Where Gas Meets Ore: Industrial Growth in the High North

- through cross-border cooperation in the Barents region

SPOTLIGHT 1

By Arild Vollan Managing Partner, Arctic Development

4th International Conference 'Innovative and Safe Cooperation in the Barents Euro-Arctic Region' *May 23, 2014*

Karelian Research Centre of the Russian Academy of Sciences Petrozavodsk 23 May 2014: Arild Vollan/Managing Partner

THE BARENTS REGION

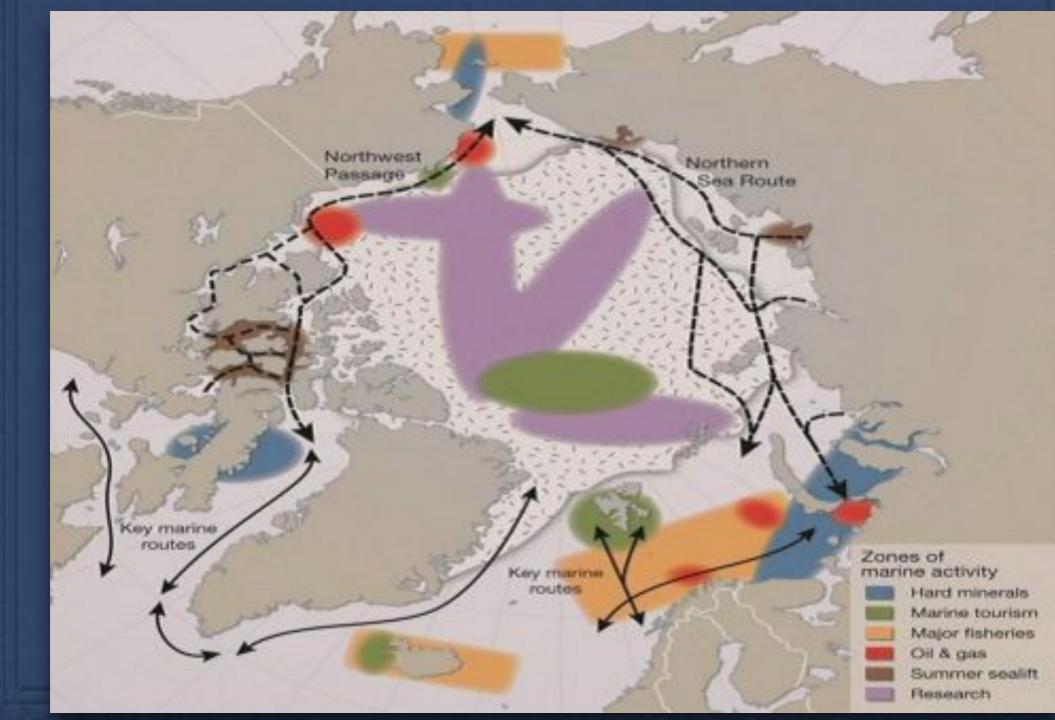
WITH A GROWING MINING INDUSTRY... AND MUCH OF THE WORLD'S OIL AND GAS RESOURCES...





