

WORLD PORT KIRKENES GROUP AS

KIRKENES - OSLO - NORWAY



KIRKENES RAILPORT

A presentation of a
project development

- PORT OF KIRKENES WITH A BROAD GAUGED RAIL LINK TO THE RUSSIAN RAILWAYS
- BARENTS PORT NETWORK
- BARENTS RAILWAYS NETWORK



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1. The Chairman's Summary

The objective of this document is to serve:

- as an introduction to the process undertaken by the World Port Kirkenes Group AS and the intentions of establishing a large port at Kirkenes, Norway with direct railways connection to the great Russian Railways Network
- as an introduction to the proposal for a partnership, the Barents Port Network between the cities of Murmansk, Arkhangelsk and Kirkenes
- as background for the planning process and the proposal of organizing the Barents Port Network and the Barents Railways Network.

A statement from the vice minister for transportation Russian Federation Government, this winter, indicates that the total port handling in Russia is increasing with 10 % this year, to a total of 300 mill tons. The Russian Railways states that in 2001 the cargo railways transported 1 billion + tons. This indicates definitive need for increase in port capacity.

A "Barents Port Network", we hope to attract the interest of the large Russian industries in need for ready shipping capacities for bulk transport. We believe that a professional port organization could enhance the possibilities of direct transport from Russia via the Barents Ports to North America. The development for shipping and railways in Europe, makes the Northerly transport corridor interesting, being to a large degree undisturbed by capacity restrictions along the seaway.

The purpose of this initiative is to promote Kirkenes as a main, ice free, port to serve the increased demand for port capacity for Russia, including services for the oil and gas explorations and production. The European project in the "Northern Maritime Corridor" is an integration possibility for the Kirkenes RailPort project. To serve shipping for the Northern Sea Route is a vital proposition for the Barents Port Network

On behalf of the board of management of World Port Kirkenes Group AS, it is my hope that this presentation will serve to make you interested in pursuing infrastructure development

within this Northerly sea -and rail corridor. We invite you to consider project planning and investment in the development of transportation infrastructure in these Northerly Waters of the World.



Kirkenes -potential port, artist view. Photo: Norconsult

Willy Østreng
Chairman of the board
Oslo / Kirkenes October 2002

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2. World Port Kirkenes Group AS (Ltd.)

It is time for the larger initiatives.

World Port Kirkenes Group AS aims to realize the more than 10 years of project proposals for large development port and railway at Kirkenes. The municipal port authorities in Kirkenes are at present extending central quays, making the port structure of Kirkenes more capable, being part of the existing initiative of the Pomor Gateway for transshipments between Arkhanglesk and Kirkenes. This would serve the need until World Port Kirkenes can realize the vision of port and railconnection.

2.1 Vision Statement

"World Port Kirkenes Group AS being a major partner in the establishment of a commercially operated, sustainable northern rail- and port network, serving the development and wellbeing of the Barents region, the Barents Sea, the Russian Federation and along the Northern Sea Route."

2.2 Project and company history

1991 – The idea of the World Port Kirkenes came to the Norwegian parliamentary member Finn Thoresen during a session at the United Nations in New York. He was joined by Anders Aune, parliamentary member from the Finnmark region. The main idea was to install port bulk operations at Kirkenes with connection to the Russian Railways to bring about barter trades between the nations of Russia and USA.

1992 – The project of a large port at Kirkenes with direct, Russian gauged, railway link to the Russian Railways Network was presented in a report by Norconsult, Norway.

1993-2000 – Several studies and research activities were made by a number of organizations, underlining the necessity of port and rail infrastructure. The INSROP research activity between Russia, Japan and Norway for the Northern Sea Route has proven a considerable platform for the further development in these northerly waters. Oil & gas exploration and production will prove to be a considerable activity for many decades.

2001 – The shareholders company World Port Kirkenes Group AS was established.

2002 – The World Port Kirkenes Group AS activities started with the working out of this present document by the assistance of the Norwegian consultancy, ErgoSensia AS, Oslo. The WPK web pages were launched at the address of www.wpk.no. The project name was given as "Kirkenes RailPort".

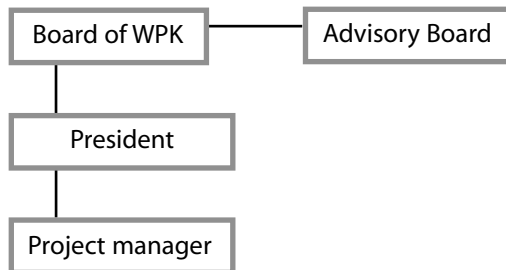


2.3 About the WPK company

The company has established a number of objectives:

- to locate partners / alliances (national and international) with parallel interests in the project and possibilities
- to propose the Kirkenes RailPort to operate in a port network with Russian ports
- to propose the Barents Railways Network
- to establish Kirkenes RailPort as a neutral trading point, especially for trading on the basis of activities along the Northern Sea Route
- the shares of the holding company of WPK is to be offered to people in the Barents areas, being part of the basic aim behind the initiative. The basic aim being the possibility of building and operating an infrastructure that can contribute to bilateral development and peaceful coexistence between the nations in the North. Equal rights of opportunities are important in the coexistence.

The company organization is at this present time, project oriented:



In a short period of time the WPK organization plans to expand the formal organization preparing for the feasibility planning, and search for partners. It is considered to establish network companies and operations company.

- Kirkenes RailPort Operating Company AS, Norway
- Barents Port Network, Norway and Russia, cooperating with the ports of Murmansk and Arkhangelsk
- Barents Railways Company AS, Norway and Russia, cooperating with Russian and Finnish Railways Companies

The chairman of the board of the WPK is Dr. Willy Østreng, director of the Fridtjof Nansen Institute at the Polhøgda, Oslo. Polhøgda was built as the home of the wellknown Arctic researcher and Russia- friend Dr. Fridtjof Nansen. Dr. Østreng managed the extensive research work of INSROP (Northern Sea Route) during the period of 1993 to 2000 (see www.fni.no)

The Advisory Board of the WPK organization consists of highly profiled leaders from Norwegian public and commercial life:

- Ms Oddrunn Pettersen, manager Barents Secretariat and former minister of the Norwegian Government and member of the Norwegian Parliament
- Mr Per Sævik, shipowner and warf-owner, and former member of the Parliament.
- Mr Torolf Rein, consultant marine technology, former Norwegian Chief of Defence.
- Mr Ola Grytten, professor in economical history at the Norwegian School of Economics and Business Administration.
- Mr Rasmus Hansson, secretary general of the World Fund for Nature, Norway.
- Mr Jan Olaf Tønnevoold, shipowner.
- Mr Sigmund Thorsell, bank manager
- Mr Ole Johan Haga, retired and former director in the Norwegian Telecommunication Administration (Telenor)

2.4 Strategic Plans for WPK Group

The following are the main points in the strategic plan of the organization:

Cooperation

The engagement of local authorities and population in Russia and Norway
 The engagement of the central governments in Russia and Norway
 The engagement of the European Union, regarding the possibility of planning funds
 To localize all interested parties working for the possibilities of concrete actions for establishing infrastructure in this part of the Barents Region. It is a main aim to establish networks for both the port and railways operations in this promising Barents area.

Lobbying

The focus on driving forces for realization of the project will be found in the central authorities in Russia and Norway, and among the local authorities and business interests in Murmansk, Arkhangelsk and Kirkenes, both the municipality and the oblast, and Finnmark County. It is at present important to localize funds for feasibility studies. WPK envisages the possibility of introducing the project at this stage, to interested private partners. This would be from shipping, industry and financial sectors.

Market

To localize the market and market driving forces for the cargo potential and the potential for industrialists making their influence on the central government. The feasibility study will include a necessary update on the market situation, including close contacts with possible Russian interests.

It is important to localize the market operators being interested in the financial operations regarding planning and implementation of the Kirkenes RailPort. These are to be found in the logistics sector, shipping and industry, and in the financial industry/construction companies.

