



Norwegian Tunnelling Network

High Potential Opportunity Project (HPO)

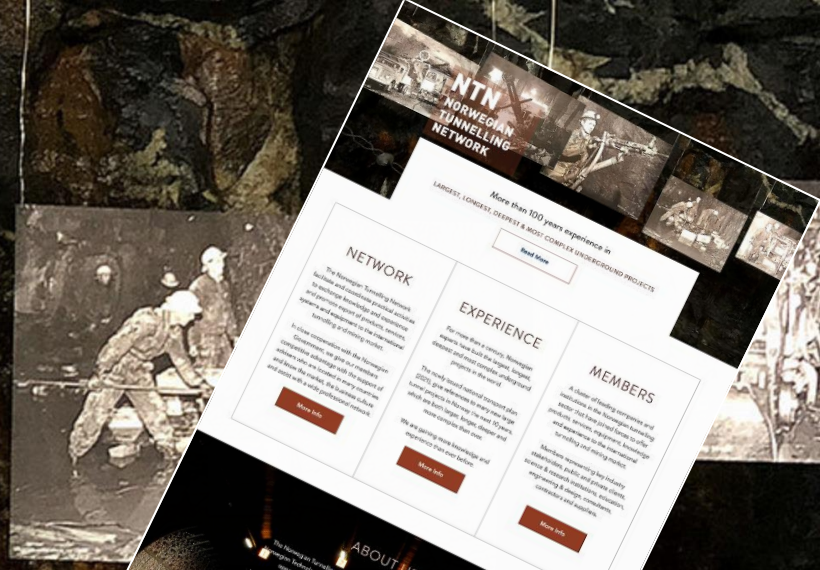
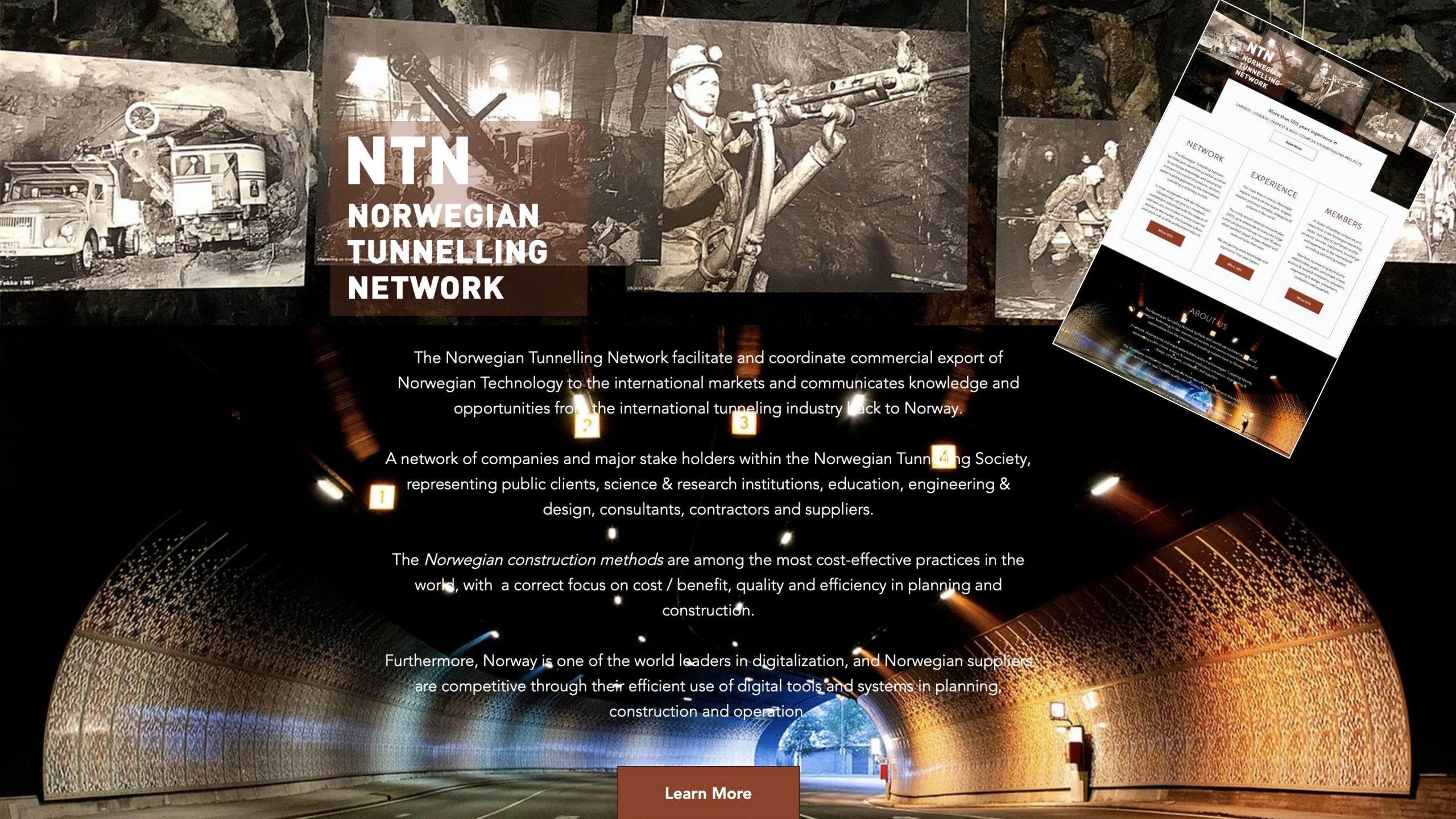
Instrument for increased exports, international investments and increased knowledge and technology cooperation

