possible to carry out servicing more efficiently and save costs. Currently, over 2,000 safety devices and navigational aids are

covered by the remote control and management system.

Major progress is being made in remote control performance by improving light intensity control based on an automated system, i.e., AIS targets and visibility values. The year 2022 saw the first remote-controlled safety devices with automatic light intensity control introduced on the Joensuu fairway.

In 2022, Arctia was responsible for fairway maintenance in contracted areas on the Bay of Bothnia, the Gulf of Bothnia, the Archipelago Sea, the Bothnian Sea, the Seal of Åland and certain areas on the Gulf of Finland, put out to open tender by the Finnish Transport Infrastructure Agency. Additionally, the company is responsible for fairway maintenance on behalf of the Provincial Government of Åland. On inland lakes, Arctia managed fairway maintenance operations in Lappeenranta, Kuopio and Keitele.





YEAR 2022

OPERATING ENVIRONMENT  
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### ALL QUITE ON THE SAIMAA CANAL

Arctia operates the Saimaa Canal, its eight locks and seven lifting bridges, and is responsible for the maintenance of the electrical, construction and engineering systems of the canal. Almost half of the Saimaa Canal is located on land leased from Russia. The locks are operated from the remote control centre located in Mälkiä, Lappeenranta.

Freight traffic on the Saimaa Canal stopped almost completely after Russia invaded Ukraine in February 2022. During the 2022 season, the canal was only used by two cargo ships and around ten pleasure boats. Also, passenger services were provided up to the locks located on the Finnish side of the border. The prospects for continued operations on the Saimaa Canal and their impact on the future rounds of competitive bidding is a subject of public debate.

Aside from the Saimaa Canal, Arctia manages the inland low-depth canals and their opening bridges on the Heinävesi-Tahko and Varistaipale-Taivallahti routes and on River Kokemäki. The agreement with Ely Centre on the operation and maintenance of dams in North Ostrobothnia remains in force.

### NEW EXPERTISE IN CONSTRUCTION SERVICES

The Marine Construction Unit's projects included the renovation of the Längden lighthouse and the replacement of the western pier at Kirkonmaa. Construction Services possesses the

expertise and equipment to execute complex marine restoration and construction projects.

### BUOY FACTORY FOCUSES ON IMPROVING BUSINESS EFFICIENCY

The Joensuu Buoy Factory has been manufacturing buoys and spar buoys from HD polyethylene for over 40 years. Based on long-term development efforts, the products are second to none in the industry. Our products withstand ice conditions and are by far the best investment in terms of life cycle costs to safeguard waterborne transport. In 2022, the factory delivered buoys to Finland's coastal waters, inland watercourses as well as for international projects.

Product development efforts focused on the development of digital buoys and the recycling of buoys that had reached the end of their service life. The factory is fully equipped to manufacture all 160 and 225 mm buoys with remote control readiness. Additionally, the buoy recycling project was brought to a successful conclusion. Now the factory has a special station for disassembling used buoys and sorting the waste fractions.





# Opening to the offshore wind power market

The volume of hydrographic surveying activities is growing rapidly. In particular, offshore wind power projects stimulated demand for surveying, which has become another important source of revenue along with the surveying carried out for marine cartography purposes.

Arctia's strategic mission is to provide the hydrographic surveying services necessary for naval preparedness in all conditions. Under the Territorial Surveillance Act, a hydrographic surveying permit is required for all surveying

carried out in Finnish territorial waters. Arctia Meritaito and the Finnish Defence Forces have signed a security agreement on high security processes and operating models. Audited procedures and the security agreement provide

for smooth authorisation processes for high security hydrographic surveying.

Arctia operates one of the largest surveying fleets in Northern Europe. Every year, Arctia surveys thousands of square kilometres of seabed to the highest international quality standards, not only in Finland but also in other European waters. Our solid expertise and previous international and geophysical research projects have enabled us to expand our activities, allowing us to respond to the surveying needs of offshore wind power farms.

maintenance purposes were carried out to the highest international quality standards.