Competence

It is the strategic objective to combine the company professional project organization to the competence of experts in the following fields:

- environment
- security for operations, bilateral activities
- shipping
- marine life and navigational technology
- finance
- infrastructure
- transportation, rail and port
- Northern Sea Route / INSROP



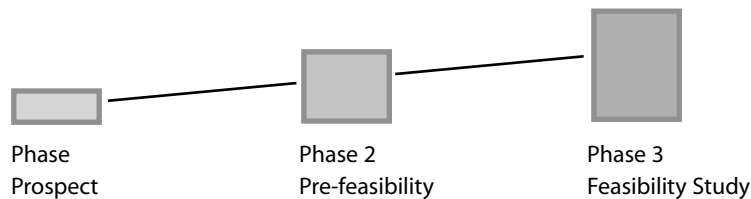
2.5 Company plans on the short and long term basis

The company plans are in the forefront – the project of port and rail link for the Barents Region, Russia and the Northern Sea Route

Activity	Time span
- the establishing of a pre-feasibility study.	6 months
- the establishing of a feasibility study (UNIDO, Norwegian and Russian regulations)	18 – 24 months
- detailed planning in all disciplines and the the implementation in 3 main stages of the port, terminals and rail link	6 – 8 years

The necessary project organization will be set up according to the need of the project – minimum staff, and focus on local organization.

The project feasibility will be concluded according to the planning process, below:



The table below shows the relevant stages – the process towards detailed plans for construction and project implementation, including planning approvals from local and central authorities, financing, operations planning.

Phases for project development	Content	Cost (NOK)
Phase 1 – Project Presentation Prospect level (this present document)	Presentation document and transparency presentation, as a prospect for applications for the next phase of the project development, including partner invitations.	Own cost entirely
Phase 2 – Pre-feasibility Study	Study along the main lines of a feasibility study. This Phase will conclude the main requirements for Phase 3 Planning. A market analysis will be a main focus for this Phase. A requirement for this Phase is to provide material for the application for grants and for forming alliances in favour of the Feasibility study. The outcome of this Phase 2 is to create a more realistic project.	1-2 million NOK + own cost
Phase 3 – Feasibility Study	A thorough study following the recommendations of the UNIDO feasibility study programme. The outcome of this Phase is to establish the platform for all necessary limitations, risks, decisions within the company, finance and government.	10-15 mill NOK + own cost

2.6 Alliances

The search for partners are ongoing, and the focus is on partners and contacts that will act jointly to see the project through.

The municipal authorities of Sør-Varanger and the administration of Finnmark County Council.

The approach to the local political authorities and administration is vital for a successful project of this character. WPK has met with the mayor for Kirkenes and the Sør-Varanger Kommune. The possibility of increase in the local employment situation should be a welcoming side of this project. The environmental impacts are of concern for the municipal authorities. This is not only limited to waste, noise and other environmental hazards. There is an important design side of this project.

Contact is established with the Finnmark County Council. The Council has access to funding for planning purposes, as the Kolarctic programme within the Interreg III programme system.

Finnmark County Council called a coordinating meeting in Kirkenes in September, and WPK Group was present together with Sør-Varanger Municipality, Barents secretariat and Kirkenes Utvikling. The chairman of Finnmark County Council, ms Evy Ann Midttun concluded the need for coordinating the efforts for realising infrastructure. The mayor of Kirkenes/Sør-Varanger, ms Linda Randal was present at the meeting. A working group of the present organizations, was established to follow up the results of the meeting.



Northern Maritime Corridor Source: SAVOS/ Interreg NorthSea





Present Quay Extension at Kirkenes
Photo: Wpk

The Barents Secretariat

The secretariat handles important cooperation projects within the Barents Region, especially within NorthWest Russia, and maintains a broad contact network of great interest. Planning funds are available.

Sydvaranger AS

The company of Sydvaranger at Bjørnevatn and Kirkenes, owns the large installations in central Kirkenes, for pellets storage and loading gear for ships at their own quays. There are several opportunities for cargo handling through Sydvaranger installations. The company owns the existing 9 km railway track from Bjørnevatn to the loading area at Kirkenes, being a possible part of a railways link to Russia.

Kirkenes Utvikling (Development)

The public authorities and the development fund of the Norwegian authorities established the Kirkenes Utvikling company to work for links with Russia and for commercial establishment in Sør-Varanger. Kirkenes Utvikling has recently been visited by large Russian industry representative looking for port capacity. Kirkenes Utvikling has been central in establishing the Pomor Gateway company.

Murmansk and Arkhangelsk Harbour Masters/Companies

The idea of establishing a "Barents Ports Network" and the operational marketing "Barents Port Company", should be pursued for a stable development for the port operations and the attraction of large volumes of cargo for rail and transshipment purposes.

Local finance and investment companies

The project will be in the need of local banking services, and it is necessary to locate a favorable bank contact at a very early stage of the project. Local investment companies are active with the aim of improving commercial activities.

Local transporters and brokers, shipping services and terminal operators

These important companies and persons are vital for the operations of the project and partners for the planning of the operations. These companies have direct access to market contacts in the Russian Federation, both in the closer areas of the Barents Region and within Central Russia. The brokers will administer shipping contacts also for the opportunities with the Northern Sea Route. In Kirkenes a consortium of service companies, have formed a joint company offering services based on the Port of Kirkenes.

Shipowners

Shipowners are important partners for both the development of the project and for operations. The shipowners would also be possible for joint ownership of the port company. The shipping companies have great knowledge of the market, and have vital contacts both with the possible cargo owners and for the international financing of the port, rail and port operations.

Railways company of Russia

The October Railways Company of St Petersburg operates the Russian railways in the Barents Region, and is an important partner for the construction and operations of the railway to Kirkenes. World Port Kirkenes Group proposes to form a new railways company for the purpose, the Barents Railways Company, and this should be in joint ownership by the October Railways and the World Port Kirkenes, and other interested parties. It should be considered to invite the Finnish rail operator to join the company.

It is known that the international railways union are working on a programme for northerly railways connection, and we envisage that the Kirkenes connection should be of interest. (UIC - see www.uic.asso.fr)

Financial operators

As soon as the prefeasibility project is launched – the search for financial partners must start. It is possible that shipowners, shipping companies and the construction companies for rail and port, are interesting partners for finance. It should be investigated whether this project could take the principle of public and private partnership. It should be conducted a search for possible interest within the larger Russian industries, participating in a finance consortium.

Industries and other large users

The large transportusers, especially the Russian industries, have to be contacted to investigate the possibility of a joint ownership. There is also the possibility that industrial entities purchase certain parts of the project for own needs, as well as capacity at the railways and rolling stock. The example is from the planned container port at Novorossyisk where the large Russian metallurgy company of Severstal have obtained ca 70 % of the stock of the unbuilt terminal through its subsidiary, Severstaltrans. The company also own major volumes of shares at the port of St Petersburg. There exist great volumes of minerals, pellets, coal and other bulkcargo for the export market.

Lobby

The World Port Kirkenes need to be in contact with the national authorities in Russia and Norway, and the main task is to make an influence on the authorities regarding the establishment of the port and rail link.

Professional cooperation

During the working out of this report, WPK has had constructive contacts with the consultancy of Storvik & Co at Kirkenes and Oslo.

2.7 "What's in it" for the Barents Port Network

It is critical to establish the Arkhangelsk – Murmansk –Kirkenes, Barents Port Network partnership. Main points for this cooperation, to be discussed with the possible Russian partners, as soon as possible:

1. To establish a joint company, Russian – Norwegian, to promote a common business platform for the three main ports in this Norwegian/ Russian sphere in the Barents area. This should be the planning and marketing company for a stronger future for the Barents Region and in particular the port businesses
2. To work for a change in transport flows from the great Russian industries – turn north for transshipment. This should lead to increase in cargo volumes from the central and southerly parts of Russia
3. To work for necessary investments for upgrading of port installations. To make a programme of necessary upgrades, and a plan for implementation.
4. To work for a common approach to business with the Norwegian gas field "Snow White" of the Finnmark coast
5. To work for the establishment of oil and gas service bases for the exploitation of the Russian oil/gasfields in the Barents Region, Barents Sea and Kara Sea
6. To work for a common approach for the advancement of the exploitation of the potential of the Northern Sea Route
7. To exploit the possibility of obtaining project support through the nationals and EU programme system, The Northern Maritime Corridor.
8. To work together with the mining industry at Kola for the acquisition of new markets for the vast quantity of minerals from this region, as part of the process for financing the future investments in the mining industry
9. To exploit the possibility of food stuff exports from the abundance of berries, herbs, mushrooms in the Kola region
10. To work for a future seagoing tourist trade in the Barents Region and Northern Sea Route

These are 10 interesting points in which we hope to be a starting point for discussions between the three parties. We intend to invite Murmansk and Arkhangelsk Harbour Masters / Companies and municipal authorities for initial talks on this matter of cooperation.