Time	Title	Presenter	Organization
09h00 - 09h15	Welcome to the seminar	Jostein Leiro	Norwegian Embassy
09h20 - 09h40	Introduction of HPO program & suppliers	Arild Petter Sovik	Norwegian Tunnelling Network
09h45 - 10h10	Research based technologies for tunnelling	Mario Morales	SINTEF
10h15 - 10h30	Coffee break		
10h30 - 10h55	Excavation of tunnels with the Norwegian method	Ola Kvammen	INCITU AS
11h00 - 11h25	The mining industry – Future developments in Chile	Miguel Zauschkevic	The Chilean Chamber of mining
11h30 – 11h55	A geologist way of working - different phases and different roles	Ingrid E. Fjelberg	Independent
12h00 - 13h15	Lunch		
13h20 – 13h55	Dealing w/challenging ground conditions	Anne-Lise	Geofrost AS
14h00 - 14h25	Reducing geological risks and optimizing drillings plan	André Araujo Silva	Emerald Geomodelling
14h30 - 14h45	Coffee break		
14h50 – 15h15	Computerized tunneling, Cloud based management of drill and blast operation	Thorvald Wetlesen	Bever Control
15h20 - 15h45	Optimal separation of soil and water	Henrik John Steffens	Cubility AS
15h50 – 16h15	Directional Core Drilling Advantages of exploring the path of a planned tunnel alignment	Frank Finseth	Devico AS
16h20 – 16h45	Introduction to road standards & philosophies in Norway	Arild Petter Sovik	Norwegian Tunnelling Network
17h00 – 17h10	Summary		



Program

Time	Title	Presenter	Organization
09h00 - 09h10	Introduction to Day 2		Norwegian Tunnelling Network
09h20 - 09h40	Route 7 – Challenges and opportunities	Rolando Tolozea	Ministry of Public Works
09h45 - 10h10	Development of the industry through cooperation on research	Mario M./ Andre A.	SINTEF & Emerald
10h15 - 10h40	The Fjaerland hydropower project ITA Award Winner 2017	Tomas Lindstrom	INCITU AS
10h45 - 11h00	Coffee break		
11h00 - 11h40	Future developments in El Teniente (Portfolio)	Pablo Gandara	Codelco
11h45 - 12h10	Experience in Norway after 6 major tunnel fires Tank Trailer Fire in the Skatestraum Subsea Road Tunnel (400 MW)	Arild Peter Søvik	Sovik Consulting
12h15 - 12h30	Summary from CTES, NTN and IN		NTN/IN/CTES
12h30 - 13h30	Lunch		



