



**Bothnian  
Green  
Logistic  
Corridor**

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**What should be the first steps  
in making the BGLC's vision  
come true?**

# ThinkTank

Think transport | Think energy

## The Vision

By Przemysław Myszka

The Bothnian Green Logistic Corridor (BGLC) project is nearing its completion. The initiative kicked-off on August 8<sup>th</sup>, 2011, and since then has produced 20 reports as well as held numerous meetings devoted to making the Bothnian Corridor a robust transport & logistics solution connecting the north of Sweden, Finland and Norway with other European and world markets. Now the project has tabled its final publication - the Strategy for the BGLC, a testimony of its work and a leap into the future of the Bothnian region.

**B**y 2030, the BGLC will be a fully developed green corridor, an integral part of the TEN-T core network, providing efficient and smart logistics solutions for the industrial chains originating from the north of Nordics stretching along the Swedish and Finnish sides of the Bothnian Gulf and linked with the European and world markets. The Bothnian Corridor will thus strengthen regional, national and European economies by securing the supply of raw materials and creating new job and business opportunities; the BGLC will also ensure a safe northbound flow of everyday goods.

In other words, the BGLC will function as a catalyst of growth. However, in order to realize this vision several obstacles must be overcome. First of all, the issue of infrastructure quality and capacity needs to be addressed in light of a predicted increase in volumes (by 50% till 2050 according to BGLC). Secondly, there are quite strong differences between Bothnian countries, e.g. between rail sectors in Sweden in Finland, making it harder to harmonize cross-border traffic. Thirdly, from 2015 onwards the so-called Sulphur Emission Control Area will most probably increase the cost of maritime transport and contribute to a modal backshift (from sea & rail onto roads), standing in the way of creating a truly green corridor. Last, but not least, the cost-driving factor in all transport decisions (infrastructure investments, building a logistics chain, etc.).

The BGLC project underlines the importance of building an integrated Bothnian-TEN-T multimodal network, keeping in mind at all times that the European priorities should be combined with regional interests. The project advises to establish an arena for stakeholder involvement to take part in shaping the corridor, highlighting that a transport corridor acts as a catalyst for

growth, contributing to an increase in wealth. BGLC stresses the necessity to make the transport network more efficient and improve access for small & medium-sized enterprises which can benefit from large-scale logistics chains set up for major mining & forest industries. Last of all, the project continuously advised strengthening ties with Russia and the Mediterranean Sea. ●

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By Erkki Vähätörmä  
Transport Engineer at the Uusimaa Regional Council



In my opinion, the most important way to develop a corridor is by making it easier for small and medium-sized enterprises to enter and benefit from large-scale logistics chains set up primarily for the mining and forest industries. Especially the future of the forest industry in Finland doesn't seem to be so bright, therefore available capacity could be utilized by smaller enterprises. There is also a lot of growth potential concerning small- and medium-sized enterprises that could be unleashed thanks to improving the efficiency of their logistics chains. This could also result in overall greener solutions for transports.

Showing that a transport corridor acts as a catalyst of growth, contributing to an increase in wealth, could be a further step. Currently, we don't have enough understanding of the benefits stemming from transport corridors. Highlighting gains will certainly inform about different ways a transport corridor fuels the economy, depending on the amount of transport shipments and the intensity of a corridor's utilization, and so on. It could be also very useful to find some limit values above which the corridors can realise new kinds of benefits. For instance – how much and what kind of transports should there be, e.g. so that companies from the assembly industry would be interested in accessing a corridor and willing to place factories right there. ●



By Hans E. Boysen  
Researcher at the Royal Institute of Technology, KTH

In order to make the BGLC's vision come true, a number of concrete actions are needed, such as: improve railway network reliability; coordinate maintenance planning along the corridor; modify brake tables to raise freight train speeds; unify train make-up and

brake rules across the borders; add wye tracks at junctions; implement the Øresund and Fehmarnbelt high-capacity rail corridor standard through Germany and Scandinavia; and last, but not least, use standard wagons of 80 tonnes load capacity. ●



By Uday Kumar, Aditya Parida,  
Christer Stenström, Stephen  
Mayowa Famurewa and Ulla Juntti  
Division of Operation, Maintenance and  
Acoustics, Luleå University of Technology

A chain is only as strong as its weakest link. Therefore, the first steps in making the BGLC's vision come true are to strengthen the weakest links, and for doing so, we have already finalised the first step. The strategic plan of BGLC presents the management structure, measures and time perspectives. To be really proactive and competitive, the short-term measures linked with strategic measures can guide and deliver the results quickly. The list of short-term actions gives guidelines how to improve the

weakest links, like improvements of nodes, infrastructure, maintenance and standards. The BGLC project has produced 20 reports, which further give details in order to carry out these improvement measures. We should take care of this opportunity and exploit the up-to-date research results.