3. Concept for the development of Kirkenes RailPort

The project of Kirkenes RailPort is based upon a strategy of phased development. It is within this concept included other service- and transportactivities in the port of Kirkenes, and which we anticipate will co-locate to the new port system.

The existing activities for transshipment at Kirkenes are supplementary activities for the Russian fisheries and other minor activities. Kirkenes was involved as a supplementary port in the Russian salvation process of the "Kursk" submarine. It is a possibility that Kirkenes RailPort could obtain a similar support service activity regarding the exploitation of oil and gas resources in the Barents Sea and Kara Sea and other Russian locations.

The proposed partnership between Murmansk, Arkhangelsk and Kirkenes should market the possibilities of the port network on the Barents and Russian markets, as well as on the international market. The concept for the development and activity implementation for the Barents Port Network has to be developed in cooperation with the Harbour Masters, and with the companies already at work for transport activities. An example is the Pomor Gateway working for transshipment, with the commercial port of Arkhangelsk.

3.1 Recent studies regarding Kirkenes Rail Link and Port

Connection between Kirkenes Large Bulk Carrier Port and the Russian Railways Network. Sintef group 1996.

Kirkenes with its present port capacity of handling capesize vessels up to 150.000 tons and more, would induce transportation cost reductions for ores and minerals from Kola. The study gave 4 mill tons of mining export pr year as economical feasible for investments in the rail link between Kirkenes and Nikel. The cost of the 40 km rail link was estimated to USD 181 mill.



Municipal Plan for alternative Port locations -Kirkenes

Sør-Varanger Municipal authorities

conducted in 1996 a landuse study for large port installations in and around Kirkenes. The report concluded on 8 different locations. The main locations have all the potential to develop into a large port, but only a few have the potential area reserves for large numbers of containers. The professional consultancy behind the study was the Tromsø based engineering company of Barlindhaug AS.

October Railways, operating company for the Russian Railway in NW Russia. 1999

The study concluded that with the mineral export from Nikel to Kirkenes of 3 mill tons pr year, a Nikel-Kirkenes rail link would come out as economic feasible. The transportation would give the need for 6 unit trains pr day with a total daily load of 2.500 tons over 25-30 waggons – 5 days a week in 46 weeks of the year.

Finnmark County Council/ Storvik & Co 2000. Study on communications in the Barents

Containerization is on the increase. This would lead to a change in sea transport routing. Container capacity is a key element for Kirkenes future portoperations.

Several large companies have shown interest for Kirkenes as a container port:

- Norsk Hydro
- Elkem
- Linjegods Transport
- Russian steel producers Severstal
- October Railways Company
- Statoil
- Shell
- Russian oilcompanies
- Samskip, Island
- CTG Deepfreeze
- UK timber merchant

This project proposed a railways link between Kirkenes and Zapoljarnij. Bulk rail transportation is in this study estimated to 8 mill tons/year. The railway cost was here calculated to 202 mill USD using a Norwegian price levels, and with high grade standards for speed and curvature. The railstudy was carried out by the consultancy Fjellanger Widerøe AS.

The Norwegian Government National Transportation Plan of 2000.

The plan states the need for the development of Kirkenes as a gateway for transportation for Russia.

3.2 Phased implementation

Preparatory Phase for Planning- and Decisionmaking Process
The preparatory phase consist of the following activities:

- Organization Buildup
- Prefeasibility Study
- Feasibility Study
- Planning Decision
- Finance Decision

Phase 1 Implementation of Kirkenes RailPort from 0 – 4 years upon decesion

Transport activity is from port to terminal in Russia by road. The terminals are at Nikel and Zapoljarnij. In addition the potential of direct road transport to Murmansk, and other locations in Northwest Russia. The customs clearance is at Storskog or at the terminals.



Kirkenes Central Quay Photo: Kirkenes Gateway/ Erling Storvik

Kirkenes Utvikling and associates have established the Pomor Gateway company for shipping between the port of Arkhangelsk and the port of Kirkenes, for transshipment purposes. It is planned to start pilot operations in spring 2003.

Construction activities in this phase is proposed as:

- new entrance road for Kirkenes from the border
- terminals for the Russian Railways at Nikel and/or Zapoljarnij to be opened
- planning and construction of railway link to the port of Kirkenes, and possibly using the existing railway from Bjørnevatn, with port of Kirkenes.

The rail link is in this Phase planned for a station at the central Kirkenes existing port. It is anticipated that the planning and decision making process for the new port location and design will be made during this Phase, and this include the planning of the rail link with direct access to the new port.



In this stage of operations, the traditional bulk market will occupy the port capacity, being minerals, timber, fish, steel. We should see an initial start in transshipment from the Northern Sea Route. Container-transportation is interesting to promote at this stage. Containers are on the increase. The services for ship repairs will still be located to the center of Kirkenes.

We should see an extension of the freezer capacity at the port for food transshipments. We should further see results from the cooperation in the Barents Port Network.

The port will be a freeport according to the Norwegian and international regulations. This gives room for flexible customs handling/transit, and it is possible to start some lighter production facilities in conjunction with the stored cargo.

Phase 2 Implementation of Kirkenes RailPort 4- 6 years:

The rail link should be completed, and the transport activities for port transit are mainly moved to the rail link, in this phase. Stage 1 of the new port construction is in place, and the rail link is in operation. The use of the existing central port facilities at Kirkenes is decreasing during this phase, and the transshipments is started being moved for the operations at the new port. The terminals at Nikel and Zapoljarnij are being redesigned for new activities.

This stage for port logistics is for bulk and for containers transportation. The transshipments from the Northern Sea Route should be on the increase.

Ship repair and warf services should be on the increase, and the possibility for a move of activities to the new port.

It is anticipated that parts of the new port will be constructed on a direct commission from larger Russian industries, and these parts should be operational in this stage of implementation.

Phase 3 Implementation of Kirkenes RailPort 6- 8 years:

The stage 2 of the port construction is in place. This third stage in the port development has focus on larger storage areas for containers.

At this stage of operations we should see a number of new products and activities for the port handling. It is anticipated that the Russian mining industry has gained new mining facilities

with considerable potential outputs through this period. A situation for increase in import for the Russian market, should be prepared. This would improve the logistics balance.

The next stages in the port development will be decided upon, using information from market updates, competition scenarios, shipping interest and other important parameters.



*Kirkenes with the Sydvaranger site, at the centre of the picture.
Photo: Fjellanger Widerøe*

3.3 Port development

The Kirkenes Municipal planning authorities and Port authorities has conducted a landuse study for the establishment of a large port in Kirkenes, and in the close vicinities of the town. (see map at page 12)

There are vital parameters that must be taken into account especially for a location study at these far north waters:

- the environmental hazards of both construction and operations to be minimized
 - the possible reserve areas at the actual site of the port – must be of considerable size
 - the location in respect of the living areas of the town, due to noise and artificial illumination.
- The influence of artificial lights are to be considered for the winter dark period. Summer and winter have rather different characteristics at the northern latitude.



Kirkenes Central Quay -Increased freezer capacity Photo: Wpk

- the navigational possibility for quay operation, anchorage, turning space for large vessels, and the safe landing of the cargo. Some of the areas in the location study have rather narrow turning space, and some has impractical anchorage. There is no problem with depth for deepgoing vessels.
- the ice conditions at the wintertime. Although, the ocean is ice free, some of the areas in the location study have ice problems during wintertime. The seafront of least ice problems should come out favorable.

The planning part of the port and rail location are governed by a set of laws and regulations. Among the more important are:

- coastal regulations regarding navigation
- coastal impact guidelines for port establishment
- military regulations for international shipping entering the ports
- planning and building regulations, impact analysis, giving all sides of location, environment and decisions for the regulation of the landuse, obligations for design criteria, leisure areas, archeology, farming, and so on
- concession for the landuse
- building permits for terminals,..

