

# LAPLAND CHAMBER OF COMMERCE

# Briefing paper: Investments in the Barents region, business prospects and potential

President Liisa Ansala 16 February 2022





# LAPLAND CHAMBER OF COMMERCE

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#### Please consider the following when evaluating the results

The time horizon of the investment assessment reaches until 2030 with a few exceptions.

The data is based on public sources. The scales of the planned investments are indicative estimates provided by different parties, and they have uncertainty. If a range of values is given for the investments, the mean values are calculated..

The total is the best estimate at the time. In particular, the total amount of investments in Lapland may increase with more information of the projects in the region compared to the control regions. Similarly, the source data and contact networks of Finland's projects may distort the information in favour of Finland visà-vis the other countries. The investments in wind power in the Finnish provinces have been assessed by the experts of Korkia as one whole, their share of the total amount is considerable.

These amounts exclude difficult-to-assess themes, such as investments in EV charging networks in Finland or the promotion of the circular economy. If you need more detailed information on the projects included in the aggregated data, please consult the Lapland Chamber of Commerce.



The Barents Euro-Arctic region stretches across Finland, Sweden, Norway and Russia — cooperation was established in 1993 to promote stability and sustainable development



#### **FOUR COUNTRIES**

In the region, there is state-level cooperation in the form of the Barents Euro-Arctic Council (BEAC). The objective of BEAC is to promote stability and sustainable development in the Barents region, i.e., in the northern parts of Finland, Sweden, Norway and Russia. Finland holds the presidency of the Council from 2021 to 2023.

#### 14 REGIONS/COUNTIES

Alongside the Barents Euro-Arctic Council, the Barents Regional Council (BRC) brings together all the local areas of Barents: In Finland, the regions of Lapland, North Ostrobothnia, Kainuu and North Karelia, in Sweden the counties of Västerbotten and Norrbotten, in Norway Finnmark, Troms and Nordland, and in Russia the Republics of Karelia and Komi, the regions of Murmansk and Arkhangelsk and the Nenets Autonomous District.

THIS REPORT FOCUSES ON THE KEY AREAS FROM THE VIEWPOINT OF LAPLAND BUSINESS LIFE: THE PROVINCES OF LAPLAND, NORTH OSTROBOTHNIA AND KAINUU IN FINLAND, THE COUNTIES OF VÄSTERBOTTEN AND NORRBOTTEN IN SWEDEN, THE COUNTIES OF FINNMARK, TROMS AND NORDLAND IN NORWAY AND THE REGIONS OF MURMANSK AND ARKANGELSK IN RUSSIA.



The special features of the area are reflected through key industries — rich natural resources, long distances and the northern nature are accentuated



#### **KEY SECTORS**

Energy production, tourism, mining, forestry and fisheries are the key business sectors of the region.



### LOGISTICS IS A GROWING SECTOR

Logistics as an industry is a growing business sector due to industrial investments and eventual increased use of the Northeast Passage. More and more cargo is transported in the region and that requires new facilities in seaports, cargo handling and ships.

#### **POPULATION**

A total of 5.3 million people live in the geographical Barents region.

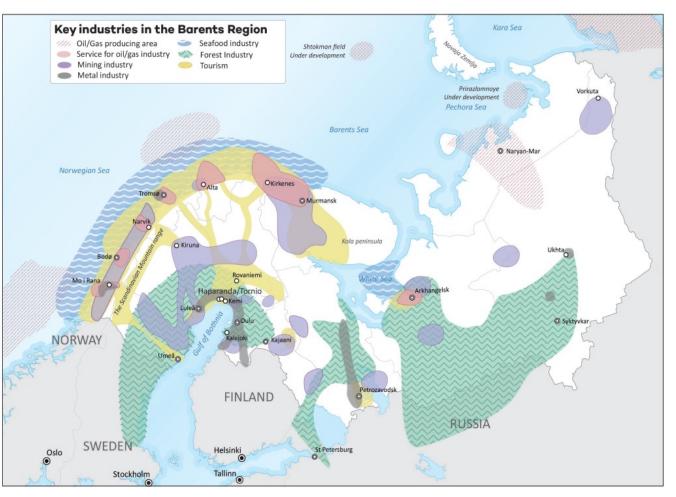


Image source: Joint Barents Transport Plan, Barents Euro-Arctic Region & Swedish Chairmanship



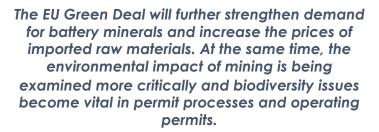
One of the key regulatory frameworks that influence regional development is the EU Green Deal

# **EXAMPLES OF KEY IMPACTS OF THE EU GREEN DEAL ON THE BARENTS REGION**



#### MINING

Electrification requires large quantities of new earth metals. The EU will boost the growth of the mining industry and, at the same time, the circulation of raw materials, securing demand for industrial manufacturing and reducing dependence on imported raw materials.





## **FOREST INDUSTRY**

In the future, the EU may take much stronger control over forest use and national policies, while the industry becomes climate neutral, and measures are taken to maximise carbon sinks.

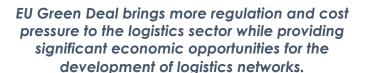


The price of bio-based energy is expected to rise.

The demand for biomaterials will grow significantly. The demand for and use of wood are increasing. Funding for basic forest research and innovation activities will increase significantly. With the taxonomy of sustainable finance, the financing of climate-related projects is cheaper, but the use of forests may become more difficult and the price of raw material that meet the climate criteria may increase.



The EU published an ambitious Smart Mobility strategy in the winter of 2020-2021. The strategy sets high targets for the development of the sector. The EU has announced that transport is one of the EU's key development areas, with major investment packages.





# 2 PROJECTS AND INVESTMENTS COUNTRY BY COUNTRY

# Please consider the following when evaluating the results

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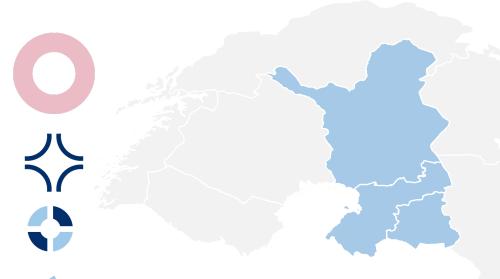






# **FINLAND**

# LAPLAND, NORTH OSTROBOTHNIA AND KAINUU





# General information about the region



**Metal industry** 



Mining industry



MAIN INDUSTRIES

**ICT and Technology** 







The regions of Northern Finland cover almost half of Finland's total area. The population density of the area is low, but on the other hand about 45 % of the inhabitants of Lapland, North Ostrobothnia and Kainuu are packed in the six largest cities in the region. Both the population and industry are strongly centred near the Gulf of Bothnia.