At Luleå Railway Research Center (JVTC), transportation, sustainability and life cycle costing are our core and priority areas. Our strategy should be to implement the monitoring of the degradation of the

railway system through the remote eMaintenance concept to find more cost-effective maintenance limits. When the railway system reaches a maintenance limit, the way-side detector sends an SMS or e-mail to the maintenance personnel informing that actions are required to preserve the system. Finally, it is important that the railway is seen as one system including infrastructure and rolling stock, as well as planning and time tables, to achieve the overall objectives of the EU. ●



By Thomas Erlandson  
Coordinator EUSBSR PA Transport, Sweden's Ministry of Enterprise,  
Energy and Communications, Transport Division



In the Baltic Sea region, transport is particularly important as the distances – internally, to the rest of Europe and to the wider world – are very long and the conditions for traffic are often difficult (forests, lakes, snow and ice in the winter, etc.). Raw materials and manufactured goods deriving from the rich natural resources in the northernmost parts of the region are attractive on the world market. This region, which is partly located on the periphery of the economic centre of Europe, depends strongly on foreign trade in goods and on an international exchange of knowledge and services. Thus a well-functioning transport system, combined with greater attention to the spatial development and location patterns, is of vital importance for its prosperity and economic growth.

Good transport facilities will continue to be important in the future. The initiative of the Bothnia Green Logistic Corridor project is a valuable contribution to the objective of promoting effective and environmental friendly transports connecting the Bothnia region with southern Scandinavia, neighbouring countries and continental Europe. The project is now near to its completion and the results will hopefully be disseminated to all relevant stakeholders and also become supportive in the future development of our common infrastructure.

Citizens and business community are however depending on more than infrastructure though it is an important prerequisite. Efficient and smart logistics solutions are also essential for production chains from the Nordic production sites further to processing industries and eventually to the European and world markets. In this respect we have confidence that the results of the BGLC project will be of great value. ●



By Kirsti Slotsvik  
Director General of the Norwegian Coastal Administration



Norway, this means that a network of efficient and safe ports and fairways is needed, in combination with land infrastructure with sufficient capacity, i.e. terminal and storage facilities, as well as rail and road links.

The ports of Trondheim and Narvik are directly linked by rail to the Bothnian corridor through the Meråkerbanen (Mittbanan) and the Ofotbanen (Malmabanan). Furthermore, the ports of Mosjøen, Mo i Rana, Bodø, Tromsø and Kirkenes are connected through the road system. All these locations are well suited for transiting cargo from the Bothnian region, with deep-water ports, safe fairways, and good availability of pilots and tug boats. Several of the ports in the region are in the process of expanding their terminal facilities as well as cargo handling capacities in order to meet increased demand.

Generally, there is no limitation for increased traffic in fairways along the Norwegian coast, and to the respective ports. All the ports along the coast of Northern Norway are ice free year round. In addition, these ports are located outside the SECA 2015 low-sulphur emissions area. Increased use of Norwegian ports for transport of cargo to and from the Bothnian region will however require necessary improvements in road and rail infrastructure, both in Norway as well as in neighbouring countries. ●

The Norwegian Coastal Administration (Kystverket) is responsible for services related to maritime safety, maritime infrastructure, transport planning, and emergency response to acute pollution. In our work we regularly connect with ports administrations and transporters in Norway, and we work closely with our colleagues in the national air, rail and road administrations. In the area of maritime transport and ports infrastructure we have submitted major contributions to Norway's 'National Transport Plan', as well as the 'Joint Barents Transport Plan' together with transport administrations in Sweden, Finland and Russia.

An effective freight transport network is the basis for meeting businesses' needs. The Bothnian Green Logistic Corridor rightly points out that Russia and Norway play a significant role as origin and destination for cargo that transits the Bothnian region. As for maritime transport in



By Leif Zetterberg  
The Association of Swedish Train Operating Companies



For the vision to come true, the business sector has to express business opportunities and also stress the need for efficient rules and standards within the transport sector, i.e. to make cross-border transport easier. Rules for workers, taxation of fuel, security systems and standard of the transport system are all areas that have to be dealt with. But also the monitoring by state agencies has to be more efficient. We need a fair competition to establish a sustainable business. But we also need – from a train operator's perspective – a railway track from north to south which we can rely on. Otherwise we cannot offer the industry a competitive solution.