The Norwegian Department of Fisheries is responsible for port and seaways regulation in Norway, and the planning process is to follow the regulations as set out by the department. Statistics from the Harbour Master of Kirkenes 2001, shows that Russian portcalls at Kirkenes counted 475 calls. Second after Norwegian calls being 700 in 2001.



3.3.1 Port establishment

The experience of other port projects should come in as vital information for the planning. We have obtained a principal project schedule from a contact with the mayor Svein Gjelseth of Herøy, Western Norway.

The schedule according to the project :

Establish all necessary, local contacts and contacts with potential main users



Establish the feasibility plan with all necessary maps and illustrations. It is necessary to use some resources on the illustrations, example through digitally constructed pictures. Much easier to convince parties involved using that technique



Establish the link to the County Council' planning documents, especially port plan. There might be a regional plan for port development, and the national plan for port locations.



Establish the link to the government, as the Department of Regional Affaires and the Department of Fisheries. These departments have funds for port constructions. The funds are available for infrastructure as roads, water, electricity supply, telecommunications, quays, preparation on the seaside.



The municipal authorities may have the access and ownership of the location, and will conduct the necessary planning system according to the building and landuse regulations. The private initiative could conduct the actual planning process in close cooperation with the municipal authorities. The process of building permits is conducted by the municipal authorities.

3.3.2 Efficient logistics – Port and rail operations

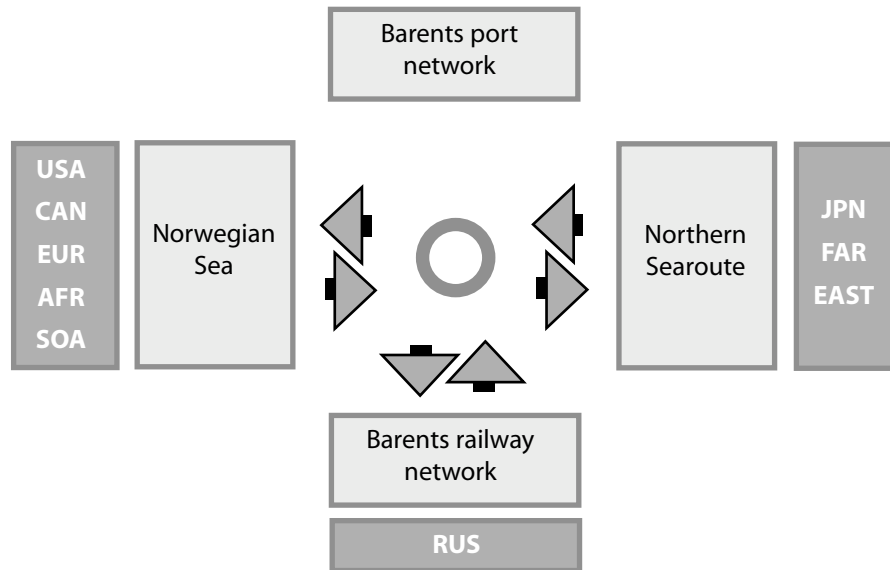
The port and rail terminals are to be planned and constructed with all necessary considerations for modern and efficient operations. The operations company, including potential terminal operators, will take part in the planning.

The overall concept for this transportation infrastructure is the principle of "simple logistics"

- from the transport originator – to the railways – direct in port and onboard -
- from ship to ship (sts) is also an important logistics process

The rail principle is especially useful in Russia, and when we have a direct Russian gauged rail link to Kirkenes, we have very few obstacles. The efficient operations of the railways and the port, gives a positive potential for competitive tariffs for the use of the railway and the port.

The principle below, indicates the vast potential for the Barents Port cooperation.



Idea by WPK

The most efficient logistics is to take the cargo on the rails, the shortest distance on the rail, and straight onboard for overseas transportation. The aspect of distance is an important, planning parameter. For certain transport relations, example from the Ural region, where some large industries are located, it is about the same distance to the Northerly ports as to St.Petersburg, or the Baltic states. The purpose of Barents Port Network must be to promote the Northerly ports for these industries, and to shift the cargo transport patterns northwards. Interesting industries are located to Karelen, and being very close to a port at Kirkenes/ Barents Port Network.

For some transport relations, even to Taiwan, it is possible to use the Northerly ports for trans shipment, rather than using the long rail link for Vladivostok and trans shipment for the shipping link. This is connected to the present high level tariffs of the railways. It is believed that the railway tariffs in Russia, will be on a steady increase.

The advancement of digital electronic positioning systems, logistics programming and electronic communications, will be of great help for the establishment of the port operations. The use of modern ICT is a key parameter for a successful port operations.

The idea of promoting the Northern Sea Route for extensive transportation, is one of the principle ideas behind this initiative.

The location of the ports in the Barents Port Network, is favourable for straight shipping routes to all continents. Europe, North- and South-America, Africa and Asia also for routes through the Northern Sea Route. We see the possibility for regular shipping routes from Kirkenes for main ports on the other continents.



3.4 Northern Sea Route

The Arctic map locates the Northern Sea Route, being a cornerstone for the initiative of the World Port Kirkenes Group – The climatic changes in the world may already have made its influence on the ice formations. The probability is within the lifespan of a port installation at Kirkenes, Murmansk and Arkhangelsk, the ice front will have moved so as to leave the Northern Sea Route open for several months of the year – without the need of assistance from the seagoing icebreakers. The seagoing icebreakers will assist to keep the Route open for even a longer period of time, each year.

The logistics of the shipping is and will be special in any circumstances, even on a long term basis. The vessels are to be specially designed with double strengthened hulls. The vessels will be used for transshipment for cargo, oil, (possibly LNG) and other commodities that spring from the Sea Route and the areas of the Western Siberia. The natural ports for transshipment for Europe, Americas, Africa and other portlocation is within the Barents Port Network. Especially Murmansk and Kirkenes should shape the services for this shipping. The Russian icebreaker fleet is located to Murmansk, and being important part of a prolongation of safe navigation of the Northern Sea Route.

The important research cooperation between Russia, Japan and Norway for the exploitation of all sides of the Northern Sea Route, the INSROP research, has conducted a vast and diversified number of studies. The studies regarding:

- navigation
- ice formation
- oil/gas availability
- communities development

all shows the interesting potential for the Sea Route and the regions along the Siberian coast. It is anticipated that the openness of the waters for free navigation will expand as time goes. The Russian authorities have a close observation on the Route, and there is some judicial matters to be worked out for the "right of way" of using the Northern Sea Route.

The German marine research institution of Hamburg Ship Model Basin has calculated positive results in economic terms for the shipping using the NSR, and these studies (within the INSROP Symposium in Tokyo, 1996) should be brought up to date with new knowledge on the Arctic situation.



Source: Kirkenes Utvikling

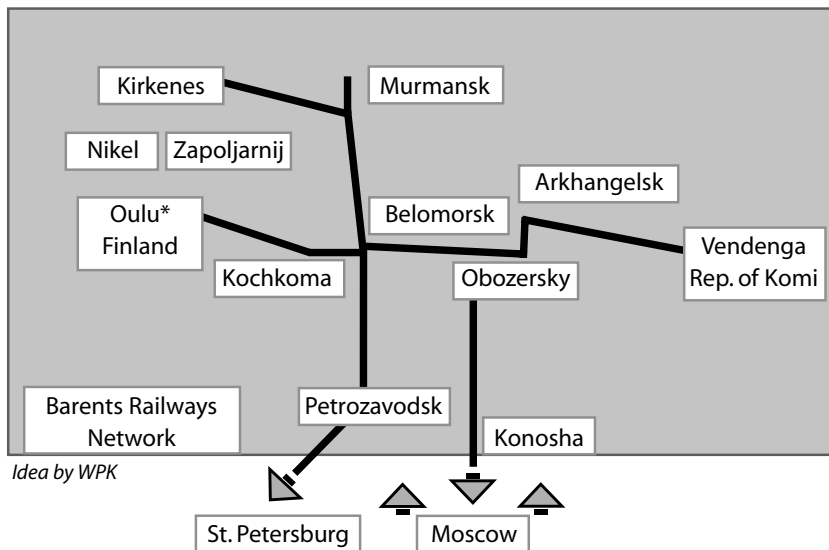
Studies on the potential of shipping along the NSR gives the potential of radically shorter times for transport between Europe and the Far East. Transporting between the continents can be shortened up 10-12 days at sea. The potential of ship to ship transfer of oilcargo at Kirkenes is important for environmental issues. The Russian oilcompany, Lukoil, has built a number of 20.000 tdw oiltankers, with ice-strengthened hulls for transport from the Russian oilfields, and transshipments.