ARCTIC DEVELOPMENT AS

Adapting to Change



With the ice melting, we get a new map

The New Sea Route to Asia is going in the Barents Region



The region in Europe closest to CHINA

Where gas meets minerals – a platform for industrial development

Mining in the Barents region – a growth industry producing what the world needs

· Uranium

Thorium

· Peat

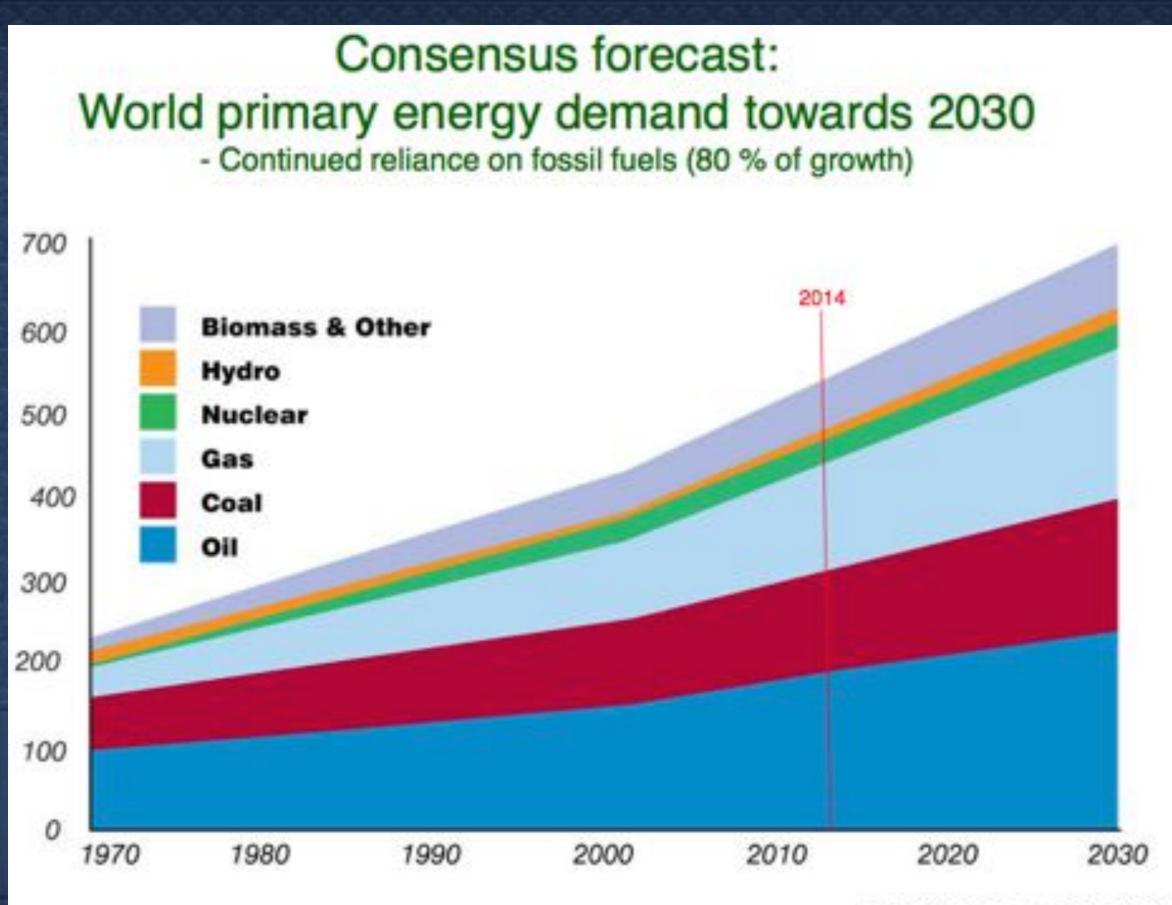
Industrial minerals for:

- Fertilizers
- Paper industry
- Chemical industry
- Glass and ceramics
- · Paint industry
- Agriculture
- Construction
- High-tech applications
- +
- Diamonds

Metals:

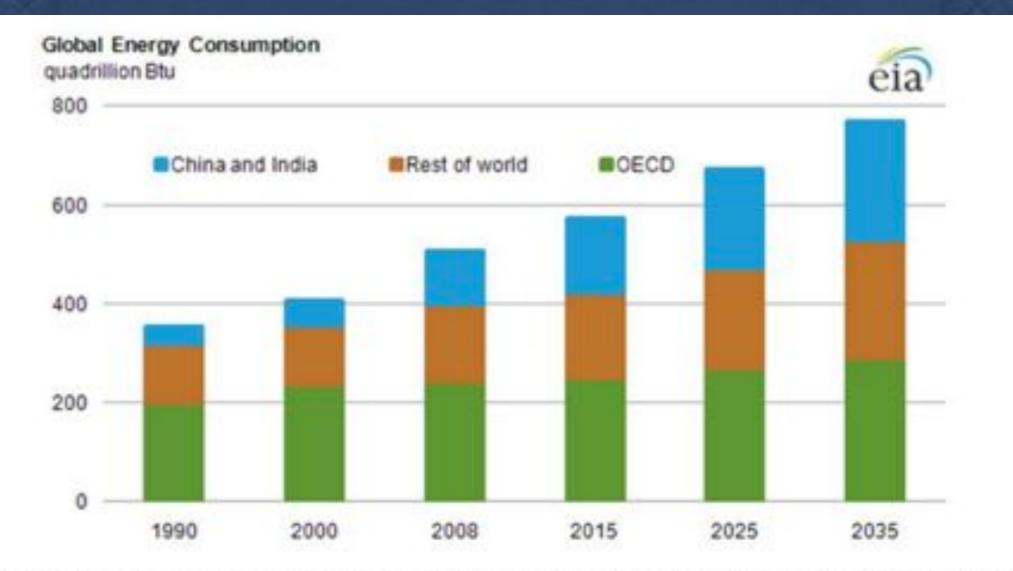
- · Gold, silver
- Nickel
- Chromium
- Platinum
- Palladium
- · Zinc, copper
- Lead
- Energy minerals: Iron
 - Molybdenum
 - Special metals Li, Nb, Be, Ta, REE

Increasing mining activity in the Barents region with good harbor conditions and railway connections for direct export of raw-materials in bulk or for processing — is an industrial platform



World Nuclear Association 2012

China and India - will account for half of global energy demand in 2035



Strong economic growth leads China and India to more than double their combined energy demand by 2035, accounting for one-half of the world's energy growth according to EIA's recently released International Energy Outlook 2011 (IEO2011). The IEO2011 projects that China and India together will consume 31% of the world's energy in 2035, up from 21% in 2008. China surpassed the United States as the world's largest energy consumer in 2009 and is the predominant driver of growing energy demand. By 2035, China's projected energy consumption is 68% higher than U.S. energy consumption. Global energy consumption grows 53% between 2008 and 2035, representing an average annual growth rate of 1.6%.