The vision very much depends on real networking between business and politics, both on the European and local level, as well as in big and small scales. The upside of this work and vision is obvious to all of us. But it indicates a lot of work too. It is not a quick fix. ●



By Leo Huberts  
European Commission, Policy Coordinator, DG MOVE, B.1 (TEN-T)

In the new Trans-European transport network (TEN-T), the Bothnian Corridor will play an important role in connecting the remote areas and their important industry in Sweden and Finland via the core and comprehensive network to the rest of the European Union, Norway and Russia.

The Bothnian Corridor is as such not part of the nine TEN-T core network corridors. However, through the core network it connects to two of those, namely the Scandinavian-Mediterranean corridor via Stockholm and Helsinki, and the North Sea-Baltic corridor via Helsinki. Furthermore, the following sections are indicated in Annex I to the Connecting Europe Facility as pre-identified sections of the core network:

- Luleå-Oulu – cross border rail;
- Sundsvall-Umeå-Luleå – bottleneck rail;
- Stockholm-Gävle-Sundsvall – other core network rail;
- Mjölby-Hallsberg-Gävle – other core network rail;
- Bothnian-Kiruna-NO border – cross border rail;
- Helsinki-Oulu – other core network rail.

Being part of the core network and connected to two important core network corridors, the Bothnian Corridor offers opportunities for further development of transport connections (including ports, airports and rail-road terminals), rail upgrading, ice breaking capacities as well as for improving links to Norway and Russia.

Good progress has already been made on the Bothnian Corridor. New sections have been completed recently and other projects are being upgraded in both Sweden and Finland.

In total EUR 26.2 bln will be available for the EU to co-finance TEN-T projects during 2014-2020. Of this amount EUR 11.3 bln has been earmarked for Member States eligible to the Cohesion funds. Hence, EUR 14.9 bln will be available for all 28 Member States. The new TEN-T budget 2014-2020 offers possibilities of EU co-financing of projects on the Bothnian Corridor. While 80-85% of the TEN-T budget will focus on the core network corridors and on other pre-identified cross-border and bottleneck projects on the core network, the remaining 15-20% will focus on an increased use of financial instruments and on the comprehensive network. Works on



cross-border rail projects can be co-funded up to 40%, cross-border road projects up to 10%. The co-funding rate for rail bottleneck sections is max. 30% and for other projects of common interest 20%.

In summary, the inclusion of the Bothnian Corridor in the TEN-T core network will deliver a major contribution to the development of this part of the EU by: providing sufficient capacity for the increasing needs of freight transport (minerals, pulp and paper products); improving accessibility of remote peripheral regions as well as providing the basis for a future Northern Corridor from Narvik through Haparanda-Tornio to St. Petersburg.

For more detailed information on the TEN-T guidelines, the maps and Connecting Europe Facility:

[http://ec.europa.eu/transport/themes/infrastructure/revision-t\\_en.htm](http://ec.europa.eu/transport/themes/infrastructure/revision-t_en.htm) ●



By Stig Hjerppe  
Stig Hjerppe Consult HB

I think that in order to reach BGLC's vision, fundamental prerequisites need to be fulfilled. First of all infrastructure bottlenecks must be fixed, both concerning missing links and infrastructure quality. Obstacles on border crossing need to be addressed too, in order to have smooth and swiftly running logistics solutions.

In parallel to the above actions special emphasis must be put on enhancing opportunities for small- and medium-sized enterprises to prosper and develop together with the development of large scale logistics chains. ●



By Ryszard Toczek  
Head of City Development Office Municipality of Gdynia

The first step involves a basic diagnosis of the TEN-T incumbent status across the corridor's every mile. Since the BGLC is to be green by technological, technical and ecological means, it ought to represent a practical approach. Multimodality is the key figure here. The potential is obvious but the question of synergy is still open. The European Commission has given a green light for forging the new architecture of the European transport system (revised TEN-T core network). There are still missing links. Roads running to the ferry terminals in Gdynia and Karlskrona do not have the status of E-roads. It is an urgent matter – in terms of new port infrastructure serving the Motorway of the Sea (MoS) Gdynia-Karlskrona.

Seaways – the most green transport mode – must be confirmed as a crucial section of the network. For example, the ferry link Helsinki-Gdynia, is a section of the E-75 and ought to be transformed into MoS therefore.

A BGLC project overview should be the second step. How do solutions and recommendations relate to the current common development possibilities? The BGLC Strategy gives a responsible answer – multimodality, transportation costs, paying attention to regional & local interests, logistics efficiency, stakeholder engagement, wider accessibility, etc.