3.5 Barents Railways Network – link for Kirkenes Port

Barents Railways Company Ltd is to be organized by the World Port Kirkenes company, and all interested and relevant parties are to be invited to join the company. The initial aim of the company is together with the Russian operating company – The October Railways Company – to plan, finance and construct the rail link between the Russian Railways Network and the city of Kirkenes. The distance to cover is 40 – 45 km (depending on alternative) of rail construction for Kirkenes to be linked up to the world's largest railways network.

Barents Railways Company has the further aim to promote rail to sea transportation in the Barents Region. The railway system consists of the railways network in Russia, Finland and Norway. The following corridors are to be promoted:

- From Komi to Arkhangelsk to the province of Oulu in Finland – "The Arkhangelsk corridor"
- From the Kola and the south to Murmansk
- From Kola, and the south and east to Kirkenes



The missing links for the Arkhangelsk corridor are under construction, and the Kirkenes link need to be started to fulfill the idea of the Barents Railways Network.

The construction of the railway link for Kirkenes is to be organized as an international contract, and we foresee that the Russian railways experience should take the task of constructing the railways all the way to the port of Kirkenes. The railways are to be constructed in several phases, where the first phase will:

- be built according to Russian construction costs and with Russian gauge
- be built with highest level of security and environmental considerations
- be built with minimum requirements for speed, tunneling and curvatures to keep the costs down
- be built with maximum terrain considerations

The railway should be planned for later on upgrades for higher speed. The construction costs should prove to be considerable lower than projects so far presented for the Kirkenes – Nikel connection.



Main Russian Railway Network Source: Storvik & Co



4. Market development and Market analysis

We foresee that within a 5-year period, the considerable growth in demands for rail and sea related transportation to and from Russia, will reach such interesting levels for a new port concept for the Northerly areas, to pave its way.

This is emphasized with the following statement:

The economy of Russia is expanding, and several indicating factors can prove this fact. The RF Viceminister of Transport mr. Izmailov made a statement in February 2002 on the potential rise in tonnage over the Russian seaports. According to the Russian Federation Ministry of Transport Rosmorfloat service, the Russian seaports are expected to increase their total cargo turnover by 10 % up to 300 mill tons. This is due to the economic revival, visible in the production growth of more than 5 % in 2001.

Increase in demand for transportation is closely linked to the growth of the national product.

It is suggested two main principles for the development of the Barents Port Network – planned and coordinated action to make a foreseeable statistics for the potential:

1. To update the statistics for the market situation through a prefeasibility study
2. To use the gained knowledge to launch an intensive marketing mission to "acquire" transport intentional contracts from the important Russian industries of bulk commodities.

4.1 Market Development for the Barents Rail and PortNetwork

The potential of exports from Kola Peninsula – NorthWest Russia - Komi

The report from the Barents Euro-Arctic Council – Economic Geography and Structure of the Russian part of the Barents Region (Finn Barents Group, 1995, 1999) states valuable information on the available resources in the Russian Barents. These are in the large picture:

- Mineral resources
- Timber resources
- Oil/gas resources
- Fisheries
- Food resources as berries, mushrooms

There is in addition, a volume of products connected to these raw materials sources. The further development and refinancing of the mining operations in northern Russia are for a large degree dependent on export to overseas markets. There is a need to open new markets.

- Oil and gas. As much as 70 % of Russian oil and gas reserves are located to the Western – Siberia. Kirkenes as a base for services, spare parts is a potential. The main base will be set up in NorthWest Russia, but supplementary services are a potential for Kirkenes RailPort.

According to a recent official statement, Murmansk will form a strategic transport infrastructure for North of Russia, oil and gas. There are several oil/gas fields either in the establishing phase or in the planning phase. In particular the large Stockmannskaya gasfield, situated midway between Novaya Zemlja and Kirkenes. This is among the largest gasfields in the world.

- Forestry. As much as 10 % of Russian forestry is located to the region. There is a surplus of timber in the Russian forests. Markets in Western Europe will gain from a rail transport from the forest areas, and transshipped via Kirkenes.

- Fishery. The fishery industry is dependent on freezer storage, and quick turnaround at port. Kirkenes has started the build up of a freezer storage capacity, and has a proven record of quick handling of fishing vessels. This build up has been done in respect of the market interest. Russian fishing vessels are calling on Kirkenes Harbour in an interesting number. It is a fact that the rates for using the harbour is favorable, and the same goes for the level of service regards to quality and time taken for procedures.

There are concentrates as nefelin and kyanite for aluminium oxides, on the list of potential resources. Furthermore in the northwest of Kola there are interesting resources as copper, nickel and platinum. The geology of the Kola region shows the possibility of certain rare iron ore resources. There is a potential for economic operations with these resources. An example is test drilling for chromite mining, at the south of the mining town of Apatity.

The Kola Peninsula is the most important mineral resource of the Russian Federation. In total, over 700 minerals are accounted for – more than 1/4 of all known minerals in the world. Kola contains major reserves of minerals and elements as phosphorus, iron, copper, nickel, cobalt, sulphur, aluminium, titanium, vanadium, sodium, potassium, zirconium, niobium, tantalus and other minerals in shorter supply.

It is anticipated that within the next 10 years, the Russian mining industry will need considerable investments. It is necessary for the industry to open new markets in order to support the investments. A logistics system, resting on an export harbour at Kirkenes and the Barents Port Network could prove important for the prolonged operations of the mining industry.

Komi Republic

Within the Timan-Pechora region, the Komi Republic is in particular interesting for further economical development. This republic is rich in oil, and in other types of resources, making it a vital addition for the possibilities at Kola. The republic of Komi is situated east of Arkhangelsk Oblast, and is being linked with the Barents Region from this year.



Figure on some basic mineral resources at the Kola Peninsula

Type of mineral	Inferred resources Millions of tons	Proven resources Millions of tons
Apatite ores	11.000	687
Iron ores	3.100	1.600
Aluminium ores - kyanite	10.000	1.700
Micas	52	24
Feldspar	80	21

Figure Estimated oil and gas reserves at the Timan-Pechora region (Komi)

Area	Oil in place Mill tons	Oil/recoverable Mill tons	Natural gas Billion m3
Arkhangelsk oblast/ Nenets Okrug	2.450	840	459
Komi Republic	2.380	567	174
Total	4.830	1.407	633

4.2 The potential of exports from other regions of Russia

Parts of the Russian economical viable sectors, as the heavy mining and metallurgical industries, steel production, are in need of exports. There is a tendency of railtransport from central areas, to turn northwards for harbour connections in St.Petersburg/Finland. These are industries that traditionally used the transportationsystem via Moscow. The potential for transports over the ports at Arkhangelsk, Murmansk and Kirkenes, should be marketed

towards these industrial areas. Relatively small parts of these cargo lines would make the rail and port development of Kirkenes, economically feasible.

It is within the scope of this market activity to seek and involve the project consortium for high level contacts with Russian Industries for long term contracts for transport/shipment. It is possible for the larger industries to make their own investments within the infrastructure projects, rail and port, at Kirkenes RailPort.



Oil and gas deposits Barents area Source: Finn Barents

The transport capacity of the Russian Railways going north towards Murmansk is not fully utilized. The railway between St Petersburg and Murmansk is undergoing technical upgrading. Some upgrading measures is already finished, and at the time it is apparent that the railways system is operated below full capacity. Thus, room for increased tonnage on the railway.

The interesting logistics for this project is the ability of taking the bulk cargo from the factories, eg steel, on rail and direct to the shipping, trafficking overseas. This simple logistics proves the cheapest. The fact that Kirkenes RailPort is the ice free port for large ships, 120-140.000 TDW and more, is suitable for this transport need.