The leading industries in Northern Finland, known for Arctic conditions and large wilderness, are largely formed around natural resources through the bioeconomy, mining and metal industries, food production, tourism and energy production. In addition, the ICT sector is a significant employer, especially in Oulu, but increasingly also in Kainuu and Lapland.



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## **TOP CITIES**

- 1. Oulu (207 327)
- 2. Rovaniemi (63 528)
- 3. Kajaani (36 567)
- 4. Raahe (24 352)
- 5. Tornio (21 500)
- 6. Kemi (20 500)

	POPULATION	AREA	GDP	GDP PER CAPITA
Lapland	176 700	100 800 km <sup>2</sup>	6,5 Bn €	36 800 €
Kainuu	71 700	22 700 km <sup>2</sup>	2,4 Bn €	33 500 €
North Ostro- bothnia	413 800	45 900 km <sup>2</sup>	14,9 Bn €	36 000 €
Total	662 200	169 400 km <sup>2</sup>	23,8 Bn €	

# Current key trends related to economic development





#### **REGIONAL ATTRACTIVENESS**

A major challenge for the region is to maintain both jobs and a skilled workforce. The key task is to increase innovation activity, develop business operations, internationality, increase labour migration and ensure the continuation of higher education institutions. Expectations are directed at the transformation of work, for example, as teleworking becomes more common..



#### **EMERGING BIOECONOMY**

Forest companies such as Metsä Fibre and Stora Enso invest in production efficiency. The timber industry also invests a lot. In general, the development themes are higher downstream production, low carbon production and side stream recovery. At the same time, a balance is sought in the protection and exploitation of forests.



#### SUSTAINABLY EXTRACTED MINERALS

The growing demand for battery minerals makes the region extremely attractive. The majority of Finnish mines and mining reserves are in the three regions. On the other hand, there are major conflicts with, for example, nature conservation and the attitudes of the local population. Efforts are being made to develop the entire value chain around raw materials.



#### **ACCESSIBILITY**

Poor accessibility is a major problem in the region. Long distances, Arctic conditions and low population density create a challenging equation. On the other hand, tourism and heavy industry depend heavily on functioning infrastructure. Often domestic and cross-border accessibility is a prerequisite for investment.



#### **CIRCULAR ECONOMY**

Circular economy emerges as a key theme in the goals set by the regions. In particular, the circular industrial economy and its potential are highlighted. Other themes include circular economy in sparsely populated areas and biogas production from side streams and waste. The Kemi Centre for Circular Economy is Finland's first centre of expertise in the field and one of the leading experts in the country.



#### **DIGITAL LEAP**

Oulu is one of Finland's technology centres. Also in the other regions, technology operators drive growth. On the other hand, there are still problems with networks in sparsely populated areas and in smaller urban centres. Growth is strongly linked to the digital leap. Efforts will be made to increase and support e-services in the transition by providing digital support.



#### **CULTURAL WELL-BEING**

Lapland is home to the indigenous Sámi region. Ensuring the sustainability of the Sámi language and culture is important from the point of view of Finland as a whole. In addition, the general objective is to increase the supply of cultural services in the region in order to make the region more attractive. Low population density brings its own challenges.



#### LOW CARBON AND BIODIVERSITY

All regions, as all of Finland, aim to reduce emissions significantly. Nature is a significant attraction and an important resource for all three regions. On the other hand, there is a constant balancing act between nature conservation and exploitation of natural resources, between industry and energy production. The region's wind power capacity and plans have a significant impact on the low carbon performance nationally.



#### **GREEN TRANSITION**

In Northern Finland, the cornerstones of the green transition are climate change mitigation, investments in climate-wise infrastructure, strengthening Arctic situational awareness, circular and bioeconomy, higher value products, nature-based solutions and halting biodiversity loss. The aim is to create new opportunities for work and livelihoods in the region. The vulnerable nature and on the other hand, the natural resources that are essential for climate solutions, require balancing.

# Key companies in Northern Finland

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## **KEY COMPANIES IN NORTH OSTROBOTHNIA AND KAINUU 2022**

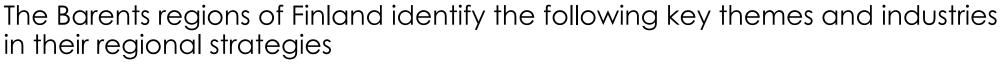
	Turnover 2020 (M€)
Nokia Plc	21 870
Terrafame Ltd	338
SSAB Europe Ltd	1 637
Stora Enso Plc	8 550
Skoda Transtech Ltd	77
Lehto Group Plc	545
Scanfil Plc	595
Oulun energia Ltd	177
Cooperative Pohjolan Maito	229
Wetteri Ltd	235
Technopolis Ltd	94
Cooperative Arina	843
Pörhön Autoliike Ltd	172
Kärkkäinen Ltd	220
Fennovoima Ltd	-
Cooperative Maakunta	172
Lapti Group	278

#### **KEY COMPANIES IN LAPLAND 2022**

	Turnover 2020 (M€)
Outokumpu Plc	5 639
BRP Finland Ltd	480
Agnico Eagle Finland Ltd	326
Boliden Kevitsa Mining Ltd	288
Tapojärvi Ltd	88
Botnia Mill Service Ab, Ltd	64
Napapiirin Energia ja Vesi Ltd	43
Havator Group Ltd	42
Lapland Hotels Ltd	32
Kemijoki Ltd	53
Napapiirin Kuljetus Ltd	54
Metsä Fibre Ltd	1 814
Cooperative Arina	843
LP Lakkapää Ltd	56
Norrhydro Ltd	20
Lappset Group Ltd	38

Lähde: Kauppalehti







#### **KEY THEMES**

In Kainuu there are growing and competitive export companies in several industries, the locomotives of their industry sectors. They are accompanied by thriving business ecosystems where companies and R & D organisations work together successfully with research, development and innovation. Substantial investments in production have been made in Kainuu. The share of industrial jobs in employment and labour productivity in Kainuu have risen to the level of the national average. Exports and processing of goods and services continue to grow.

#### **MAIN INDUSTRIES**

The ample natural resources and clean nature in the province provide an excellent framework for the growth of enterprises in the region. Kainuu also has high expertise in ICT, metal industry, bioeconomy, tourism and well-being, physical activity and sport.



#### **KEY THEMES**

The Oulu Region operates environmentally, socially, economically and culturally sustainably. We can solve complex and globally significant problems in an agile manner. We invest in vitality, support the emergence of an inclusive civil society and the collective, interactive engagement of all actors. We recognise and value both human and material resources. We trust ourselves and others.

#### **MAIN INDUSTRIES**

The priorities for smart specialisation in Northern Ostrobothnia include digital services and products, health and well-being, renewable and low-emission industries, sustainable construction and mobility, innovative bio and circular economy and smart food production.