The third step concerns the final scheme or map of green corridors within the project catchment area. But are innovative and attractive

solutions territorially limited? Certainly not. BGLC is just a starting point. In order to be successful it must be linked in the future with the Baltic-Adriatic Green Logistic Corridor, covering the whole of Central and Eastern Europe.

A fourth step is financing. The EU's Connecting Europe Facility is not the only source of financing. Regarding the 1315/2013 regulation, Member States are responsible for building new infrastructure. Yet, other parties have their roles to play in this regard – local and regional governments, enterprises, infrastructure owners as well as air- and seaports.

All in all, the corridor's development is underway. All new investments must lead to easier core network accessibility. ●

By Torbjørn Naimak  
Regional Road Director (Northern Region)  
at the Norwegian Public Roads Administration



From my point of view, some considerable amount of valuable work has already been done within the Bothnian Green Logistic Corridor project (BGLC). The border-crossing perspective, including all transport modes in developing the strategy, should be a model also in other initiatives.

The corridor is also a prioritized area in the work within the proposed Joint Barents Transport Plan (JBTP), proposing several steps for further work in order to connect the Bothnian Corridor to other corridors. The JBTP addresses, among others, the following key challenges for the Bothnian Corridor:

#### Road

- Upgrading the road (remaining parts) between Oulu and Kemi;
- Increasing accessibility (speed) and traffic safety;
- Improving horizontal & vertical curves in some places;
- Reaching the environmental quality standards in Umeå and Skellefteå.

#### Rail

- Electrifying the railway section between Tornio/Haparanda and Kemi;
- Dealing with a serious lack of track and carrying capacity as well as a limited speed standard along the railway systems in the corridor (in Sweden especially between Umeå and Boden);
- Finding an effective solution to the different gauge systems between Sweden (1,435 mm) and Finland (1,524 mm).

I would also like to underline the importance of cross-border cooperation between neighbouring countries regarding the following issues. Harmonization of standards for road transportation will give a more efficient transport system in the Barents region. There are different standards on maximum total vehicle weight and length, on permitted axle loads, on maximum gradient, road width and road vertical geometry. This causes problems on a daily basis for international cargo transports in the Barents. Since standards are national,

this issue needs to be raised at a national level in each country. Additionally, we need common requirements for winter equipment for heavy goods vehicles to increase road safety; bottlenecks should be eliminated; and a common system ought to be established for real-time information on driving conditions.

The Norwegian Public Roads Administration is currently working together with transport authorities in Sweden and Finland to establish more common planning on strategic parts of other corridors connecting to the Bothnian Corridor (European Road Nos. 8 and 12, along with the Kemi-Rovaniemi-Kirkenes Corridor). The capacity of the Malmbanan line and the Ofoten line (the Ore Railway) is planned to be enhanced in order to accommodate increasing freight and passenger traffic.

The proposed Strategy for the BGLC includes important tools for improving and developing an efficient transport network. Steps encouraging stakeholders to cooperate in finding solutions to both key challenges and implementing measures to strengthen the ties to the world markets would be of the highest importance. ●





By Vineta Griekere  
Project Officer, Baltic Sea Region Programme 2007-2013, Joint Technical Secretariat

**T**he Bothnian Green Logistic Corridor (BGLC) project is co-financed by the Baltic Sea Region Programme 2007-2013. The project aims to support development of BGLC into a green corridor, which offers efficient and smart logistic solutions to industrial chains in northern Europe. One of the main achievements of the project is a joint Strategy for Corridor development.

The Strategy for the BGLC sets out a 2030 vision and strategic areas for Corridor development. The project succeeded actively in involving many and diverse stakeholders, which proved the relevance of the Bothnian Corridor for the region. In order to make the vision true, one of the first steps

could be to sustain commitment of the so far involved stakeholders in the Corridor's development as well as to attract other relevant actors. In particular, involvement of private stakeholders could be crucial. The involvement of stakeholders could also help to attract necessary financial means.

One of the project's recommendations is to establish a transnational management structure to facilitate the Corridor's development. Establishment of such a structure could support the implementation process of the BGLC Strategy. A well organised monitoring system could allow overseeing the implementation process of the Strategy and to make adjustments, if necessary. ●



**Bothnian  
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**BGLC Final Conference**  
**6-7 March 2014, SE/Umeå**

Join the Bothnian Green Logistic Corridor and its 29 partners from Sweden, Finland, Norway, Germany and Poland at the project's final conference, where the BGLC team will present the Bothnian Green Transport Strategy on how to develop the Bothnian Corridor into an efficient, reliable and sustainable transport corridor.

[www.bothniangreen.se](http://www.bothniangreen.se)

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