4.3 The Rail Transport network of Russia, and Finnish connections

The Russian rail network is the largest national network in the world, consisting of 86.000 km rails. It is the main surface transportation network within the Russian Federation. It is approximately 40 km left of railways construction to connect Kirkenes and Norway to this vast rail network. The Russian railways system carried some 1 billion tons of cargo in 2000, according to the Russian Railways own statistics. In precise, the figure is 1.042.600.000 tons. (see map at page 20)

The railway line between St.Petersburg and Murmansk is at present undergoing electrification, and there is a project for change to alternate current, signaling systems – that could double the line capacity.

The rail link, "the Arkhangelsk corridor" between Kotsjkoma-Kostomuksha, and further towards Finland will be in use early 2003. This gives a second connection for a Finnish port, in addition to the St-Petersburg corridor – Vyborg.

4.4 The market for the Kirkenes RailPort within the Barents Port Network

Summing up the seven concrete areas for transportation on the PortNetwork.

The following transport segments are of interest for a large port development at Kirkenes.

1 Ship to ship transit from Russia

The products are mainly general cargo as

- fish as raw materials and products
- timber as raw materials and products
- base operations for oil/gas activities
- steel products



Kirkenes/ Ropelv Tanker awaiting oil transhipment, april 2002 from Russia Photo: Wpk



2 Ship to ship transit for the Northern Sea Route

The potential is for products from Western Siberia. Possibility for other transports to be investigated.

4 Ship to ship transit Arkhangelsk

Arkhangelsk and Kirkenes are at present planning a transit operation based on : steel products.

4 Land/highways to ship

There is a possibility of promoting highways transportation from Russia/Kola with transit at Kirkenes Harbour. This potential should be exploited on the short term basis. It is necessary to market this possibility in Russia.

- : general cargo export, eg berries, mushrooms, reindeer products
- : industrial products from Kola / NW Russia

5 Land/railways to ship

The potential for a railway connection is regarded as favorable through several studies, both in Russia and in Norway. The potential is for container transportation and bulk materials as:

- : iron ore
- : concentrations of minerals for aluminium production
- : grain
- : apatite

6 Ship to land/highways: products for NorthWest Russia, Kola

- Import of general cargo, containers for:
- : Households / capital goods
- : Industrial materials

7 Ship to land/railways: products for NorthWest Russia and Kola

- Imports of general cargo and larger cargo for industries
- : Containers

4.5 Proposal for a Market Analysis

This initiative has the objective of being a sponsor of structural upgrading for northerly part of the Barents Region, and through commercially based entities. It is the Barents Region that has the focus, together with the possibilities of exploiting the improved navigational conditions for the Northern Sea Route. The Barents Region has a Swedish and Finnish dimension, and we believe in taking up the contacts especially regarding the Finnish/Russian cooperation on infrastructure. The Kirkenes RailPort as a transportation gateway for the economic development in the Region, and to be a significant port for the European side of the shipping along the Northern Sea Route.

It is a belief of the board of the WPK Group that funding for a feasibility study, will be more realistic when a market analysis is carried out. The following aspects are important:

- the market potential for the project. Actual cargo, volumes, market flow directions
- raw materials and industrial production; extracts and products within a 10-15 years perspective
- transport economics
- the geographical limitations for the project; area of influence
- European and global perspectives
- the consideration towards the Russian Railways Network
- complementary and competing projects in the project influential area

We see a number of main transportation corridors for a port at Kirkenes - Barents. Transportation models and transportation systems will develop, giving driving force for a more northerly change of transportation within Russia.

Phase 1 of the market analysis

1. Defining the scope of the analysis, including objectives and mandate. Study the available background material. Interviews with available Russian, Norwegian and international contacts. Aggregate studies for an improved market understanding.
2. Evaluate the results of the fact finding, and produce the initial user demand analysis. Information on competitive activities have to be listed and evaluated

Phase 2 of the market analysis

1. Use the results from Phase 1 to evaluate the need for supplementary materials.
2. Do a strength and weakness analysis, and update with additional interviews.
3. Organize a broad conference on the need for infrastructure in the North.
4. Perform a final market and demand analysis as background for the decision making process for further planning and negotiations regarding project funding.



Source: Kirkenes Utvikling



5. Project circumstances

It is considered possible to establish the port stage 1 in a short period of time – 3 years from the time of decision making.

5.1 Technicalities, Security and Environmental Challenges

Technical and environmental challenges are at the forefront of all considerations regarding this project. All parties involved are aware of the project location, being "on top of the world", and in an environment that do not sustain damages. It is a very slow regeneration rate at these far north locations. This goes for all elements, sea, air and land. The project is to be based on the principle of sustainability.

The project feasibility studies are to be carried out in accordance with the UNIDO (United Nations Industrial Development Organization) feasibility methodology, and as such we can make sure that all necessary elements for a sound project will be exploited.

Environment in a total sense, is focus for the rail and port projects. This means that also the aerial view, views from the ground and from the sea, should come out well. We need to consider both the design aspects of this large installations – using the local traditions as much as possible. It should be made out a design manual for all installations, making this project a true project of the 21 st century. The planning regarding the environment should make certain of no unnecessary landuse, spills, noise and illuminations. It is a must that the project should make as little as possible environmental influence, in any aspect, on the existing society at Kirkenes.

The port project will be planned in accordance with the Norwegian Costal Administration guidelines for impacts of new port projects.

Within the technical considerations lie all the necessary security aspects for the operation as a whole. This is regarding navigational security, port security for storage and lifting operations, and for reloading activities for railways transportation. The facilities for the shipping operations will be planned with all the possible technical and technologies means.

5.2 Planning issues and decision making process

Planning for large transportation infrastructure is a complex process. This is the experience of consultants, construction companies and the authorities. It is not unusual for the local population to oppose plans, and in profiled campaigns. It is therefore necessary to make out a planning process right from the very start, and to plan the installation in close cooperation with the authorities.

The Norwegian Coastal Administration (Kystverket) issues their recommendations on impact studies for new port developments. The critical elements for a port establishment is considered in these guidelines.

It is our intention to cooperate at all times with the political and planning authorities both at Sør-Varanger Municipality and Finnmark County Council.

It is our intention that the railways connection should be discussed with the Norwegian central authorities, and constructed under technical management of the Russian railways. There are at present, several railway stretches being constructed south of the Kola Peninsula, and where the Russian railways cooperate with Finnish authorities and companies. We should see the same process for Kirkenes connecting into the Russian Rail Network, and where our company, Norwegian authorities and Norwegian companies, cooperate with the Russian railways, Russian companies and authorities.

The decision making process will be followed according to Norwegian and Russian laws and regulations.

The WPK initiative will produce the necessary documents for the decision making process, and as a basis for inviting the financial partners.

The decision and planning documents will in the main, consist of:

- Feasibility Study for a qualitative assurance of the project
- Project detailed documents as part of the bidding process for contractors
- Project contracts for the various part contracts
- Operations planning documents for the running of the total port and rail, being necessary when negotiating with shipowners, shipping companies and other interested parties as users of the facilities
- ISO certification of the management and operations

5.3 Focus on subprojects for efficient physical project implementation

The following subprojects will be of the WPK initiative main focus, on the short term basis:

5.3.1 New entrance road for Kirkenes from the border with Russia at Storskog

There is a need for an upgrade of the entrance road for Kirkenes. The road project is not currently being shortlisted for public finance. We have explicitly understood the need for a road upgrade, also being part of a road based transportation transit via Kirkenes Port. Transportation agents and operators are likely to explore the possibility of road transport, while waiting for the railways connection.

WPK is to propose a tollroad financing of the new eastern entrance road for Kirkenes and its port, in cooperation with the local authorities.



5.3.2 Railway link to the Russian Rail Network

Several studies have shown the potential for a rail link between Kirkenes and Nikel. A Sintef (Trondheim) study in 1996, the Russian Railways company, the October Railways in 1999 and the Finnmark County Council in 2000, have all concluded on the economic interesting possibility of establishing the rail link. The Russian rail network has some 86.000 km, and it only remains ca 40 km for a connection to the Port of Kirkenes. Thus Kirkenes, Norway will connect to the world's largest railways system. The transportation of large bulk commodities, and as such it is the chance for Kirkenes as a shipping transit location, as well as part of the Barents Port Network

It is difficult to prove, at this given time, the rate of returns on this rail link, using the standard procedures for economic impact analysis. The previous studies includes sufficient data and knowledge for sound project considerations. We are definite that the project will show a considerable return on investment. The feasibility study should work on this matter.