Source: EIA 2012

More Russian Gas may be devoted to Asian Markets



Russian oil and gas for Europe





limited, President Vladimir Putin said Thursday. Europe cannot stop buying Russian gas without inflicting pain on itself, and if the US tries to lower oil prices, the dollar will suffer.

economy, Sanction

RT.COM 17.4.2014: "Russia's economy largely relies on energy. In 2013 more than 50 percent of the national budget was funded by gas and oil revenues. The main revenue comes from oil, as last year, oil revenues reached \$191 billion, and gas \$28 billion."

World's largest oil and gas exporters 2011

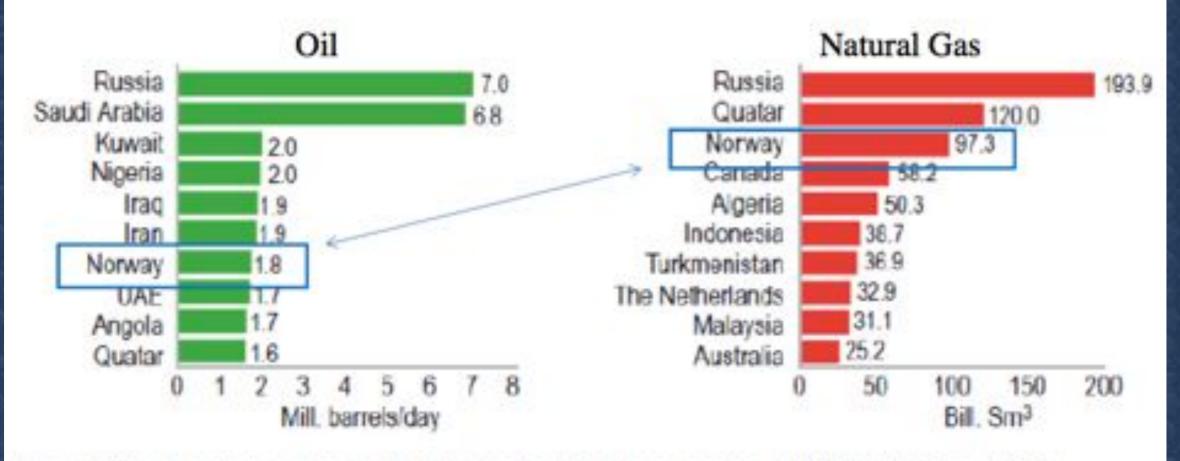
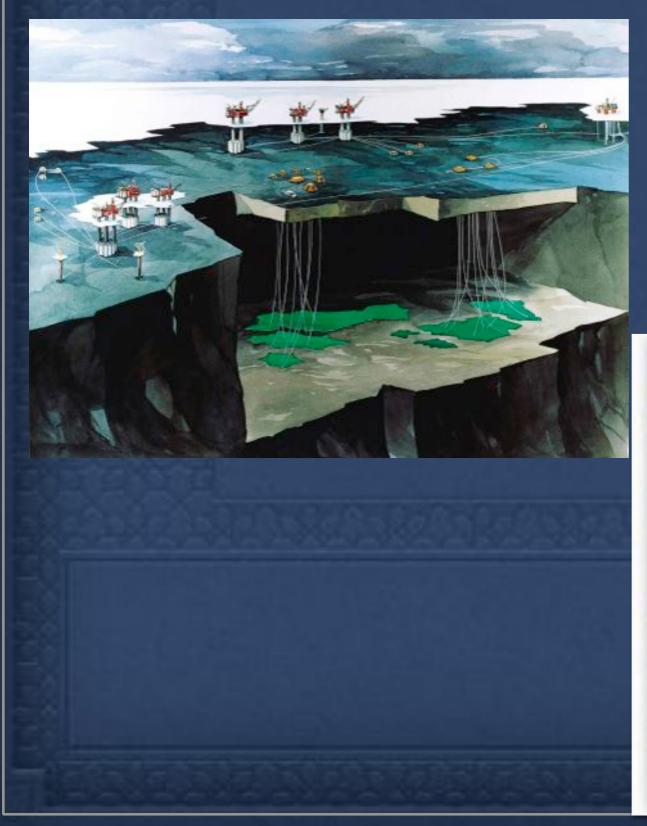


Figure 3.2 The largest oil exporters (oil includes condensate) and gas exporters in 2011 (Updated August 2013) (Source: KBC Market Services)

> OBS: Norway has a R/P-ratio < 10 years, Saudi-Arabia > 100 years

The future scenario 2030: The Barents Sea covered with subsea installations





23 May 2014: Arild Vollan/Managing Partner

Where Gas Meets Ore:

ARCTIC DEVELOPMENT

This paper was presented at the joint session of the <u>4th International</u> <u>Conference</u>:

'Innovative and Safe Cooperation in the Barents Euro-Arctic Region'

May 22-24, 2014: <u>Karelian</u> <u>Research Centre</u> of the Russian Academy of Sciences, <u>Petrozavodsk</u>, Russia.