NTN NORWEGIAN TUNNELLING NETWORK

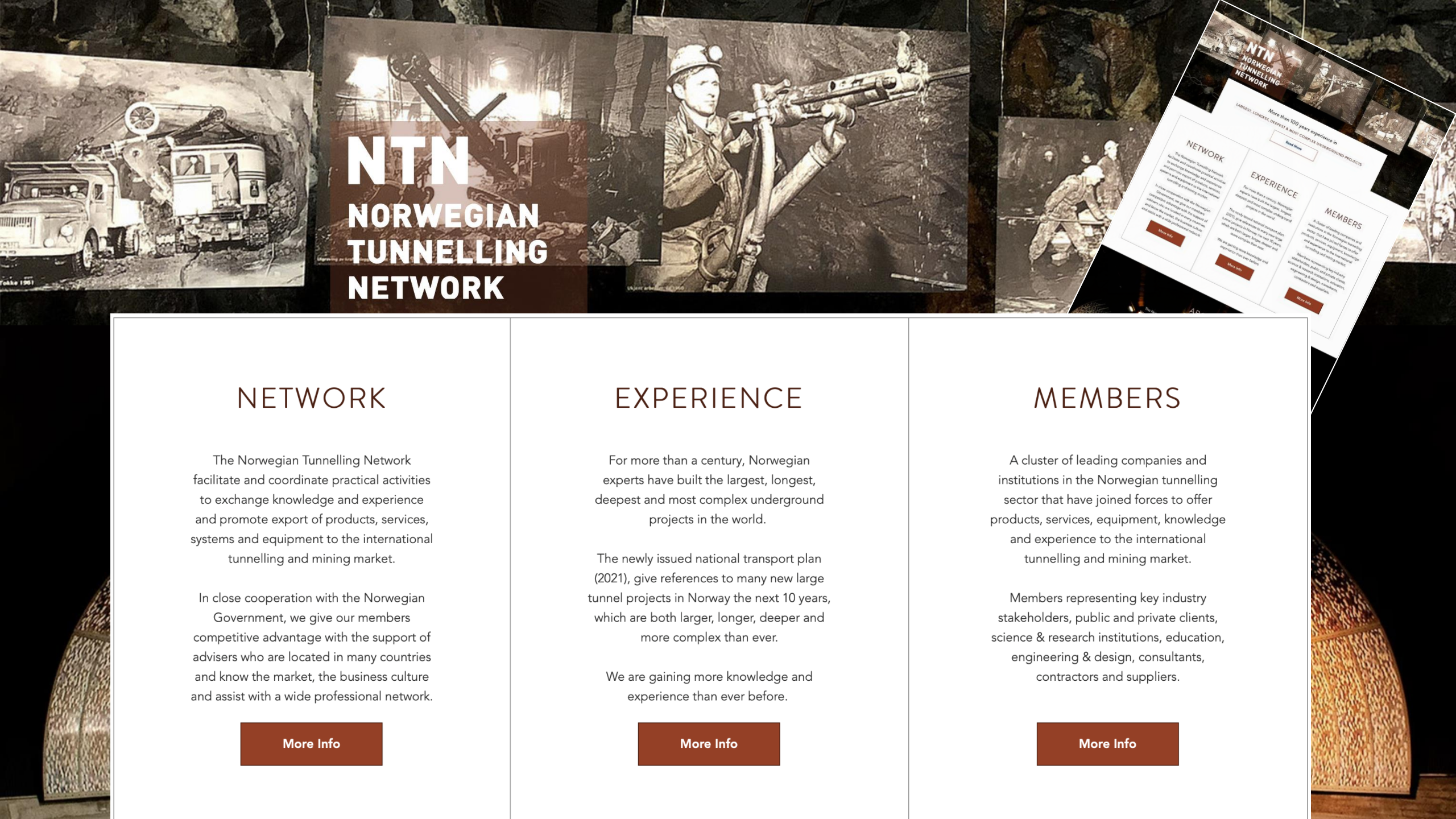
The Norwegian Tunnelling Network facilitate and coordinate commercial export of Norwegian Technology to the international markets and communicates knowledge and opportunities from the international tunneling industry back to Norway.

A network of companies and major stake holders within the Norwegian Tunneling Society, representing public clients, science & research institutions, education, engineering & design, consultants, contractors and suppliers.

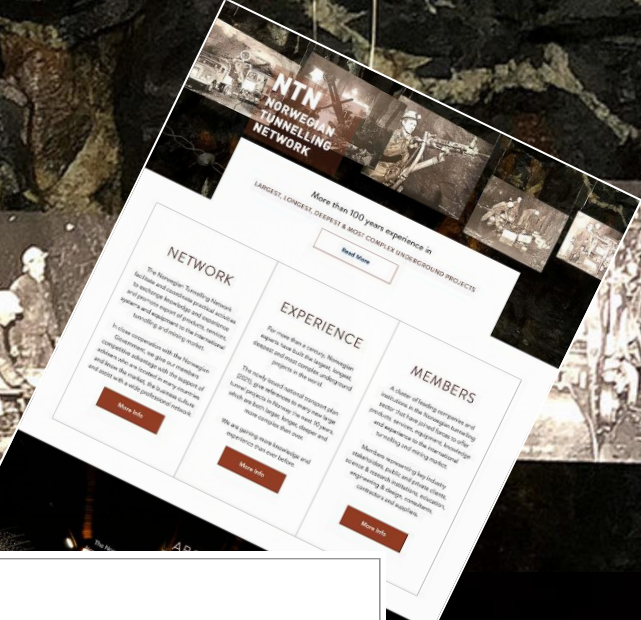
The *Norwegian construction methods* are among the most cost-effective practices in the world, with a correct focus on cost / benefit, quality and efficiency in planning and construction.

Furthermore, Norway is one of the world leaders in digitalization, and Norwegian suppliers are competitive through their efficient use of digital tools and systems in planning, construction and operation.

[Learn More](#)



NTN NORWEGIAN TUNNELLING NETWORK



NETWORK

The Norwegian Tunnelling Network facilitate and coordinate practical activities to exchange knowledge and experience and promote export of products, services, systems and equipment to the international tunnelling and mining market.

In close cooperation with the Norwegian Government, we give our members competitive advantage with the support of advisers who are located in many countries and know the market, the business culture and assist with a wide professional network.

[More Info](#)

EXPERIENCE

For more than a century, Norwegian experts have built the largest, longest, deepest and most complex underground projects in the world.

The newly issued national transport plan (2021), give references to many new large tunnel projects in Norway the next 10 years, which are both larger, longer, deeper and more complex than ever.

We are gaining more knowledge and experience than ever before.

[More Info](#)

MEMBERS

A cluster of leading companies and institutions in the Norwegian tunnelling sector that have joined forces to offer products, services, equipment, knowledge and experience to the international tunnelling and mining market.

Members representing key industry stakeholders, public and private clients, science & research institutions, education, engineering & design, consultants, contractors and suppliers.

[More Info](#)

Norwegian Project Support Team

Norwegian Tunnelling Network (NTN) in collaboration with Innovation Norway have started a High Potential Opportunities (HPO) Project, which is a new demand-driven export program, where the entire Norwegian support apparatus will assist Norwegian suppliers to start a collaboration with Chile.