This rail link is not regarded as just a transportation infrastructure project. It has considerable elements of commercial development potential, included. It has bilateral aspects, being important for the development of relations in the Barents Region. It has market possibilities which all cannot be foreseen at present. There is observed a tendency for cargo railways trafficking, turning northwards to avoid Moscow area, and to benefit for transport transit in St Petersburg, Finland and the northerly ports. As such, the transit cooperation between Arkhangelsk and Kirkenes is one example where steel products may use the transit option via Kirkenes in the near future.

5.4 Phased construction for Kirkenes RailPort operations

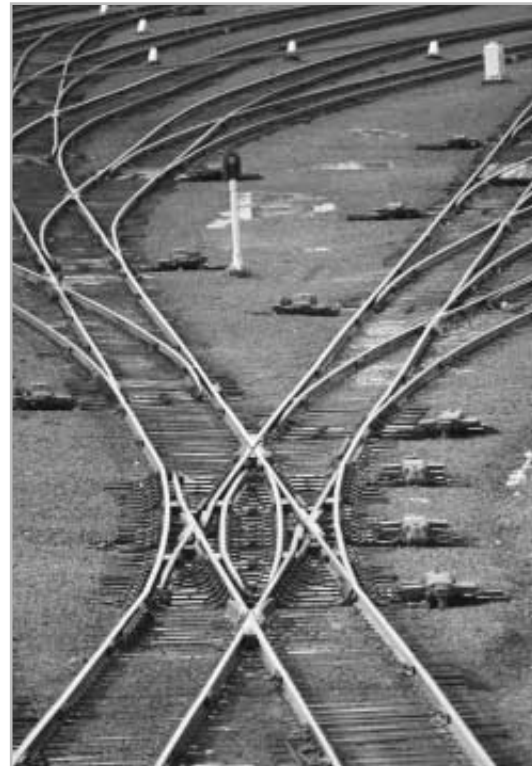
The Port of Kirkenes is at present being extended. The capacity of the port is shared between the municipal harbour and private sections, Kimek shipyard and the quay structure owned by the Sydvaranger company.

The Harbour Master for the Kirkenes Municipal Port is extending the quays in order to get a full potential for the port operations, including the ongoing planning for a transit project in cooperation with the Port of Arkhangelsk.

As such, the existing port facilities will serve a transit purpose for a given length of time – until the railways connection is in place. When the railways "arrives" at Kirkenes, it is anticipated that cargo from Kola will "blow" the capacity of the existing port at central Kirkenes. The situation, regarding reserve areas is not sufficient in the existing port, if a container operation should come into growth. The Sør-Varanger Municipality is looking at different locations, and the process for a New Port Plan is about to start within the municipal planning system

It is considered that a planning horizon for the Port should follow closely the establishment of a railways connection. It is considered a 3 – 4 year period for a railways project from the start of the planning, to the finished project. Thus, the development of the port should in planning terms follow the construction of the rail link. Continuous market forecasting should be made

to follow up the ultimate phase for port installation. Thus, the choice for port location has to be made before the final stages of railways project.



5.5 Project scope, project planning and timeschedule

5.5.1 Project scope

The project is in technical terms of a very large scale, and consists of all elements for transportation infrastructure:

- roads
- bridges
- tunnels
- railways
- municipal services as water, electricity, telecom, sewage, environmental control
- quays
- storage terminals, dry bulk
- cargo storage areas, outdoor, containers
- anchorage for ships
- shipping traffic control
- security systems

In addition the project will attract a number of construction workers and other employees for short term occupation, and for permanent operations management of both Russian and Norwegian origins. The local authorities will be obliged to make out public services for the system and for the employees and families that on a permanent basis will move to Kirkenes.

The project has a considerable cost base, and will need the very best of project organization and project management skills. The project will be followed by several project control systems, governed by an expert project board. It is necessary to attract the best expertise on planning and construction, and operations. Operations, meaning both onshore and on the sea side. We need to involve all possible experts both from Russia and Norway, and for some fields we would like to attract other international expertise. It is a great potential to develop professional links between engineering companies of Russia and Norway.

The Advisory Board of the World Port Kirkenes Group organization needs to be involved, giving necessary additional operational experience and competence.

The project feasibility study will follow the recommendations from the United Nations Industrial Development Organisation, UNIDO. In the following, we give a summary of the recommended elements in this Feasibility plan.

5.5.2 Feasibility Studies

The UNIDO model for project development has evolved with the experience from international projects. The use of this model can create confidence among the relevant authorities and investors, on both Russian and Norwegian sides. (www.unido.org)



*Kirkenes Railport -possible port/ rail-link
Photo: Norconsult*



The feasibility study will reach conclusions and recommendations for the further concrete and detailed planning. The UNIDO model is particularly feasible for this planning process.

The feasibility study will follow after a prefeasibility study, paving the way for the planning process. The prefeasibility study is a macro study on project circumstances, working on the implementation phasing, economical sides, presentation. An item in the prefeasibility study will be the market planning, as described in chapter 5. It is also important to build a network of governmental contacts and professional contacts. We also see the need to “speed up” the planning for the railways connection the prefeasibility study.

The Norwegian Coastal Authorities – impact analysis for port planning is to be followed. This analysis structure is developed using the long time experience among Norwegian portplanners and construction companies, as well as the authorities on the local level as port operators. (see www.kystverket.no (in Norwegian)). The Russian authorities should be consulted on the port side.

There is a need for a planning cooperation among the Russian and Norwegian authorities, regarding the planning and decision making process for the railways. Both for port- and railways planning, Russian designers and engineers are of high competence, and will be in demand for this project.

Feasibility Study UNIDO Model

Chapter 1 Executive summary

Chapter 2 Project Background and History

- Project promoting
- Project background
- Project objective and outline of basic project strategy
- Project location
- Economic and industrial policies supporting the project

Chapter 3 Market analysis and marketing concept

- Summarize results of marketing research
- List annual data on demand
- Explain and justify the marketing strategies for achieving the project objectives
- Indicate project marketing costs, sales and revenues
- Describe impacts on raw materials and supplies, location, the environment, technology

Chapter 4 Raw materials and supplies

- Describe general availability of:
 - Raw materials for construction
 - Processed industrial materials and components
 - Spare parts
 - Supplies for external and social needs

Chapter 5 Location, site and environment

- Identify and describe location, including:
 - Ecological and environmental impacts
 - Socio-economic policies, incentives and constraints
 - Infrastructure conditions and environment
- Summarize critical aspects and justify choice of location
- Outline significant costs relating to location and site

Chapter 6 Engineering and technology

- Outline of production programme
- Describe and justify the technology selected
- Describe the layouts and scope of the project components and
- Summarize main, their availability and costs
- Describe required major civil engineering works

Chapter 7 Organization and overhead costs

- Describe basic organizational design and management and measures required

Chapter 8 Human resources

- Describe the socio-economic and cultural environment as related to significant project requirements, as well as human resources availability, recruitment and training needs, and the reasons for the employment of foreign experts, to the extent required for the project
- Indicate key personell (skills required) and total employment (numbers and costs)

Chapter 9 Project implementation schedule

- Indicate duration of installations
- Identify actions related for timely implementation

Chapter 10 Financial analysis and investment appraisal

- Summary of criteria governing investment appraisal
- Total investment costs
- Major investment data, showing local and foreign components
 - Land and site preparation
 - Structures and civil engineering works
 - Auxiliary and service plant equipment
 - Incorporated fixed assets
 - Pre-production expenditures and capital costs
 - Net working capital requirements



- Project financing

- Source of finances
- Impact of cost of financing and dept service on project proposal
- Public policy on financing
- Investment appraisal : key data
 - Discounted cash flow (internal rate of return, net present value)
 - Pay-off period
 - Yield generated on total capital invested and on equity capital
 - Yield for parties involved, as in joint venture projects
 - Significant financial and economic impact on the national economy and environmental implications
- Aspects of uncertainty, including critical variables, risks and possible strategies and means of risk management, probable future scenarios and possible impact on the financial feasibility of the investment project
- National economic evaluations