CROSS-BORDER COOPERATION IN THE BARENTS REGION

This paper was presented at the joint session of the Cinternational Conference:

'Innovative and Safe Cooperation in the Barents Euro-Arctic Region'

May 22-24, 2014: Karelian Research Centre of the Russian Academy of Sciences, Petrosenodol, Russia.

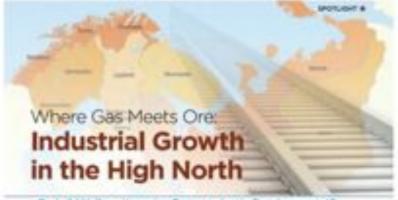
The Barents Region offers vest opportunities for people-to-people cooperation, cultural interaction, business development, industrial growth and other cross border activities. The border regions are often the least economically developed parts of a country. It is important that we promote the border not as a brawback, but rather as a temparative edvantage, which can help etimulate growth and prosperity.



Arctic Development A5 works with Russia and China. The company has a focus on industrial development in the Barents Region, and has an agreement Pechengs District Municipality, for the industrial development of Pechenga Fjord. A number of seminars / meetings are held on what is referred to in this paper. The Barents Secretariat supports this project.



Anotic Development A5 has made proposals to the Norwegian government to make the Barents region mare attractive for investments.



By Artild Vollan, Managing Partner, Arctic Development AS

The Barents region is today a booming industrial growth area. The mineral industry is expanding rapidly and a large part of the world's remaining petroleum reserves are located in the High North. This provides new opportunities in a fast growing area where gas meets ore. The Northern Sea Route reduces transportation distance between China and Western Europe by up to 40 per cent compared to sailing via the Suez Canal.

Together with increased mining activity, the development of new ports and rail links brings new industrial platforms. Most of the minerals used in industrial production are present in the Barents Region.

The landing of gas

Projections show the landing of gas in the Barents region will bring extensive regional industrial development in the region. In addition, new opportunities will arise for mineral processing.

The Barents region has oil and gas, and all the other raw materials that the world needs. This must also be reflected in the development of the region. It must be a sustainable developed industry, creating new local jobs. To achieve sustainable regional development, Russia, Finland and Norway should consider bringing in more international players. The Arctic is an area that requires international cooperation. Increased business activity in the Arctic will also contribute greatly to domestic economic development in Russia, Finland, Sweden and Norway

To achieve this, we have to create communities in the Barents region where people want to live, with new jobs, new infrastructure, and the necessary transport corridors.

"Cross-border cooperation anfolds primarily on local level between authorities and civil society groups, but has the potential to boost trust in inter-state relations and neighbourhood affairs. With cross-border cooperation we build trust on the level of the local man and woman in the border towns but also between governments and state officials" From an interview with General Secretary Rune Rafaelson in The Norwegian Barents Sekretariat. http://file.

Industrial Growth in the High North

Common interests

- Russia and Norway have the same purpose for its petroleum and mineral operations in the North:
- Safeguard national interests, creating regional development and environmentally sound activity.
- A larger part of the value chain must stay in the region (not only export "raw materials" to Europe or world-wide). This requires increased local processing and production.
- Too little has been done to involve local businesses, creating new local jobs — or to obtain regional cooperation on both sides of the border between Russia and Norway - with a common resource utilisation (in areas which is cost saving for both countries).
- Norway and Russia should seek common solutions to the infrastructure, including manpower and money. This will provide cost efficiencies and create development.

Common interests (2):

- The Norwegian continental shelf off Finnmark, get activities in more than 100 licenses, with over 30 players in 2014. On the Russian side: Activities with 2-3 licenses over the next 10 years.
- A consequence of this imbalance, is that licenses right up to the formerly disputed delimitation line between Norway and Russia should be lifted high on the political agenda

 together with a strengthened business cooperation between Norway and Russia.
- It's also in Norway's interest to establish a qualified supply industry in Russia. This will provide common advantages and cost-effective solutions, — and ensuring offshore activity promotes development in many areas on both sides of the border.

An economic zone is important for the development of sustainable local industry in the Barents region

The Barents Sea: An area of international energy cooperation

Goliat

Lukoi

ENI

Statos

Exactor

Vovate

000

Shiel

Gazprom

Rosnett

Sussessmething (Johan Castberg)

RN Nordic OII AS

Establish Pechenga International Trade and Logistics Park.

Development of a «Pomor Zone», an economic zone for broader cooperation in the border area.

Pechenga can become "the most effective place to declare the goods into Russia.»

The Barens Region will become a theatre of industry

From Hammerfest and Vardø in the west, towards **Kirkenes and Pechenga**, with Murmansk and Arkhangelsk in the east... and Karelia with Petrozavodsk...