Arild Petter Søvik

CEO
Norwegian Tunnelling
Network



Rune Andersen

Special Adviser
Innovation Norway



Hakon Lerum Ward

Director
Innovation Norway
Brazil



Pilar Santos Neves

Project Manager
Innovation Norway
Brazil



Louisa Børresen

Embassy Secretary
Norwegian Embassy
Santiago



Grethe Bergsland

Regional Director
Americas
Innovation Norway



José R. Martínez

Senior Vice President
Industry and Energy
Export Finance Norway

Norwegian Academic & R&D Team

Through facilitation of studies, sharing of learning capacity, exchange of students and internships in projects, a unique interaction for learning can be created. In our investment in the Chilean market, we wish to facilitate an ecosystem for learning, which benefits both the Norwegian and Chilean industries.



Mario Morales

Research Scientist
SINTEF
Department of
Infrastructure



Krishna Kanta Panthi

Professor
NTNU
Department of Geoscience
and Petroleum



Kristin Holmøy

Professor
NTNU
Department of Geoscience
and Petroleum



Bjørn Frengstad

Professor
NTNU
Department of Geoscience
and Petroleum









Eivind Grøv















































Chief Scientist/Professor
SINTEF
Department of
Infrastructure

Companies

Norwegian Tunnelling Network (NTN) companies provide a wide range of services in the field of development, design, construction, operation and maintenance of tunnels and underground facilities. NTN is established to provide commercial services to international clients and customers.