- Conclusions

- Advantages of the project
- Major drawbacks of the project
- Chances of implementing the project

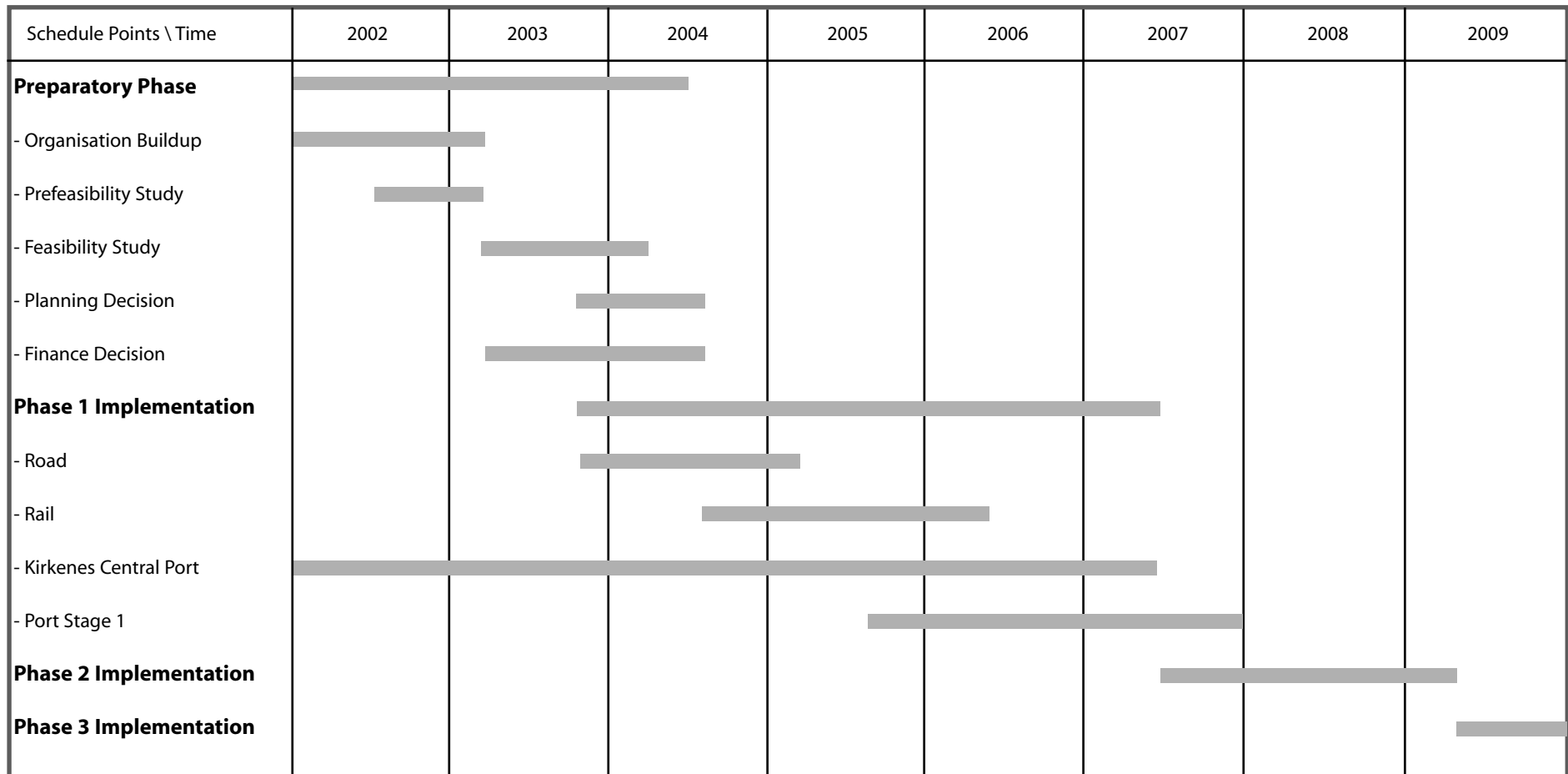
It is necessary to include specific studies related to the coastal location of this project, the nearness to the Northern SeaRoute. The total logistics situation regarding supplies for the Northwest Russia, the coast of Siberia and its cities, the requirements of potential oil/gas transportation and the possibility of supply roles for the construction and operations of the Snow White project of the coast of the County of Finnmark. Regarding the transport system in Russia, it would prove necessary to perform cargo transport modeling (alternate routes, transport modes, costs, goods, volumes, speed,..)

Cost of preparatory studies and related investigations

- Pre-investment studies
- Opportunity studies
- Pre-feasibility study
- Partial studies, support studies
- Experts, consultant and engineering fees
- Preparatory investigation such as
- Land surveys (quantification of building materials)
- Other investigation and tests; marine, navigation, environment

5.5.2 Time schedule for the Phased Development

The proposed (initial) schedule for project implementation is shown on the next page, and enclosed in the slide presentation on the WPK web pages. (www.wpk.no)



6. Financial circumstances

6.1 The objectives for financing

It is the focal aim for the World Port Kirkenes Group organization to work for a combined national (Norway and Russia) and international financing of the full installations of the Kirkenes RailPort and railconnection.

Thus, the WPK initiative will take on the task to gather finance operators on the Norwegian and Russian side, as well as international banks and companies from the finance, shipping, transport and construction sectors. The process of this operation is not settled as yet. It will require some in depth discussion, with potential finance partners later in the project development.

It is also within the intentions of the company to lobby for increased funding for possible projects at Murmansk and Arkhangelsk, and to participate in local organizations for developing training and other community needs within these Russian cities.

6.2 Financial and risk assessment

It is proposed to work out a Prefeasibility study for the project to seek for alliances, and that making an update on the Market analysis is vital. We have access to several and recent studies where the market potential for a rail connection from Nikel to Kirkenes has been exploited. The update Market analysis will give a sound platform for operations and project economy, regarding the construction and the operations of the rail and port facilities. The establishment of an alliance network for the project, will greatly lower the risks.

The necessary, economic benefits of this project is made from the use of the rail link and port for cargo transit, mainly bulk materials, and some general cargo. We anticipate that the demands for general cargo/containerized cargo will increase in accordance with the growth in Russian economy. The benefit of the rail and port project is further to enhance commercial and bilateral development in the Barents Region.

Thus, we need the market analysis as part of the prefeasibility study to reduce the risk assessment in conjunction with negotiations for international finance, included for planning and implementation purposes. We hope that the large Russian industries will show their interest in the project.

The financial solution to this project is complex, and especially for the installations at its full capacity. We anticipate that the initial phase of port operations will take full use of the exiting port facilities, mainly the quays of the municipal port. The municipal port authorities are at present extending the quays at the Prestøya vicinity. Regarding the rail link we anticipate a low grade project in the first phase, and suited to the present level of rail operation along the Russian network . This requires single track and 50-60 km/hour of operational speed.



Kirkenes is prepared for Russia. Photo: Wpk

6.3 Economic Return on the projects

The port operations will for the initial term utilize the existing port infrastructure at the central Kirkenes port. Most of this is in place, and only minor new investments is required for new transit operations. Norsk Hydro has considered using the Sydvaranger silos for transit storage of apatite minerals.

The railways project is given a positive rate of return in the earlier mentioned studies (Sintef, 1996, October 1999). However it is not viable only to look for returns from a transportation point of view. We see, as earlier mentioned, additional values to the rail link project, as commercial development in the region as a whole. The market analysis should be prolonged as a continuous task throughout the project period. Thus, it will in time be possible to lock the economical return on the investment. There is a definite need to calculate a more secure rate of return for the final phases of the port investment, and we should be able to perform this at a satisfactorily level at some time during the rail link project.

The World Port Kirkenes Group AS initiatives will seek to influence the issue of constructing the rail link, as "Norway for the Rail link from Kirkenes to the Russian Railways Network". This is the first concrete infrastructure focus for the Group initiative, in parallel with the focus on the new entrance road to Kirkenes (from the border crossing with Russia at Storskog). The planning phase for the Kirkenes Rail Port should start as soon as possible. The need for port capacity for shipping along the Northern Sea Route is integrated with the project planning, to further increase the economic viability.