Strategically located **Pechenga** will be an important industrial hub for the further industrial development of the Barents Region.

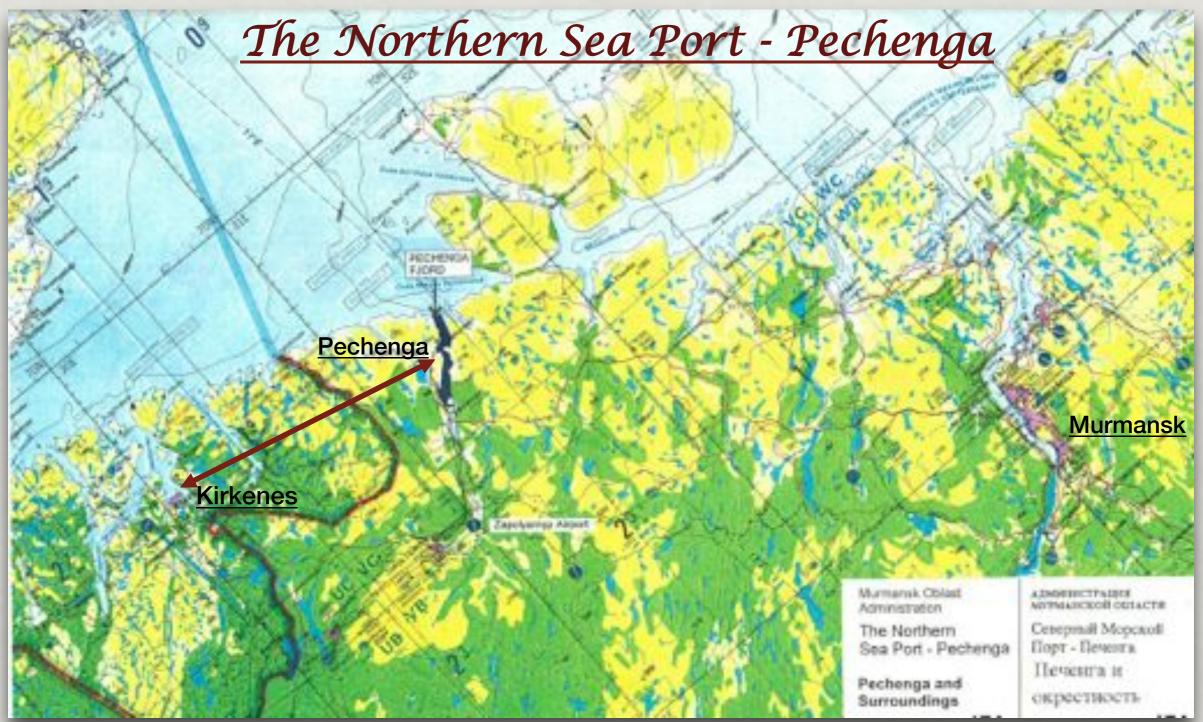
The Barents region is larger than Germany, France, Spain and Portugal combined.





Source of illustration: http://www.transborderstudio.com

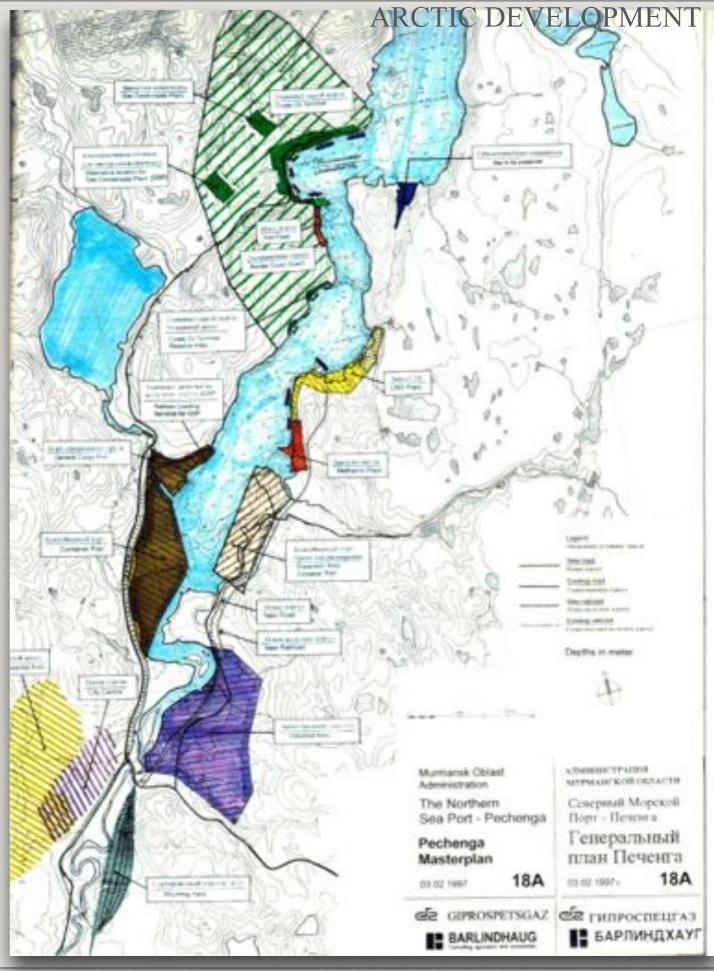
Pechenga Fjord ...with all its opportunities