Academia (University & Research) members

 NTNU Research and Academy Norwegian University of Science and Technology (NTNU) NTNU is a university with an international focus and a main profile in science and technology, a variety of programs of professional study.  Krishna Kanta Parthi kkrishna.parthi@ntnu.no	 SINTEF Research & Advisory SINTEF For more than 70 years, SINTEF has developed solutions and innovation for society and customers all over the world. This is how SINTEF have become a world-leading research institute.  Eivind Grav eivind.grav@sintef.no	 NGI Research & Advisory NGI NGI is an independent international centre for applied research and consultancy in engineering-related geosciences, integrating geotechnical, geological and geophysical expertise.  Pål Drevland Jakobsen p.drevland@ngi.no
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<div></div> <div>Contractor & Mining Owner</div> <div>Leonhard Nilsen & sønner AS</div> <div>LNS is both a construction contractor, a mining contractor and a mining owner. LNS combines the best of both the construction industry and the mining industry in its projects.</div> <div><div>Aida Tusha aida.tusha@lns.no</div></div>	<div></div> <div>Product Supplier & Consulting</div> <div>AMV AS</div> <div>AMV offer engineering, manu'acturing, testing, installation services, and heavy machinery for tunneling and infrastructure on the market.</div> <div><div>Per Gunnar Andersen pga@amv-as.no</div></div>	<div></div> <div>Consultancy Agency</div> <div>SWECO Norge AS</div> <div>Sweco plans and designs and offering qualified services in the fields of consulting engineering, environmental technology and architecture. Long experience in underground projects.</div> <div><div>Jan Rohde jan.rohde@sweco.no</div></div>	<div></div> <div>Consultancy Agency</div> <div>Ramboll AS</div> <div>Ramboll is a global consultant in Construction & Architecture, Transport & Urban Development, Energy, Water, Environment & Health and Management consulting.</div> <div><div>Ingrid Elisabeth Fjølberg ingrid.fjolberg@ramboll.no</div></div>	<div></div> <div>System Supplier</div> <div>Bever Control AS</div> <div>Bever Control AS is a recognized international supplier of computerized control and monitoring systems for drilling rigs in mining and tunnel operations.</div> <div><div>Thorvald Wetlesen jr. twj@bevercontrol.com</div></div>	<div></div> <div>Product Supplier</div> <div>Foamrox AS</div> <div>Foamrox is a supplier of prefabricated solutions to the tunnel/construction industry. Light and smart solutions that contribute to a safer, quicker and a more sustainable installation.</div> <div><div>Glenn A. Jakobsen glenn@foamrox.no</div></div>	<div></div> <div>Product Supplier</div> <div>Protan AS</div> <div>Protan delivers ventilation duct systems for all sizes and lengths of tunnels and for cavern and mine excavations.</div> <div><div>Pål Fossum pal.fossum@protan.no</div></div>	<div></div> <div>Product Supplier</div> <div>Devico AS</div> <div>Devico deliver a range of top quality instruments including directional core barrel, core orientation equipment, and both magnetic and non-magnetic downhole survey instruments.</div> <div><div>Frank Finseth frank@devico.no</div></div>	<div></div> <div>Product & Solution Supplier</div> <div>The Coring Company AS</div> <div>The Coring Company provides cutting-edge software and hardware solutions to heavy industry through research, AI, and robotics, and enable digital transition through ground-breaking technology products.</div> <div><div>Frida Vonstad frida@thecoring.com</div></div>	<div></div> <div>Service Supplier</div> <div>Geofrost AS</div> <div>Geofrost is a geotechnical contractor delivering solutions based on ground freezing and competence about frozen soil.</div> <div><div>Anne-Lise Berggren anne-lise.berggren@geofrost.no</div></div>	<div></div> <div>Product Supplier</div> <div>Cubility AS</div> <div>Manufactures and delivers advanced systems for treatment and recovery of liquids in energy, environmental, municipal & utility, aquaculture, industrial and construction industries, including tunnels and mining.</div> <div><div>Henrik John Steffens hjs@cubility.com</div></div>	<div></div> <div>Product & Service Supplier</div> <div>Trafsys AS</div> <div>Trafsys is a leading Nordic knowledge company that develops and supplies Intelligent Transportation Systems (ITS), based on advanced information and communication technologies.</div> <div><div>Terje Floor Heggeland tfh@trafsys.no</div></div>
<div></div> <div>Product Supplier</div> <div>Exentric AS</div> <div>Exentric Tunnel Systems deliver the next generation smart & quick installation lighting system, perfect for temporary applications in construction, operation and maintenance of tunnels.</div> <div><div>Jan Erik Kvernaveen jan@exentric.no</div></div>	<div></div> <div>Service Supplier</div> <div>EMerald Geomodelling AS</div> <div>EMerald Geomodelling is a tech company dedicated to revealing unknown ground conditions, helping large infrastructure projects to reduce the need for intrusive ground investigations.</div> <div><div>André Araújo Silva asa@emerald.no</div></div>	<div></div> <div>Consultancy Agency</div> <div>Incitu AS</div> <div>Incitu AS provides services within consulting, management and operations to the construction industry. The company has special expertise in underground and civil engineering.</div> <div><div>Ola Kvammen ola.kvammen@incitu.no</div></div>	<div></div> <div>Product Supplier</div> <div>Monark AS</div> <div>Monark AS is producer of a complete range of Rock Drilling Tools.</div> <div><div>Rune Hellingrud r.hellingrud@monark.no</div></div>	<div></div> <div>Product Supplier</div> <div>Lundgrens Norge AS</div> <div>Lundgrens is a complete supplier of hoses, couplings and injection equipment for the tunnel market.</div> <div><div>Odd Åsmund Nordli odd.nordli@lundgrens.no</div></div>	<div></div> <div>Consultant</div> <div>K. Garshol Rock Engineering Ltd</div> <div>Expert adviser in rock mechanics, rock support, ground water control and general tunnelling issues. Conflict and expert witness services.</div> <div><div>Knut F Garshol knut.f.garshol@gmail.com</div></div>	<div></div> <div>Product Supplier</div> <div>Pretec Group AS</div> <div>Pretec Group AS produce and offer high quality rock anchor bolts with particularly long service life using PC-Coat corrosion protection.</div> <div><div>Even Karlsen even@pretec.no</div></div>	<div></div> <div>Product Supplier</div> <div>Skum Tech AS</div> <div>Skum Tech AS delivers PE-foam shoot for prevention of water and frost in tunnels. Complete systems, including permanent bolt fixation to supported rock contour.</div> <div><div>Svein Jonsson svj@skumtech.no</div></div>	<div></div> <div>Product and service Supplier</div> <div>Stantroll</div> <div>30 years of experience from international tunnelling and provide product and services for rock stress measurements, blasting work and assistance on rock support.</div> <div><div>Roger Bjergeengen rps@stantroll.com</div></div>	<div></div> <div>Product Supplier</div> <div>Timer Solutions AS</div> <div>Timer Solutions AS delivers Water, fire, and frost -proofing tunnels and underground constructions in the most safe, environmentally, cost-effective and sustainable way.</div> <div><div>Morten Nesheim m.nesheim@tas.no</div></div>	<div></div> <div>Expert Adviser & Consultant</div> <div>Sovik Consulting</div> <div>Sovik Consulting provide expert advice and offer consultancy services in the field of infrastructure and tunnel and facilitate exchange of knowledge and experience.</div> <div><div>Arild Petter Søvik aric.sovik@sovikconsulting.no</div></div>	

Team of Experts in Santiago this week

Norwegian Tunnelling Network (NTN) companies provide a wide range of services in the field of development, design, construction, operation and maintenance of tunnels and underground facilities. NTN is established to provide commercial services to international clients and customers.



Mario Morales

Research Scientist
SINTEF
Department of
Infrastructure



Frank Finseth

Operations Manager
Devico AS



Ola Kvammen

CEO
Incitu AS



Thorvald Wetlesen

CEO
Bever Control AS



Anne-Lise Berggren

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**Henrik John
Steffens**

Business Development
Engineer
Cubility AS



**Ingrid Elisabeth
Fjelberg**

Geotechnical Adviser
Xcellence AS



**André Araujo
Silva**

Director of Business
Development
Emerald Geomodelling AS



Tomas Lindstrøm

M.Sc Soil and Rock
Engineering
Incitu AS



Arild Petter Søvik

CEO & Tunnel
Management Advisor
Sovik Consulting

Supporting Authorities & Clients

A MoU was signed between
The Ministry of Public Works of the Republic of Chile
and the Ministry of Transport and Communications, Norway

- In the field of Road Infrastructure
- In the field of Airports
- In the field of Ferry Ports

In 2009, the Ministry of Transport in Norway and the Ministry of Public Works in Chile signed a memorandum of understanding, where Chile & Norway agreed to cooperate and exchange knowledge and technology in the following fields: road infrastructure, Airports and Ferry ports, not excluding new areas of interests.