## SURVEYS OF SITES FOR OFFSHORE WIND POWER FARMS ALREADY ACCOUNT FOR HALF OF THE VOLUME OF OPERATIONS

Arctia carried out its first surveys of potential sites for offshore wind power farms in 2022. The project sites are located in Finland's economic zone and territorial waters on the Bay of Bothnia, the Bothnian Sea and the Sea of Åland. The customers were Finnish and foreign wind power development companies. They have been satisfied with the performance and development of the hydrographic surveying services provided by Arctia.

International cable and pipeline surveys were carried out on the Estlink 1 and Estlink 2 power cables between Finland and Estonia. This was the first time that Arctia used a low-frequency Cable Tracking device to track a buried cable even when the power was on.

The volume of business related to offshore wind power farms is expected to continue to grow in 2023.

## HYDROGRAPHIC SURVEYING FOR FINNISH GOVERNMENT AGENCIES RESPONSIBLE FOR SURVEYING AND MARINE CARTOGRAPHY

In 2022, Arctia carried out high-security surveys in the Archipelago Sea and the Sea of Åland for the Finnish Transport and Communications Agency (Traficom). Additionally, Traficom commissioned the company to chart the sea lanes to the Port of Vuosaari. A total of four channels were surveyed: Hanko, Loviisa, Oulu and Kemi. The surveys for marine cartography and fairway

Hydrographic surveying





### RESEARCH, PLANNING AND CONSULTATION IN HYDRAULIC ENGINEERING

A large number of seabed surveys related to hydraulic engineering were carried out for Helsinki City in 2022 to provide data for urban construction projects.

A range of hydraulic structures, piers, canals and dams were modelled for the authorities, municipalities, ports and energy companies. Sea lane design, expertise and consultancy services were provided in a total of around fifty projects.

### DATA MODELS AND HARNESSING

The measurement data and plans are presented in the form of 3D point clouds, CAD and ArcGIS data models and data model-based plans, as well as electronic map data. The data models make it possible to process and update data electronically, for example, at the different stages of construction. With regard to classified data, customers were offered IT and expert services to allow them to harness the findings.

### A CLEARER STRATEGY FOR HYDROGRAPHIC SURVEYING

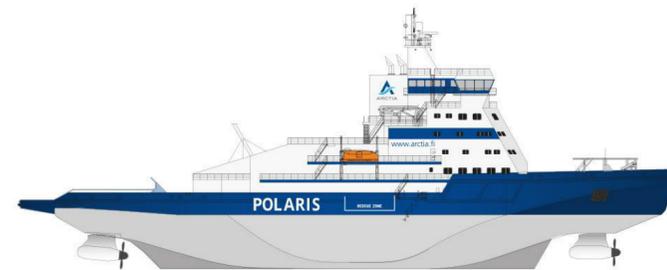
The strategy for hydrographic surveying has been clarified and will be announced in Q2/2023. Offshore wind power surveying will in future offer a further business growth opportunity along with the traditional marine cartography surveys. The future prospects for hydrographic surveying are bright and the direction is clear.



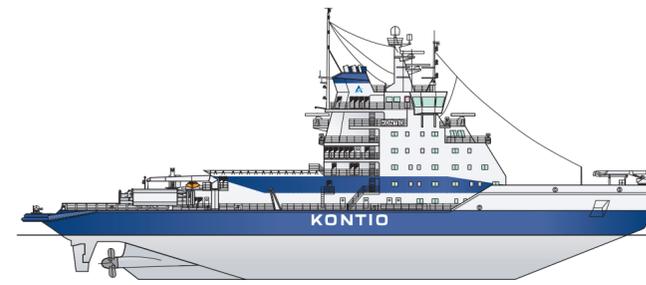


# A strong and diversified fleet of special-purpose vessels

Arctia's fleet includes the conventional icebreakers Voima (commissioned in 1954, refurbished in 1979 and 2016), Urho (1975) and Sisu (1976, refurbished in 2019), Otso (1986) and Kontio (1987), the multi-purpose icebreakers Fennica (1993) and Nordica (1994), and the port icebreakers Ahto (2014) and Polaris (2016).