The Masterplan Pechenga Fjord assess/evaluate various industrial activities

*With Cross Border Logistical chains and joint Infrastructure as preconditions for effective resource development in the Barents region

A TWIN PORT between Pechenga and Kirkenes is an infrastructure project that is now being examined carefully

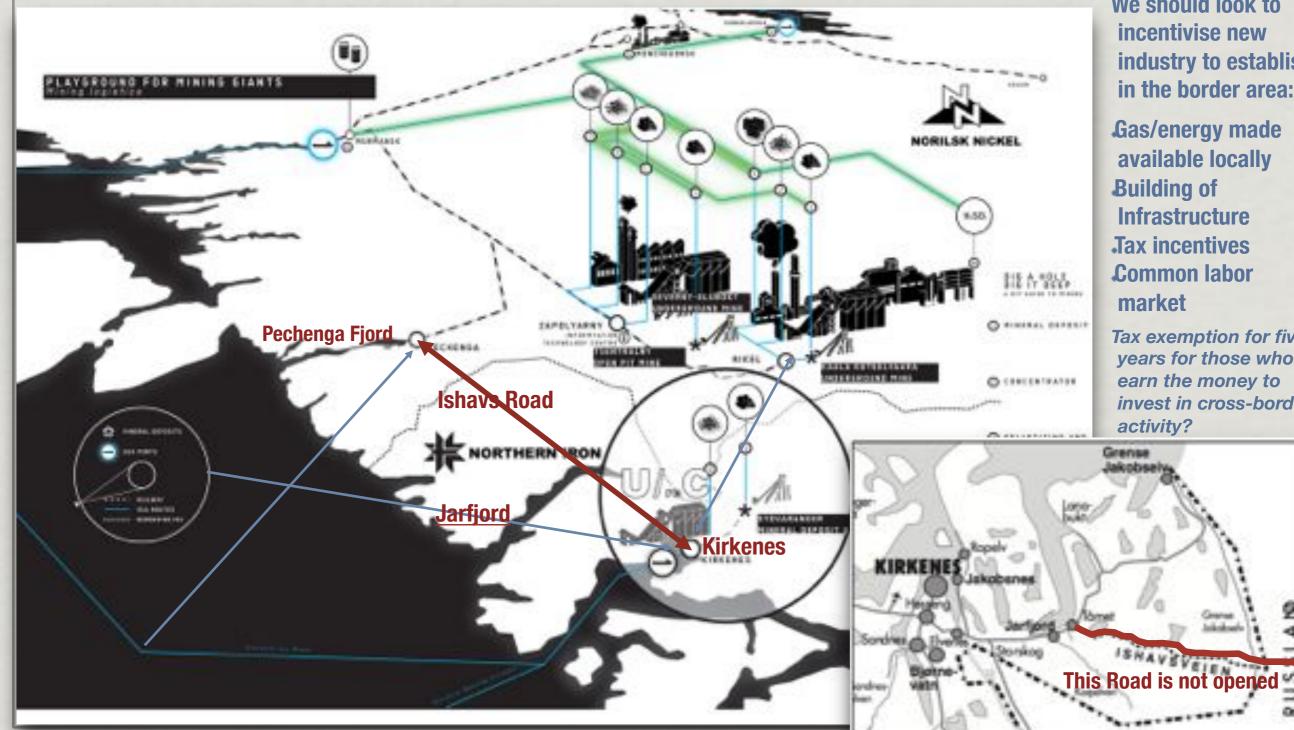


The new meeting point for international cooperation

- Excellent maritime condition in the Pechenga Fjord for various types of vessels
- Large land areas available for industrial development
- Ample spacing between the different industrial developments
- Existing Road and railway connections
- Nearby airport for large cargo planes
- Very small number of people living within the fjord
- Close proximity to both Norway and Finland
- Ideal area for a new economic trade zone accommodating three countries: Russia, Finland and Norway

From the Pre-Feasibility Study: The Norther Seaport - Pechenga

ARCTIC DEVELOPMENT Already important for mining giants

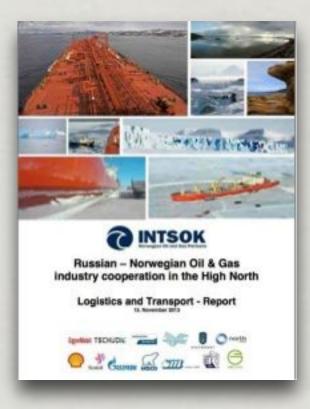


We should look to incentivise new industry to establish in the border area:

Gas/energy made available locally Infrastructure **Tax incentives Common labor**

Tax exemption for five years for those who earn the monev to invest in cross-border

The Recommendation from The Russian – Norwegian Barents Project (RU-NO INTSOK) 15 Nov 2013:



«In the North West Russia the most adequate port for industrial activities related to oil and gas terminals is Liinkhamari in the Pechenga Fjord. Both in the government, among the investors and within Russian shipping companies, evaluations and processes are in progress in order to decide the future use of this port. The final decision on the use of Pechenga will have great impact on the development strategy for the port of Kirkenes, which also is a possible oil terminal for Russian crude oil. According to the Russian strategy, Russia is also considering an oil refinery with a capacity of 6 million tonnes.»

From page 45: RU-NO Barents Project, Logistics and Transport-Report, 15. November 2013

The RU-NO Barents project adds industrial weight to Norwegian – Russian energy cooperation in the wake of the maritime delimitation treaty.

22

On the basis of a Russian government decision

- In a decision of the Russian government from November 22, 1996, (N 1383) states that there shall be provided for the planning and construction of oil terminal for receiving and processing of hydrocarbons in the Pechenga Bay Kola. The project will be carried out on a commercial basis
- 9. Поддержать инициативу администрации Мурманской области по проектированию и строительству на коммерческой основе в Печенгской губе Кольского полуострова нефтяного терминала для приемки и переработки углеводородного сырья из месторождений шельфа Западной Арктики. Федеральным органам исполнительной власти оказывать администрации Мурманской области необходимую поддержку в реализации указанного проекта. (от 22 ноября 1996 г. N 1383)

A gradual development of Pechenga

Increase local trade and business in the border area (establish new projects).

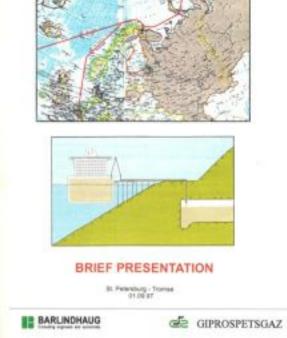
Increase export/import, with customs services at Pechenga. better utilisation of Liinakhamari, optionally in cooperation with the Port of Kirkenes.

Development of local sustainable business \div which can also work freely on the Norwegian side of the border.

Develop collaborative business models on both sides of the border — and facilitation of international companies and investors.

TWIN CITY and TWIN PORT cooperation Pechenga/Kirkenes possibly with several joint ownership structures in Pechenga and Kirkenes (also for the ports).

Introduce incentives that allow new companies establish themselves on both sides of the border (again to providing cost effective solutions on both sides of the border).

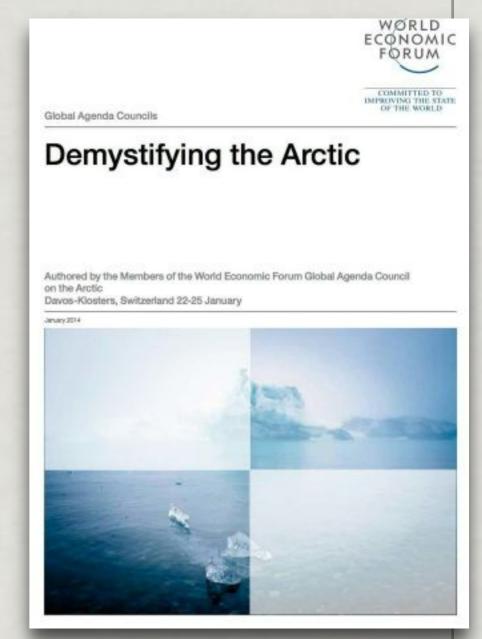


The Norther Seaport -**Pechenga**

The Pre-Feasibility Study show that the Pechenga Fjord fully satisfies the requirements. With excellent maritime conditions and hug land areas available adjacent to the shores.

Demystifying the Arctic The World Economic Forum recommend

- Facilitating cross-border cooperation and investment
- For many reasons, large industrial projects must often be "transborder" :
- A critical deficiency and area of great strategic importance is the development of infrastructure projects and logistical hubs.
- The resulting lack of Arctic investment could be overcome by establishing a cross-border financing institution.



The potential for innovation in the development of the Barents region

 The Barents regions' remote location is a major asset. It is a space outside the centres and away from consensus-driving forces.

 Perhaps can the Barents region incubate new endeavours in many areas of society and produce unexpected solutions with global relevance.