Statens vegvesen
Norwegian Public Roads
Administration

Public Client & Road Authority

Statens vegvesen

The NPRA is responsible to develop and operate large part of the road network, but also to develop and review standards and requirements.

BANE NOR

Public Client & Rail Authority

Bane NOR

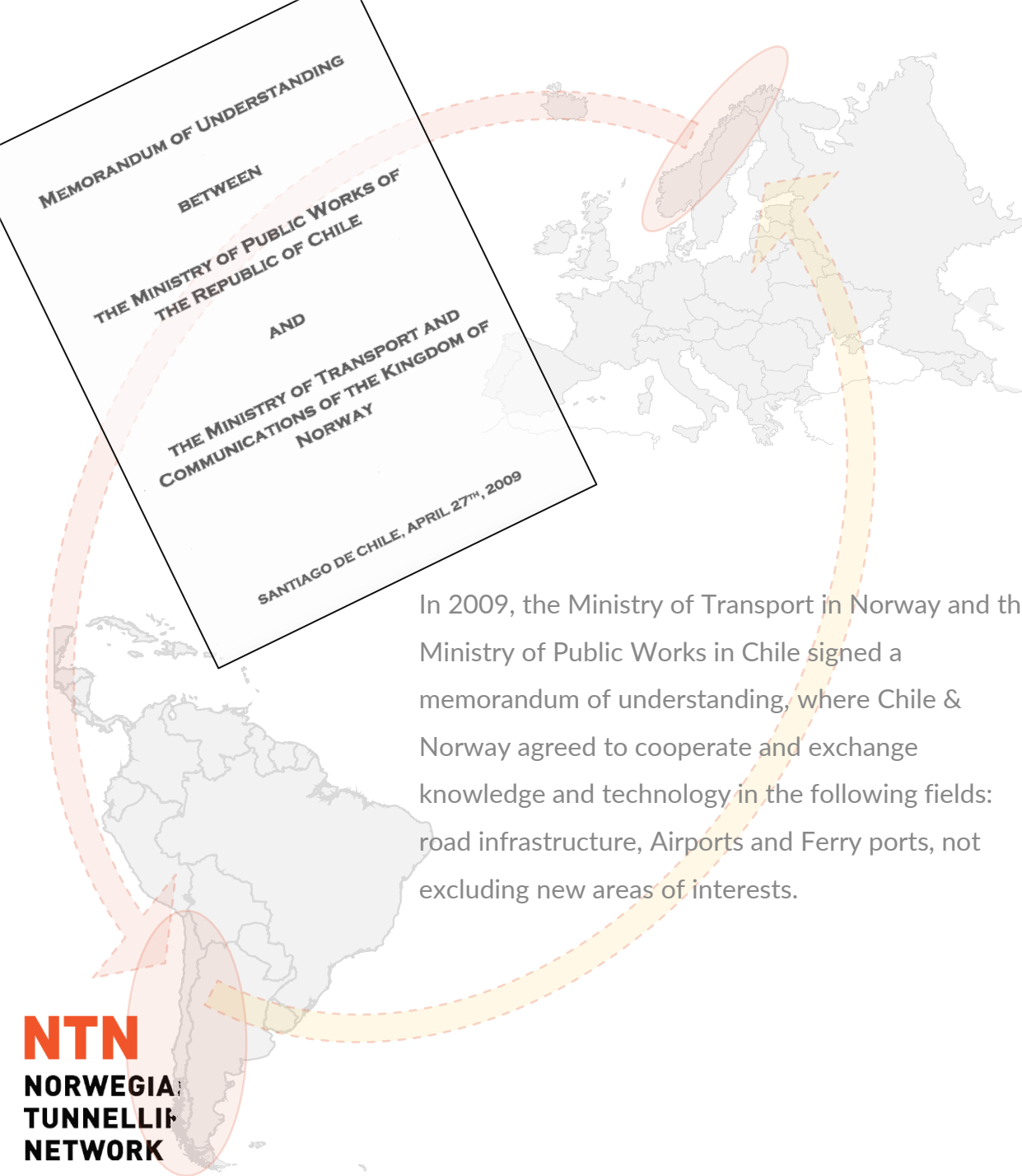
Bane NOR is owned by the state at the Ministry of Transport, and their social mission is to develop, build, operate and manage the national railway network.

NyeVeier

Public Client

Nye Veier AS

Nye Veier AS is planning, building, operating and maintaining traffic-safe main roads in Norway. A goal to reduce travel time, connect living- and labour market regions, and ensure traffic safety.