#### **KEY THEMES**

Regional strategic programme, The Lapland Agreement, resulting from a phenomenon-based review, has identified cross-cutting themes with visible impact which are extensively considered in the development of the region and in all strategic priorities. The cross-cutting themes include Arctic and internationality, the green transition and the related Lapland Green Deal, the region's attractiveness and ability to keep its inhabitants, well-being and security, digitalisation, inclusion and equality.

#### MAIN INDUSTRIES

The key industries in Lapland are metal industry and other basic industries, forestry and bioproduct industries, extractive industry and tourism. Wholesale and retail trade, construction, transport and storage, bioeconomy, circular economy, business services, service and welfare industries, cold and winter testing are also important industries.

# Key spearhead projects and investments











# Pyhäjoki nuclear power plant

Fennovoima is applying for a construction permit for the Hanhikivi1 nuclear power plant. The company expects to get the permit by summer 2022 and the construction should start in 2023. At present, on-site infrastructure and support and auxiliary buildings are being built. Upon completion, the nuclear power plant is expected to produce about 10 % of Finland's electricity.

Volume: 7-7.5 Bn € Year of completion: 2029 Project owner: Fennovoima Location: Pyhäjoki, Northern Ostrobothnia

#### Kemi bioproduct mill

The Metsä Fibre Kemi bioproduct plant and related infrastructure are currently being built and commissioning will take place in 2023. The plant operates completely without fossil fuels and is intended to produce a variety of bioproducts and biobased electrical energy in addition to pulp. Any surplus electricity is transferred to the national grid. This is the largest single investment in the history of the forest industry.

Volume: 1.6 Bn €

Year of completion: 2023 Project owner: Metsä Fibre Location: Kemi, Lapland

## Mining projects

Several mining projects are under way in Northern Finland, which, if implemented, would amount to billions of euros of investments in the region. In addition, existing mines generate regular revenue streams. The increasing demand for metals puts pressure on the opening of new mines and the expansion of existing ones.

Volume: Billions of €

Year of completion: 2022-2030

Project owner: Several

Location: Lapland, Kainuu, Northern

Ostrobothnia

## Wind power projects

Under the leadership of Northern Ostrobothnia, the regions of Northern Finland play a key role in the rapid growth of wind power. Of the planned wind turbines in the whole of Finland (2/2021), 41 % are in North Ostrobothnia, 10 % in Lapland and 4% in Kainuu. is Expected to wind power investments in 2022 and 2023 in Northern Ostrobothnia alone are EUR 2.5-2.7 billion. In terms of location, the projects are concentrated in the proximity of the Gulf of Bothnia.

Volume: Billions of €

Year of completion: 2022-2030

Project owner: Several

Location: Northern Ostrobothnia.

Lapland, Kainuu,

# Other significant investment projects

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## Major hospital projects

The OYS2030 renovation program is underway in Oulu, with a total cost of approximately € 1.6 billion, and the Lapland Central Hospital will be expanded to € 138 million in Rovaniemi. In Kajaani, the € 165 **Project owner: Several** million investment by Kainuu Central Hospital is nearing completion.

Volume: 1.9 Bn € Year of completion: 2022-2030

Location: Oulu,

Rovaniemi, Kajaani



### SSAB Raahe modernization of production

SSAB is investing € 4.3 billion in reducing emissions at its Finnish and Swedish plants. A large part of the amount will be allocated to the Raahe and Luleå factories. 2030 If implemented, it will reduce emissions in Finland by about 7%.

Volume: 1-2 Bn € (estimate) Year of completion:

**Project owner: SSAB** Location: Raahe



# **Biojalostamohankkeet**

Plans for numerous biorefineries. such as KaiCell Fibers bioproduct plant in Paltamo (€ 900 million), Kemijärvi biorefinery (€ 950 million), Kemi Kaidi bioproduct plant (€ 900 million) and Nordfuel biorefinery in Haapavesi (€ 300 million).

Volume: 3 Bn € Year of completion: by 2030 Project owner: Several

Location: Lapland. Northern Ostrobothnia. Kainuu



#### **Tourism investments**

Tourism investments are made across three provinces. The majority of tourism investments are concentrated in tourist centers, such as Levi, Saariselkä, Ruka, Vuokatti and Kalaioki, as well as in the larger cities of Oulu and Rovaniemi.

Volume: 2.4 Bn € Year of completion: 2022-2030

**Project owner: Several** Location: Lapland, Northern Ostrobothnia,

Kainuu



There are many investment plans related to transport infrastructure in Northern Finland, especially road and rail transport, ports and telecommunications networks. Several of the larger transport investment packages are linked to the realization of major industrial investments.

Volume: 2-3 Bn € Year of completion: 2022-2030

**Project owner: Several** Location: Lapland, Northern Ostrobothnia,

Kainuu



In the technology sector, investments are being made and actively planned. One of the largest investments is Nokia's project to build new premises for approximately 2,600 employees in Oulu. Construction is scheduled to begin in 2022.

Volume: 200-250 M € Year of completion:

2025

**Project owner Nokia Location: Oulu** 







# Investments in Northern Finland total 47 121 M€

- Confirmed/Ongoing 8 373 M€
- Planning phase 38 748 M€



# **Industry**

Ongoing/confirmed: 3 715 M€ Planned: 9 955 M€

> Total: 13 670 M€

Other

000

Ongoing/confirmed: 279 M€ Planned: 355 M€

Total: 634 M€



# **Energy**

Ongoing/confirmed: 150 M€ Planned: 23 949 M€

Total: 24 099 M€





Ongoing/confirmed: 3 385 M€ Planned: 2 942 M€

Total: 6 326 M€



Ongoing/confirmed: 845 M€ Planned: 1 548 M€

Total: 2 392 M€

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\*The significant increase in total investment compared to the previous survey can be explained by the growth in wind power investments, by the investment programmes already underway and a more detailed mapping of even small projects. In Finnish projects, the source data and contact networks may distort the view in favour of Finland vis-à-vis the other countries.

# Investments in Lapland total 17 947 M€

- Confirmed/Ongoing 3 955 M€
- Planning phase 13 991 M€



# Industry

Ongoing/confirmed: 2 982
Planned: 7 300

Total: 10 282 M€



# **Energy**

Ongoing/confirmed: -0 Planned: 3 871

Total: 3 871 M€



# Other

000

Ongoing/confirmed: 15
Planned: 300

Total: 315 M€



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# Infra

Ongoing/confirmed: 832 Planned: 1 270

Total: 2 102 M€



Ongoing/confirmed: 127
Planned: 1 251

Total:1 377 M€

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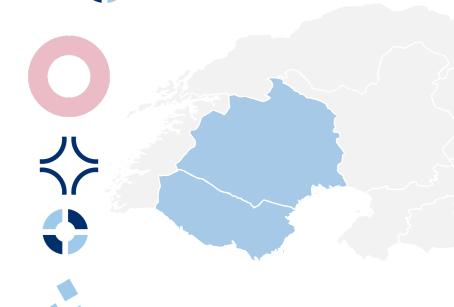






# **SWEDEN**

# NORRBOTTEN AND VÄSTERBOTTEN





# General information about the region





Car industry

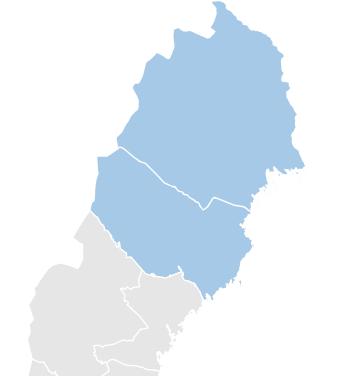






Sweden's Norrbotten and Västerbotten together form the Upper Norrland region. The region is best known for large mining projects and 90 % of European iron ore production takes place in the Norrbotten region. Västerbotten produces a lot of gold, copper and zinc.