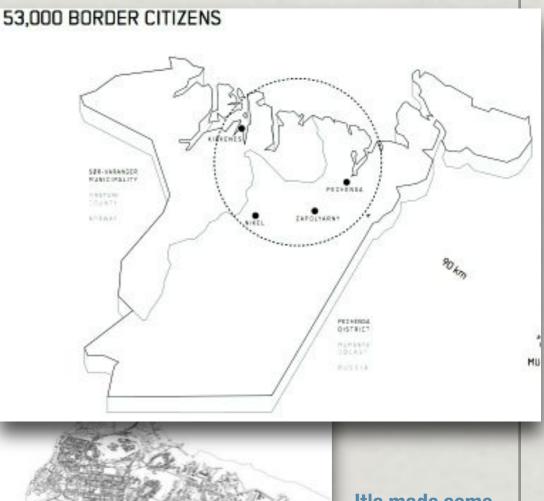
Joint Regional Challenges:

Lack of proactive planning and development of physical and administrative infrastructure such as ports, roads and railway, but equally important are the administrative processes, common rules and regulations.

The Transnational Urban Field in

Pechenga

- The importance of creating attractive local communities for people to live and work
- A new urban centre in Pechenga
- This area could be a common job market and have cross border shopping of culture, goods, education, entertainment and other services.
- With sustainable urban development and architecture based on local energy resources





It's made some thoughts on how a new urban centre in Pechenga shall be designed — by www.transborderstudio .com

Industrial activities in Pechenga with a TWIN PORT Kirkenes/Pechenga

- General Cargo Port/Container Port
- Supply base for oil and gas
- Bulk Liquid Storage Terminal
- * Gas Condensate Plant/Gas power Plant -
- Petroleum Related Industry
- Industrial Area which can also make oil platforms — develop a Gas-based industrialisation
- Railway Facilities/Cargo Air Port

Residential Area and a new City
TWIN PORT Pechenga/Kirkenes will developed local trade and increase business contact between Norway, Russia and Finland.



The illustration shows the planned Norterminal in Kirkenes.

- Based on an expected oil throughput of 10 to 21 million tons per year. (Much of this is Russian oil)
- Throughput will equate to 150 300 ship calls per year.
- Staff of 60 110 people based on operating 24/7. (Mor info, <u>Clic her</u>)
 Without a decision on the Russian side, we will get a development that allows Kirkenes to be the oil capital city in the Barents region.

Due to lack of decisions from the Russian side, it is now planned investments in Kirkenes of 3 to 4 billion NOK.

Norway need to stimulate economic activity across the border

- Arctic Development AS has suggested that the government should introduce measures that encourage businesses to invest and actively develop value creation on the border. The proposals are published in Finnmarken and the Oslo newspaper VG - 30 January 2014.
 - It should be introduced tax exemption for value creation that currently do not exist.

Tax exemption for five years for salaries or dividends, up 1.2 millions to every owner of private businesses who earn money from investing on the Russian side of the border.



Skattefrihet for næringsvirksomhet over grensa?

Det er optimisene i Finnmark. Det blir stadig lettere ä bovege seg på tvers av grenser i Barentsregionen. Dette øker potensialet for internasjonal handel og nanting.

Det er likevel for få næringsdrivende i Finnmark som satser på markedene i Finland og Nordvest-Russland. Dette har kanskje sammenheng med at de fleste virksomhetene i nord har for liten kapitalreserve til å ta risiko utenlands.

Det er bra at folk i Pechenga reiser til Kirkenes for å handle, og omvendt. Men det hadde i tillegg vart enda bedre om norske, finske og russiske tjenesteytere kunne selge oppdrag utenfor sitt hjensland.

Det er alltid risikabelt å satse på utenlandske markeder. Derfor gjelder det å utvikle tiltak som likevel gjør det attraktivt for norske bedrifter å satse utenfor hjemlandets grenser. Å stimulere frem næringsaktivitet på tvers av grenser i Barentsregionen, vil også stimulere frem den «underskoget» av virksomheter som de store selskapene som opererer internasjonalt trenger når de en gang velger å investere i Finnmark. Slike investeringer vil komme i forbindelse med utviklingen av petroleumsnæringen.

For a sette fart i næringssamarbeidet mellom norske og russiske næringsdrivende bør vi bygge videre på de gode erfaringene vi på norsk side har med individrettede tiltak i tiltakssonen. Nedskriving av studielån og lavere skatt har trukket flinke folk til Finnmark. Vi bør raskest mulig over i neste trinn av slike tiltak, som er å stimulere frem næringsaktivitet over grenser i Baremsregionen. Et slikt tiltak kan Leks, være å innføre skattefrihet i fem är for lønn eller uthytte på inntil kr 1,2 millioner til hver eier av private virksomheter som tjener inn pengene på å satse på tvers av grenser i nord. Dette er skattefrihet for verdiskaping som i dag ikke realiseres, men som vil stimulere ræringsdrivende i Finnmark til å satse aktivt og utvikle verdiskaping både mot Russland og Finland.

> Remi Strand lylkestingsrepresentant Finnmark Ap



Vardø

Remi Strand

Arild Vollan

+47-901 54 429

+47-915 98 336

WELCOME TO THE BARENTS REGION: THE NEW MEETING POINT FOR INTERNATIONAL COOPERATION