Preparatory travel to Chile (march 2022)

- Start a dialogue with authorities and key stakeholders
- Clarify administrative matters
- Clarify academic content
- Start a dialogue with universities
- Clarify and complete information in our market study
- Meeting with the Chilean Tunnelling Committee (CTES)
- Preparing to open an office in Chile



Market potential – Mutual interests

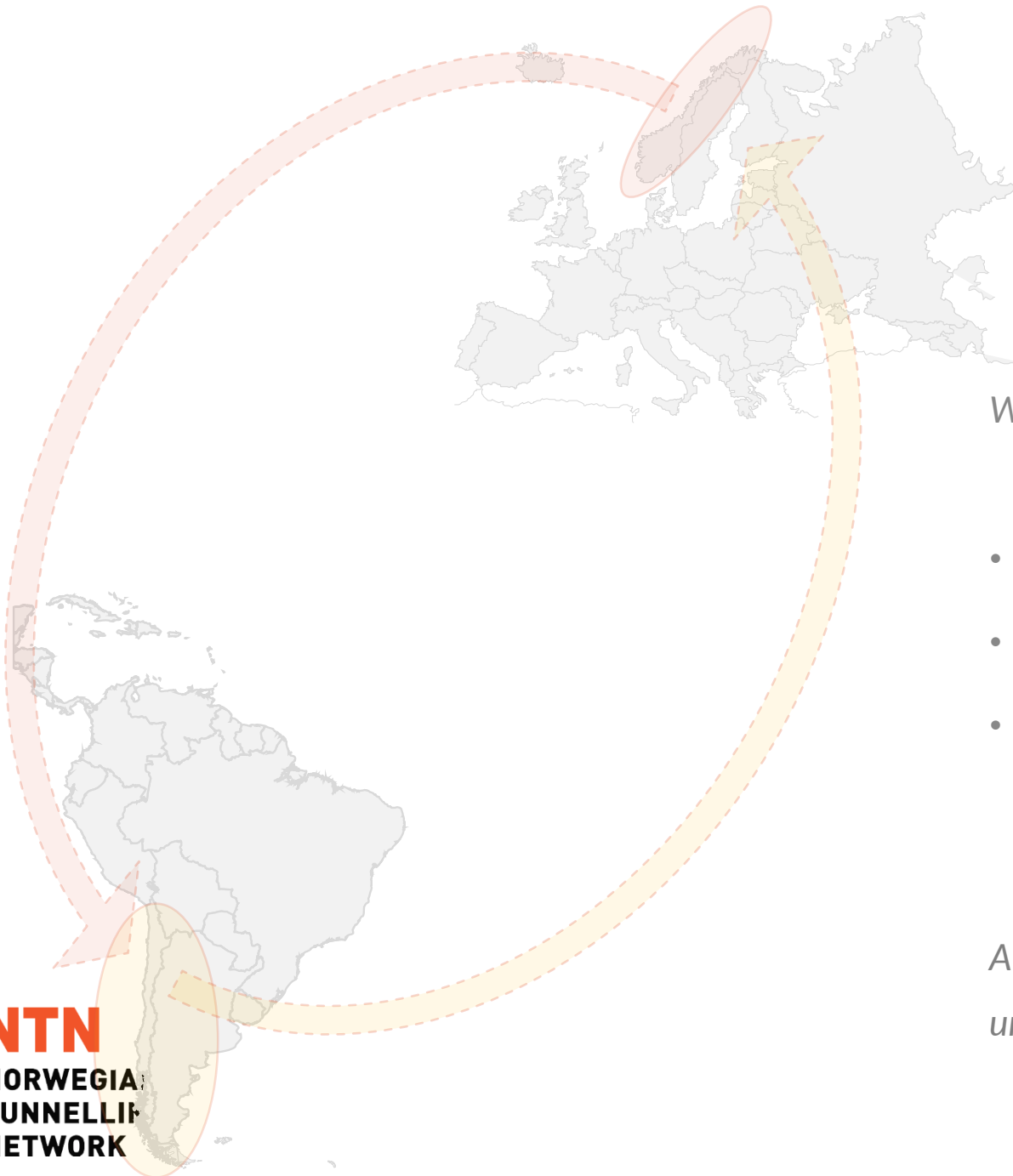
We have identified opportunities for both Norway and Chile :

- *increased trade,*
- *sharing technology, knowledge and experience,*
- *collaboration to meet new climate challenges and better sustainability in future projects.*

A mutual opportunity between two nations with a long tradition in underground works, and similar challenges and landscape.

NTN

**NORWEGIAN
TUNNELLING
NETWORK**



Market potential – Our opportunities

Norway is competitive and can offer unique competence and experience in:

- Tunnel and underground structures,
- Bridge and load-bearing structures,
- Digital planning and digital implementation in projects,
- ITS and digital control, regulation and monitoring.