In addition to the mining industry, the region is active in the steel industry and is actively engaged in decarbonising the steel industry.



## **TOP CITIES**

- I. Umeå (130 220)
- 2. Skellefteå (71 860)
- 3. Luleå (48 730)
- 4. Piteå (23 350)

	POPULATION	AREA	GDP	GDP PER CAPITA
Norrbotten	249 600	97 200 km²	12,0 Bn €	48 100 €
Västerbotten	273 200	55 200 km <sup>2</sup>	10,9 Bn €	39 900 €
Total	522 800	152 400 km <sup>2</sup>	22,9 Bn €	

MAIN INDUSTRIES

# Current key trends related to economic development





#### **RENEWABLE ENERGY**

Several renewable energy projects are being implemented in Northern Sweden. In addition, one of the main factors behind the major investments in the region is the availability of renewable energy in northern Sweden.



#### **SUSTAINABLE MINING**

Mining is one of the main industries in northern Sweden. The sector is working towards a more sustainable development in order to reduce emissions, while at the same time meeting the growing demand for minerals as a result of electrification.



# FROM THE EXPORT OF RAW MATERIALS TO PROCESSING

Northern Sweden has previously focused on the export of raw materials, including ore, forest products and minerals.
Recently, however, Northern Sweden has started to process the raw materials itself. The volume and value of processed products is likely to grow in the coming years and will attract new companies and big investments in the region.



#### **GREEN STEEL**

Steel production is one of the main industries in Northern Sweden and several green steel production projects are about to start in the region. It is estimated that investments in green steel will bring up to 10 000 new jobs in Northern Sweden.



#### **AGEING**

Population stagnation has changed the age structure in Northern Sweden. The average age of the population is rising and the proportion of persons over the age of 65 in the working-age population has risen from 27.4 % to 36.6 % over the last 20 years.



#### **EXPORT OF PROCESSED PRODUCTS**

At national level, the economy of Northern Sweden is dominated by industrial activities related to natural resources. Industrial activity is higher than the national average. A large proportion of these activities are exportoriented, so the regional economy benefits from a higher share of trade than the national average.



**GREEN BATTERIES** 

Northern Sweden focuses on the production of green batteries, and battery plants are being built to promote more sustainable battery production.



#### **LABOUR FORCE**

Northern Sweden has been one of the worst areas of migration loss in Sweden, especially for people under 30. It is estimated that, for example, Luleå will need 25,000 new inhabitants to meet the demand for labour over the next 20 years.



#### **GREEN TRANSITION**

In Northern Sweden, major green transition will take place in the coming years, where operators in heavily polluting sectors, such as mining and steel, are developing green production solutions.





# **KEY COMPANIES IN VÄSTERBOTTEN 2021**

	Turnover (M€)
Skellefteå Stadshus Ltd	527,5
Komatsu Forest AB	333,2
Umeå Kommunföretag AB	281,4
Ålö Holding AB	203,3
Martinson Group AB	183,2
Skellefteå Bil Holding AB	147,5
Wipro Infrastructure Engineering AB	145,3
Thorengruppen AB	129,7
Umia Sweden AB	116,0
Umia Holding AB	116,0
Vitec Software Group Plc	114,4
Rekab Entreprenad Ltd	104,5
Contractor Bygg Holding Norr Ltd	102,2
Fastec Sverige Ltd	100,4
Kung Fu Invest Ltd	84,0

#### **KEY COMPANIES IN NORRBOTTEN 2021**

	Turnover (M€)
LKLtd	3094,7
Sveaskog Ltd	713,7
Smurfit Kappa Kraftliner Piteå Ltd	458,9
BDX Företagen Ltd	430,8
Max Hotell-och Restauranginvest Ltd	360,7
Skoogs Handels Ltd	190,6
Luleå Kommunföretag Ltd	185,6
Lindbäcks Group Ltd	185,3
Stenvalls Trä Ltd	142,7
Sunpine Ltd	141,1
Wibax Ltd	126,3
Polarbrödsgruppen Ltd	125,6
Nåiden Bygg Ltd	116,1
StudentConsulting Invest Ltd	110,5
Piteå Kommunföretag Ltd	104,1
Swedish Space Corporation (Esrange)	98,3



The Barents counties in Sweden identify the following key themes and industries in their regional strategies:



### **KEY THEMES**

Norrbotten's goal is to profile and position itself as a competitive, sustainable and innovative Arctic region. The key themes are a high quality of life in an attractive environment, sustainable transport and accessibility, a flexible and functional pool of skills, smart and sustainable innovations and entrepreneurship.

#### **MAIN INDUSTRIES**

In the area of smart specialisation, the Provincial Development Programme identifies four key sectors, which will be specifically addressed in the future: cultural and creative industries, green industries, space know-how and readiness for Arctic testing..



#### **KEY THEMES**

Västerbotten's goal is to be a province in which cities live side by side with sparsely populated areas, where high-tech and state-of-the-art research coexist with Sámi traditions, where forests, rivers, mountains, marshes and fertile agricultural land work together with industrial areas, where there are research environments and cultural encounters.

#### **MAIN INDUSTRIES**

OECD8 lists the following areas of expertise for Västerbotten: industrial diversification through forest and bioeconomy innovations, renewable energy production, natural landscapes, mineral resources and other natural resources.

# Key spearhead projects and investments







The H2 Green Steel project in Boden is currently underway, with the aim of creating a fossil-free steel plant. The plant's production capacity targets 5 million tonnes of fossil free steel per year by 2030. H2 Green Steel and the Municipality of Boden have signed a letter of intent to sell 500 hectares of land and, if implemented, the project would be one of the largest in Boden's history.

Volume: 2,5 Bn €

Year of completion: 2024 Project owner: H2 Green Steel Location: Boden, Norrbotten





# HYBRIT – Carbon neutral steel

Vattenfall, SSAB and LKAB are jointly implementing the HYBRIT project, which enables fossil-free steel production. The project will develop a production technology using hydrogen instead of coal and coke in the separation of iron and oxygen. Through the HYBRIT project, SSAB aims to become a fossil-free company by 2045 — which would reduce Sweden's CO2 emissions by up to 10 %. The project is currently in a pilot phase and produces about a ton of steel per hour.