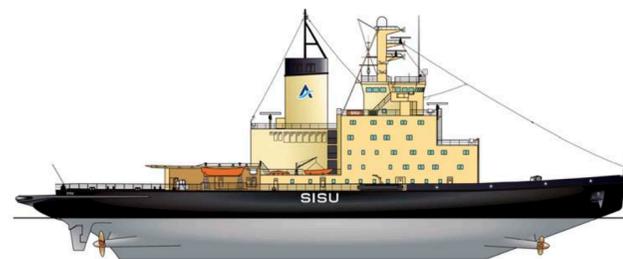
IB POLARIS 110 / 24 / 8.0 / 22,000



IB KONTIO 98.6 / 24.2 / 8.0 / 15,000



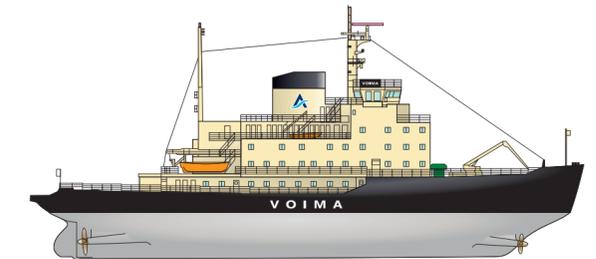
IB OTSO 98.6 / 24.2 / 8.0 / 15,000



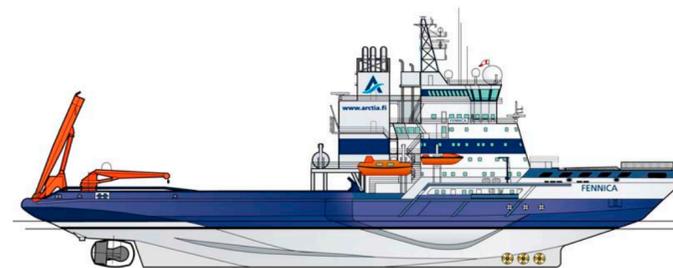
IB SISU 106.6 / 23.8 / 8.3 / 16,200



IB URHO 106.6 / 23.8 / 8.3 / 16,200



IB VOIMA 83.5 / 19.4 / 7.0 / 10,200



MTM FENNICA 116.0 / 26.0 / 8.4 / 15,000



MTM NORDICA 116.0 / 26.0 / 8.4 / 15,000



HIB AHTO 40.0 / 12.8 / 5.5 / 3,600

Length, m / Beam, m / Draught, m / Power, kW



Additionally, Arctia operates a wide range of hydrographic surveying, fairway maintenance and hydraulic engineering vessels. Arctia owns and operates seven hydrographic surveying vessels and boats suitable for offshore, coastal and inland waterway surveying.

Moreover, the company has three vessels suitable for heavy-duty maritime operations and one medium-duty Oili Class vessel. The fairway maintenance vessels are equipped for oil spill response duties.

In addition, Arctia has several Meri1000, Meri2000 and Meri4000 Class fairway maintenance ships and a wide range of hydraulic engineering vessels. Additional information on the fleet is available on [Arctia's website](#).



MPV Pohjanmeri 78,3 / 11,6 / 3,2



MPV Kaiku 22,5 / 7,0 / 1,3



M/V Keila 13,0 / 3,9 / 0,9



MSV Seili 50,5 / 12,2 / 3,8



MSV Linja 34,9 / 9,0 / 2,8



MSV Oili 25,0 / 6,6 / 2,1



Fairway maintenance vessel ORV1 17,7 / 5,0 / 1,3



Fairway maintenance vessel Meri2000 15,0 / 5,0 / 0,8



Hovercraft Puhuri 5,0 / 2,5

Length, m / Beam, m / Draught, m



**Arctia Ltd**

Laivastokatu 9, FI-00160 Helsinki, Finland

Tel. +358 30 620 7000

[arctia.fi/en](http://arctia.fi/en)