Volume: 1,2 Bn €

Year of completion: 2026 Project owners: SSAB, LKAB,

Vattenfall

Location: Luleå and Gällivare,

Norrbotten



# Northvolt battery factory

Northvolt is building the largest battery plant in Europe, the development of which involves, among others, former Tesla leaders. The aim is to produce green batteries using renewable energy. The battery plant is estimated to employ more than 2 000 people once commissioned, for example, crane, cement, metal and electricity companies. Volkswagen has been involved in the financing of the project..

Volume: 3,9 Bn €

Year of completion: 2025 Project owner: Northvolt Location: Skellefteå.

Västerbotten



## Markbydgen wind farm

The Markbygden wind farm is a project carried out by Svevind. The wind farm is expected to generate a total of 12 TWh of wind power per year with 179 wind turbines. Markbygden Park will be the largest onshore park in Europe when completed.

On the experience gained in the Markbygden Park, Svevind plans to develop a series of wind farms in Europe with a total of 1101 turbines.

Volume: 5,8 Bn €

Year of completion: 2026 Project owner: Svevind Location: Pitea, Norrbotten

# Other significant investment projects

# LKAB: Carbon neutral steel production by 2045

Volume: ca. 40 Bn. € Year of completion: 2045 Project owner: LKAB

Location: Kiruna, Malmberget and Svappavaara,

Norrbotten



## SSAB Luleå production reform

Volume: ca. 1-2 Bn. € (estimate)

Year of completion: 2030 Project owner: SSAB

Location: Luleå, Norrbotten



## Grupo Fertiberia: fertilizer plant using hydrogen

Volume: ca.1 Bn. € Year of completion: -

Project owner: Grupo Fertiberia Location: Luleå or Boden, Norrbotten



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# SCA Obbola: Paper machine for kraftliner production

Volume: ca. 700 M€ Year of completion: 2023 Project owner: SCA Obbola Location: Västerbotten



# Total cost of the Malbanan-network ERTMS signaling system

Volume: ca. 3 Bn. € Year of completion: 2026 Project owner: Public sector

**Location: Norrbotten** 



# Talga Resources: Graphite project and battery components production in Luleå

Volume: ca. 200 M€ Year of completion: 2030 Project owner: Talga Resources Location: Luleå, Norrbotten





# Investments in Northern Sweden in the Barents Region total 77 553 M€

- Confirmed/ongoing 65 517 M€
- In the planning phase 11 836 M€



# **Industry**

Ongoing/confirmed: 48 066 M€ Planned: 9 672 M€

Total: 57 767 M€



# **Energy**

Ongoing/confirmed: 7 000 M€ Planned: 970 M€

Total: 7 971 M€



# Infra

Ongoing/confirmed: 7 054 M€ Planned: 25 M€

Total: 7 248 M€



# Other

Ongoing/confirmed: 3 397 M€ Planned: 1 000 M€

Total: 4 397 M€



Ongoing/confirmed: 0 Planned: 169 M€

Total: 169 M€

The investment estimates, by definition, focus on projects up to 2030. Construction projects have been taken into account in the investment assessment to a limited extent. In addition, the exact contribution of Northern Sweden to the National Infrastructure Plan between 2022 and 2033 (ca. EUR 85 billion) has not been provided in the plan, thus weakening the overall assessment.

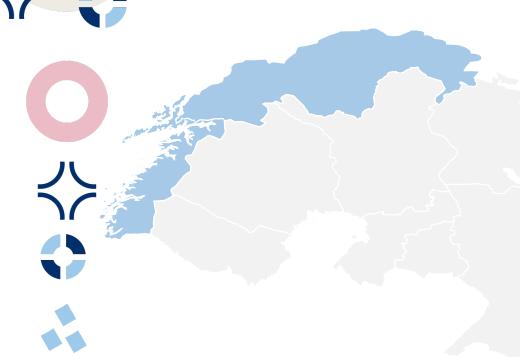








FINNMARK, TROMS AND NORDLAND





# General information about the region









**Fisheries** 





Minerals and mining



Finnmark, Troms and Nordland together form a region of Northern Norway with a special focus on fisheries and energy. The region has many fish industry companies, and the Northern Norwegian industry relies heavily on fish farming and processing.

There is a lot of oil industry activity in the area and the main Norwegian oil giants are developing their operations in the Barents Sea. In recent years, however, the operators' investments and development have turned towards the production of renewable energy and green batteries.



## **TOP CITIES**

- 1. Tromsø (77 400)
- 2. Bodø (52 800)
- 3. Rana (26 200)
- 4. Harstad (24 700)
- 5. Narvik (22 000)
- 6. Alta (21 100)

	Population	Area	GDP	GDP PER CAPITA
Finnmark	75 900	48 600 km²	3,1 Bn€	40 800 €
Troms	59 600	25 900 km²	2,5 Bn €	41 900 €
Nordland	239 600	38 200 km²	9,9 Bn €	41 300 €
Total	375 100	112 700 km²	15,5 Bn €	

**Tourism** 

MAIN INDUSTRIES

# Current key trends related to economic development





# WIND AND HYDROGEN AT THE HEART OF THE ENERGY SECTOR

A number of projects focusing on wind power and hydrogen produced with wind power are currently underway. In the north, there are better conditions for wind power than in Southern Norway, but limited grid capacity and extensive reindeer husbandry areas limit the development of wind power in the north.



#### POPULATION IN DECLINE

The ageing population and the negative impact of the COVID-19 pandemic threaten to accelerate the decline in the population in Northern Norway. Industrial sectors are concerned about the flight of knowledge. Only 9 % of the population of Norway live above the Arctic Circle, so it is strategically and economically important to increase the population of the region.



# EXPORTS BASED ON NATURAL RESOURCES INCREASE IN VALUE

The value of exports based on natural resources has grown in Northern Norway. For example, the value of exports of the region's fish industry in 2020 reached one of the best ever figures: NOK 31.9 billion.



#### **ELECTRIFICATION**

Norway is a leader in electrification. Several green battery projects are underway in Northern Norway and the battery industry operators find the region attractive.



#### INVESTING IN EDUCATION

As part of attracting workers and residents to the region, Northern Norway has recognised the importance of investing in training programmes. The relevant educational offer in Northern Norway strengthens the opportunities of young people and attracts outsiders to the region.



# EMISSIONS HIGHER THAN IN THE REST OF NORWAY

Emissions per inhabitant in northern Norway are higher than in the rest of Norway. This is due to the structure and geographical distances of the region's industries. However, the green transition of leading companies is becoming a new norm in the region.



# INVESTMENT PROSPECTS IN THE REGION POSITIVE

In 2020, Norway introduced a change to Norwegian tax incentives. According to prognoses, this change is expected to trigger strong growth in investments in 2023.



#### TOURISM HIT BY THE PANDEMIC

The COVID-19 pandemic has had a strong impact on tourism as a result of strict travel restrictions and quarantine rules in Norway. Passenger traffic in the region decreased sharply and the most affected by the pandemic was the air traffic. Industrial actors are also concerned about the loss of expertise as they are now at risk of losing key competences when many employees resign.

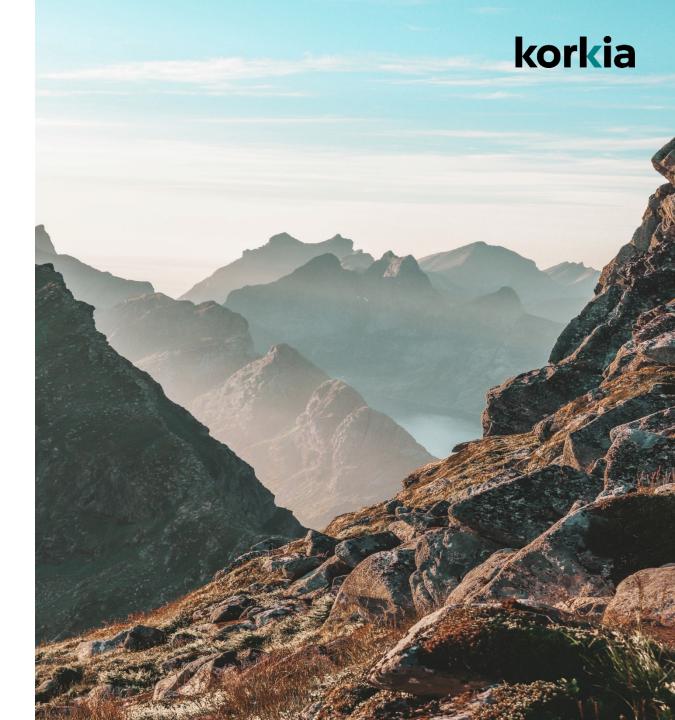


#### TOWARDS A GREENER NORTH

The transition towards a greener north has started in the region. The region aims to invest in sustainable business development and more flexible working arrangements to attract young people to move to and stay in the region.

# Key companies in Northern Norway

Equinor Freyr Horisont Energi Ishavskraft Helse Nord Norges Råfisklag Troms Kraft Boreal Sjø Consto Holding Avinor Hammerfest Energi Alcoa Norway Coop Alta Kraftlag Asko Nord Nordlaks Torghatten



# Spearhead projects and investments







The Norwegian battery producer Freyr is planning to establish gigawatt-level battery cell factories in Northern Norway. The first factory project is located in Mo i Rana, where Freyr develops a lithium battery plant. The battery plant is part of a larger crossborder project "Nordic Battery Belt", which aims to develop battery production through several battery plant projects.

Volume: 2,9 Bn €

Year of completion: 2024 Project owner: Freyr

Location: Mo i Rana, Nordland



# Equinor and Horisont Energi

The oil and gas giant Equinor in Hammerfest, in collaboration with the coal technology company Horisont Energi, is implementing a carbon-neutral ammonia plant based on the use of blue hydrogen. In addition to the ammonia factory, Equinor and Horisont Energi are also developing a carbon capture and storage project aimed at building carbon storage in subsea rock formations along the coast of northern Norway.

Volume: 1 Bn €

Year of completion: Starts in 2022 Project owner: Equinor and Horisont

Energi

Location: Hammerfest, Tromsø/

**Finnmark** 



# Wind power projects

Several wind power projects and projects for hydrogen produced by wind power are currently planned in Northern Norway by various developers. Wind power projects are ongoing in Kvitfjell, Hammerfest, Tysfjord and Øyfjellet.

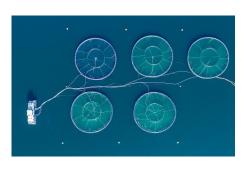
Year of completion: Depends on

the project

**Project owner: Several** 

Location: Troms, Finnmark and

Nordland



## **Aquaculture Innovations**

Aquaculture Innovations is currently developing a salmon farming project in northern Norway in Bronnoysund, Nordland. The project aims to build an area of approximately 500 acres in the Toft business area for the marine industry, which would be suitable for the soil cultivation of salmon and support the management of the entire value chain in the same area. A slaughterhouse, a sludge factory, a feed mill and a maintenance plant could be located in the area. The plant's annual production capacity is estimated at 10 000 tons.

Volume: 0,6 Bn €

Project owner: Aquaculture

**Innovations** 

Location: Bronnoysund, Nordland

# Other significant investment projects

## Ny by - Ny flyplass

Volume: ca. 300 M€ Year of completion: 2026 Project owner: Avinor Location: Bodø, Nordland



#### Northern lights

Volume: ca. 670 M€ Year of completion: 2030

Project owner: Equinor, Shell and Total

**Location: Northern Norway** 



# A commercial base for the launch of small satellites

Volume: ca. 130 M€ Year of completion: 2022

Project owner: Andøya Space Orbital

**Location: Nordland** 



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ENERGI i NORD: A cooperation cluster of 35 actors for the development of renewable energy

Volume: -

Year of completion -

Project owner: ENERGI i NORD Location: Northern Norway



# Wisting Field –Oilfield development in the Barents Sea

Vokume: 5 Bn. €

Year of completion 2022 Project owner: Equinor Location: Barents Sea



## Muskensenter: New hydropower plant

Volume: ca. 500 M€ Year of completion : -

**Project owner: : Muskensenter** 

**Location: Nordland** 





Investments in the Barents areas of Northern Norway, total 35 132 M€

- Confirmed/ ongoing 20 010 M€
- In the planning phases 15 121 M€



# Industry

Ongoing/confirmed: 141 Planned: 3 492

Total: 3 633 M€

000

# Other

Ongoing/confirmed: 205 Planned: 145

Total: 350 M€



# **Energy**

Ongoing/confirmed: 8 593
Planned: 8 816

Total: 17 409 M€



Ongoing/confirmed: -0 Planned: 50

Total: 50 M€



# Infra

Ongoing/confirmed: 11 072 Planned: 2 617

> Total: 13 690 M€

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# korkia

# General information about the region



Maritime logistics and shipbuilding



**Minerals** 









The Murmansk region is located in Russia's northernmost all-year-round port, serving growing traffic volumes. More than 60 million tonnes of freight pass through the port every year. The Murmansk region produces 100 % of Russian cobalt, apatite and nepheline concentrates and 95 % of the country's nickel. In addition, iron ore and copper are produced in the region. Electricity and heat are produced in the region, by hydropower and from fossil sources. The region also plays an important role from the point of view of the Russian naval force.

The Arkhangelsk region is the largest region of Russia's European part, the centre of which is the city of Arkhangelsk. The region has rich natural resources: 28.3 million hectares of forest area, Europe's largest diamond reserves and abundant reserves of lead, limestone, silver and zinc. There are also 250 thousand kilometres of rivers and extensive water reserves. The Arkhangelsk region also includes the Nenets Autonomous District, located north-east of it. Nenets is especially known for its rich oil and gas resources.



### **TOP CITIES**

- 1. Arkhangelsk city (349 000)
- 2. Murmanski city (292 600)
- 3. Sverodvinsk (180 000)
- 4. Kotlas (62 000)
- 5. Apatity (55 200)
- 6. Severomorsk (52 600)

	POPULATION	AREA	GDP	GDP PER CAPITA
Murmansk	748 100	144 900 km²	6,6 Bn €	8 800 €
Arkhangelsk	1 120 000	413 000 km²	5,3 Bn €	4 700 €

## RUSSIA – MURMANSK AND ARKHANGELSK



There are ample natural resources in the northern part of Russia, but few inhabitants — at state level, companies are attracted to the region with significant tax advantages

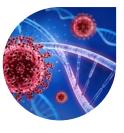


ARCTIC ZONE TAX PROGRAM
The new tax advantage has led a large number of companies to invest in the northern parts of Russia. By registering in the area, a company can, for example, be tax-exempted for non-mining activities for ten years. With the incentive, investments of more than EUR 1.25 million are planned for Murmansk and EUR 260 million for Arkhangelsk.



#### WASTE CRISIS MADE PEOPLE ACT

The large-scale investment planned for the Arkhangelsk region to establish a new waste treatment plant for waste in the Moscow region was faced with rare resistance, and the project was suspended.



In the Murmansk and Arkhangelsk regions, significant clusters of infection have been observed, especially in the construction industry. In Russia, the vaccine coverage is low, and heavy restrictions are avoided. According to official data, 75,200 people have died in Russia, but according to international analyses, the country's population decreased by 510 000 between January 2020 and January 2021.



The population of Murmansk decreased by one percentage point in 2020. Within the region, military sites attracted new inhabitants, but there is still no sign that the stagnation in other parts of the region would stop.



### TRAFFIC IN THE NORTHEAST PASSAGE LESS THAN EXPECTED

In the newly opened northern maritime corridor, transit traffic has not increased as expected. By contrast, traffic related to the use of fisheries, tourism and natural resources has increased.



### TRANSITION TOWARDS A **GREENER NORTH**

Russia has signed the Paris Agreement and aims to reduce emissions by 30 % from 1990 to 2030, but overall, efforts to reach this target remain to be seen. In the latest energy strategy by 2035, Russia will continue to develop the oil and gas industry, with a strong emphasis on expanding natural gas exports.



#### **CORPORATE SOCIAL RESPONSIBILITY**

Many large companies, especially in Murmansk and Arkhangelsk, are important local employers. In order to be able to do business. companies also play a major role in promoting the vitality and well-being of the regions.



#### **INVESTMENTS IN TOURISM**

In addition to industrial investment, investment in tourism, particularly in the Murmansk region, has increased, and tourism is one of the region's leading sectors. Around 450 000 tourists visit the area every year, especially in areas related to fishing and the unique features of northern nature.

# **RUSSIA – MURMANSK AND ARKHANGELSK**

# Key companies in Murmansk and Arkhangelsk



#### **KEY COMPANIES IN MURMANSK 2021**

JSC	C Kovdorsky ore processing plant
JSC	C Olenegorsk ore processing plant
JSC	C Apatit
CJ	SC North-Western Phosphorous Company
LLC	C Lovozersky ore processing plant
	rmansk part of the Oktyabrskaya railway - a branch of Russian ilways
Brc	anch of JSC RUSAL Ural in Kandalaksha UC RUSAL KAZ
Brc	anch Kolsky of PJSC TGC-1
JSC	C Murmansk Commercial Sea Port
LLC	C Kandalaksha Commercial Sea Port
ISC	C Kola MMC

## **KEY COMPANIES IN ARKHANGELSK 2021**

UTC Group Co	ompanies LLC
Forest LLC	
Onega Sawm	ills JSC
Ilm Group JSC	
Arkhangelsky	Plywood Plant JSC
Sawmill 25 CJ	SC
Arkhangelsk P	ulp and Paper Mill Company JSC
Sevmash Proc	uction Association JSC
Zvyozdochka	Shiprepairing Center JSC
Arktika Northe	rn Production Association JSC
North Raid JS0	2
Bius CJSC	
Northern Raily	vay – the Branch office of RZD OJSC

### **RUSSIA – MURMANSK AND ARKHANGELSK**

## Key spearhead projects and investments







As part of the Arctic Zone programme, Fedorovo Resource has launched a mining project focusing on platinum metal mining, located in Europe's largest deposit on the Kola Peninsula. The project will produce between 90 and 250 thousand tons platinum metals at the mine.

The project is expected to create about 1,200 new jobs in the region.

Volume: 5,4 Bn €

Year of completion: 2045

Project owner: Fedorovo Resources Location: Kola Peninsula, Murmansk



# Deep-sea port in Arkhangelsk

The development of the Arkhangelsk Port aims to create a more attractive route for freight between Europe and Asia from the north-east corridor. One of the main financiers of the port extension is Chinese Poly International Holding Co.

The objective is that by 2035

almost 40 million tons of freight will pass through the port.

Volume: 1,2 Bn €

Year of completion: 2026 Project owner: LLC Northern deepwater site of Arkhangelsk Location: City of Arkhangelsk,

**Arkhangelsk** 



#### Valla Tunturi tourism centre

Near Pechenga, a new modern tourist centre is being developed in Murmansk. It is expected to be built in 2023. A large tourist village will be built with various facilities and hiking trails to waterfall attractions in the area. Nornickel is one of the investors of the project.

Volume: 333,43 M € Year of completion: 2026

Project owner: Valla-Tunturi LLC Location: Pechenga, Murmansk



#### **Arctic LNG 2**

Novatek is building an LNG production facility in the Murmansk region, funded by several international energy operators. The LNG production facility will be set up at sea and its operation is expected to start in 2023, reaching full capacity by 2026.

Volume: 1,7 Bn € Year of completion: 2026 Project owners: Novatek,

TotalEnergies, CNPC, CNOOC,

Japan Arctic LNG
Location: Belokamenka.

Murmansk

### VENÄJÄ – MURMANSK AND ARKHANGEL

## Other significant investment projects

#### Lomonosov diamond mine

Volume: ca. 900 M€ Year of completion: 2067 Location: Arkhangel



### Construction of a methanol plant

Volume: ca. 760 M€ (estimate)

Year of completion: Beginning in 2022

Project owner: Nizami Piriyev

**Location: Arkhangel** 



### "Northern Lights" tourist center

Volume: ca. 200 M€ Year of completion 2025 Location: Murmansk



# korkia

#### Belkomur rail project, Poly International Holding

Volume: ca. 2,4 Bn € Year of completion : -

**Project owner: Poly International Holding** 

Location: Arkhangel



### New board production plant

Volume: ca. 1,3 Bn € Year of completion 2027

Project owner: Arkhangelsk PPM

**Location: Arkhangel** 



"Arctic Capital" project to develop industry and infrastructure in the region.

Volume: ca. 1,2 Bn € Year of completion 2035 Location: Murmansk



### **RUSSIA – MURMANSK AND ARKHANGELSK**

# korkia

### Investments in Murmansk and Arkhangelsk regions, total 18 564 M€

- Confirmed/ongoing projects 12 856 M€
- In the planning phase 5 708 M€



Ongoing/confirmed: 8 787
Planned: 1 741

Total: 10 528 M€



Ongoing/confirmed: 3 Planned: 33

Total: 36 M€



Total: 563 M€



Ongoing/confirmed: 240 Planned: 870

Total: 1 110 M€



Ongoing/confirmed: 3 481 Planned: 2 846

Total: 6 327 M€

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# 3 SUMMARY AND CONCLUSIONS



# Investments in the entire region reach a total of EUR 178 billion over the coming years

Regional breakdown of investments

• Northern Sweden: 77 553 M€

• Northern Finland: 47 121 M€

Northern Norway: 35 132 M€

Murmansk and Arkhangelsk: 18 564 M€

Other

6 Bn €

**Energy** 

50 Bn €

Industry

86 Bn €



Tourism 4 Bn €

# Summary of results

- The notion of the North as the driving force for industry is getting stronger.
- The energy sector is becoming another cornerstone.
- The investment potential of Northern Sweden is the highest in the Barents region.
  - The fact that most of the investments come from projects that are already confirmed makes Sweden an important operator.
  - The relevance of this study, compared to Swedish estimates, is weakened by the fact that
    the national investment programme does not specify the share of Northern Sweden.
- Investments in Northern Norway are turning from oil towards renewable energy and battery production, while oil production is still a strong foothold in the Barents Sea.
- There are significant investments discussed also in the northern regions of Russia, and the Arctic Zone tax incentive programme accelerates them.

# Summary of results

- The green transition will drive investment:
  - The role of hydrogen technology is emphasised in Norway and Sweden, carbon-neutral steel production is developed
  - Wind energy projects play an important role
  - Nuclear power and the fossil-free bioproduct plant in Kemi support the objectives.
  - Construction of the Nordic Battery Belt begins
  - Mining projects in Lapland are the lifeblood for green transition in Europe
  - In Russia, the green transition measures have not yet been clarified, target has been set

# Realising the investment potential calls for action

### Comments from the EU perspective:

- The EU Green Deal puts pressure on increasing the production of battery materials in Europe.
- A tougher EU approach to forest use, for example through taxonomy, may threaten the potential for forest sector growth.
- Traffic across the main arteries should be better considered in the EU transport policy.
- Now is the time to communicate and disseminate information about the NextGenerationEU (NGEU) funding.

# Realising the investment potential calls for action

- The availability of labour will become a major problem for the whole region.
- The development of international and cross-region transport links makes cooperation possible.
  - Need for public contribution to development of infrastructure is growing.
  - Cross-border links 8 million veichles go across Finnish borders in a normal year
- Finding business opportunities for companies cross borders.
- Clear rules and licensing processes attract investments
- Removing financial bottlenecks and getting companies to contribute with RDI have a positive impact on the realisation of projects.

# The work continues



The investment potential report should be seen as an <u>introduction to debate</u>, everyone can examine it from their own point of view. The debate is now open!

Thank you!



# **Annexes**



### 1 GENERAL INFORMATION ON THE BARENTS REGION



## The priorities of Finland's Presidency of the Barents Euro-Arctic Council 2021-2023



# SUSTAINABLE DEVELOPMENT

- Climate resilience
- Climate change adaptation and mitigation
- Food security
- Sustainable Northern Bioeconomy
- Nature-based solutions
- Health innovations
- Cooperation in the fight against pandemics and communicable diseases
- Sustainable tourism
- Promotion of SME activities
- A carbon-neutral circular economy
- Sustainable waste management system
- Prevention of pollution
- Digitalisation
- Biodiversity



# PEOPLE-TO-PEOPLE CONTACTS

- Strengthening the exchange of information between countries, regions and people.
- Closer cooperation between key actors, entrepreneurs, students and researchers.
- An interactive digital platform to support young people's engagement in the Barents region
- Support for culture and arts to make the region more attractive.
- Ensuring the engagement of indigenous peoples
- Further development of cross-border cooperation.
- Barents project fund (BFM) available at the beginning of 2022
- Resumption of rescue cooperation
- Cooperation in the fight against forest fires



# TRANSPORT AND LOGISTICS

- The overall aim is to strengthen regional cooperation in transport and logistics
- Digitalisation
- Development of corridors
- Climate-friendly transport including alternative fuels
- Supporting local communities, businesses and industry in the transition
- Recommendations of the Joint Barents Transport Plan (JBTP) as the basis for the development of transport and logistics,

### 1 GENERAL INFORMATION ABOUT THE BARENTS REGION



### Cooperation and coordination of investments in the region, including in sectors

#### PRACTICAL COOPERATION IN THE REGION

Practical cooperation in sectoral working groups. Some of these are intergovernmental, some regional and some joint.

#### **AREAS OF CO-OPERATION**

Cooperation takes place in the fields of environment and climate change, economy, energy, forest, tourism, customs, research, transport and logistics, social and health care, culture, youth and education.

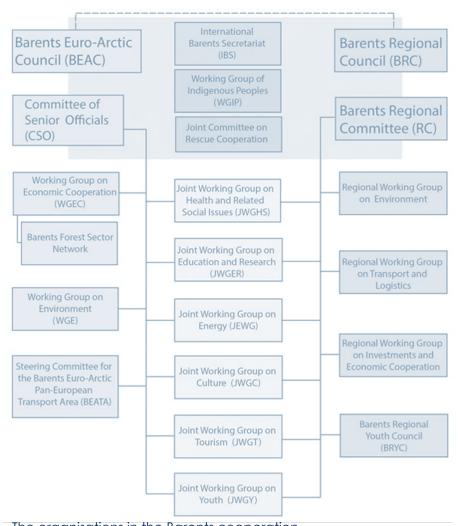
### **WORKING GROUP OF INDIGENOUS PEOPLES**

The representatives of the Sámi, Nenets and Veps participate in the work of the Barents Working Group of Indigenous Peoples (WGIP) and have a special right to attend meetings of all other working groups.

### SUPPORT FOR COOPERATION

The International Barents Secretariat (IBS) supports cooperation between countries.

BEAC will continue to finance cooperation projects in the region — the role of the regional groups is being clarified



The organisations in the Barents cooperation (Ministry for Foreign Affairs of Finland, 2021)





The report is produced as part of the Growth through cooperation project (ERDF)