Particularly relevant within 4 main types of deliveries:

- ✓ Academy (research and teaching)
- ✓ Advice, Consulting and engineering
- ✓ Product and technology deliveries
- ✓ Execution of assignments (contractor services)



NTNU



Norwegian Group



vital infrastruktur arena



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Noruega en Chile

Real Embajada de Noruega en Santiago de Chile

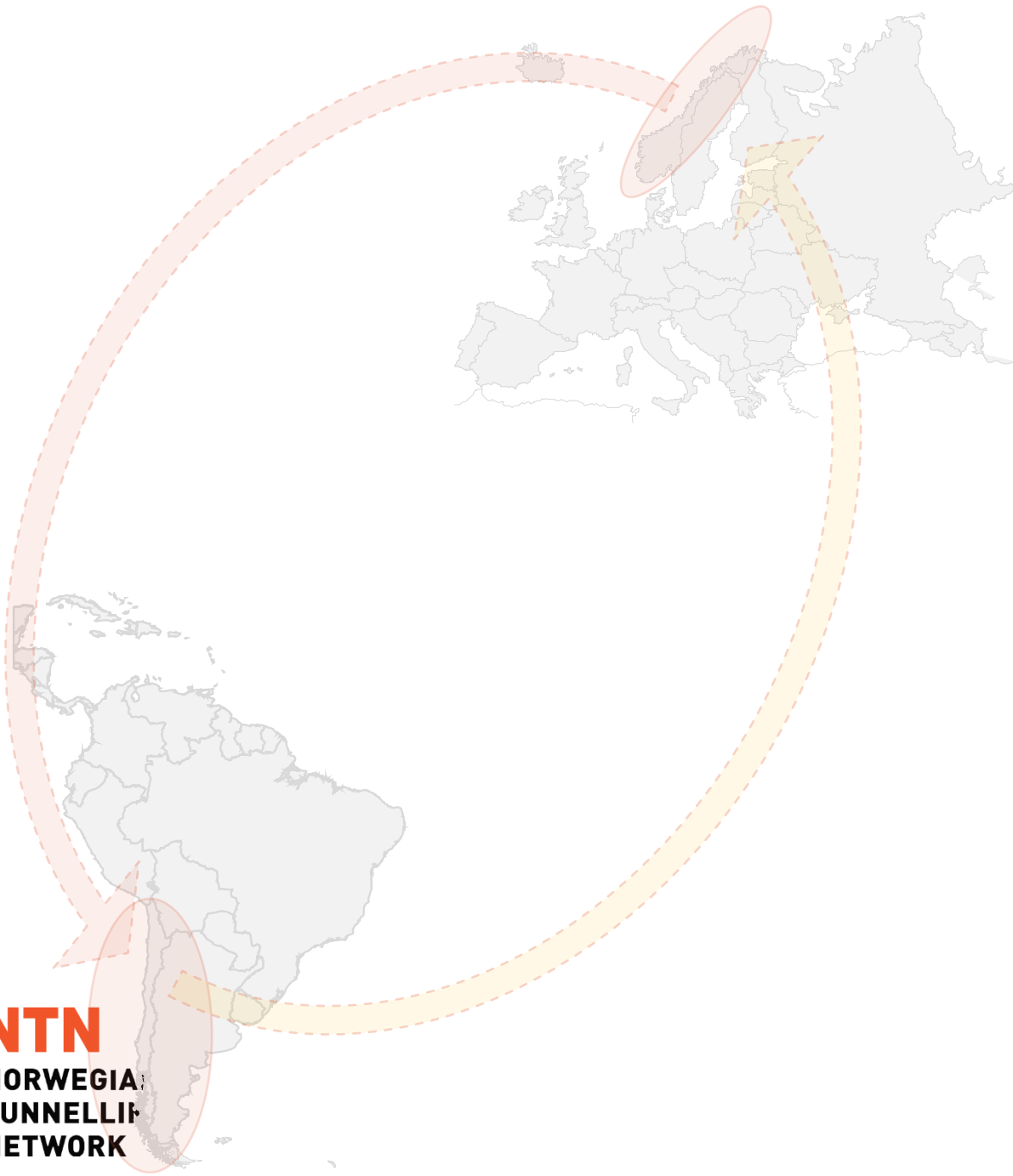
Opportunities for Cooperation

6 areas are identified as relevant and can provide important synergy effect in this project:

- ✓ Road infrastructure
- ✓ Railway infrastructure
- ✓ Mining industry
- ✓ Production of hydropower
- ✓ Water supply and drainage
- ✓ Caverns and use of underground space

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TUNNELLING
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Norway's contribution

Our philosophy are our strength

Our philosophy - Cost effective design, construction and operation:

- We have a history in thinking cost / efficient development of infrastructure in a challenging and demanding nature and scattered population
- Major infrastructure developments for more than a century:
 - from Rail from Bergen to Oslo (1883-1909) to E39 Ferry-free Connection Kristiansand - Trondheim (2021 - 2040)).
- Experience with the largest, longest, deepest and most complex projects in the world – and we plan to break all records in the coming years
 - Gaining more and more knowledge and experience (the National Transport Plan) - 120 Bn Euro to develop an efficient, environmentally friendly and safe transport system in Norway.
- >50 road tunnels under construction, >150 under planning at any given time, and >1500+ road tunnels in operation (64 longer than 4 km)

The E39 Rogfast tunnel will be the world's longest and deepest sub-sea road-tunnel. The tunnel is a 26,7 kilometer long and 390 meter deep twin tube tunnel with a complex infrastructure that include a intersection to one of the local islands and six longitudinal ventilation shafts.

Rogfast Tunnel
Under Construction
Norway, West-Coast, Rogaland

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Land of long tunnels – In Europe



Lærdal tunnel 24 km (worlds longest tunnel)



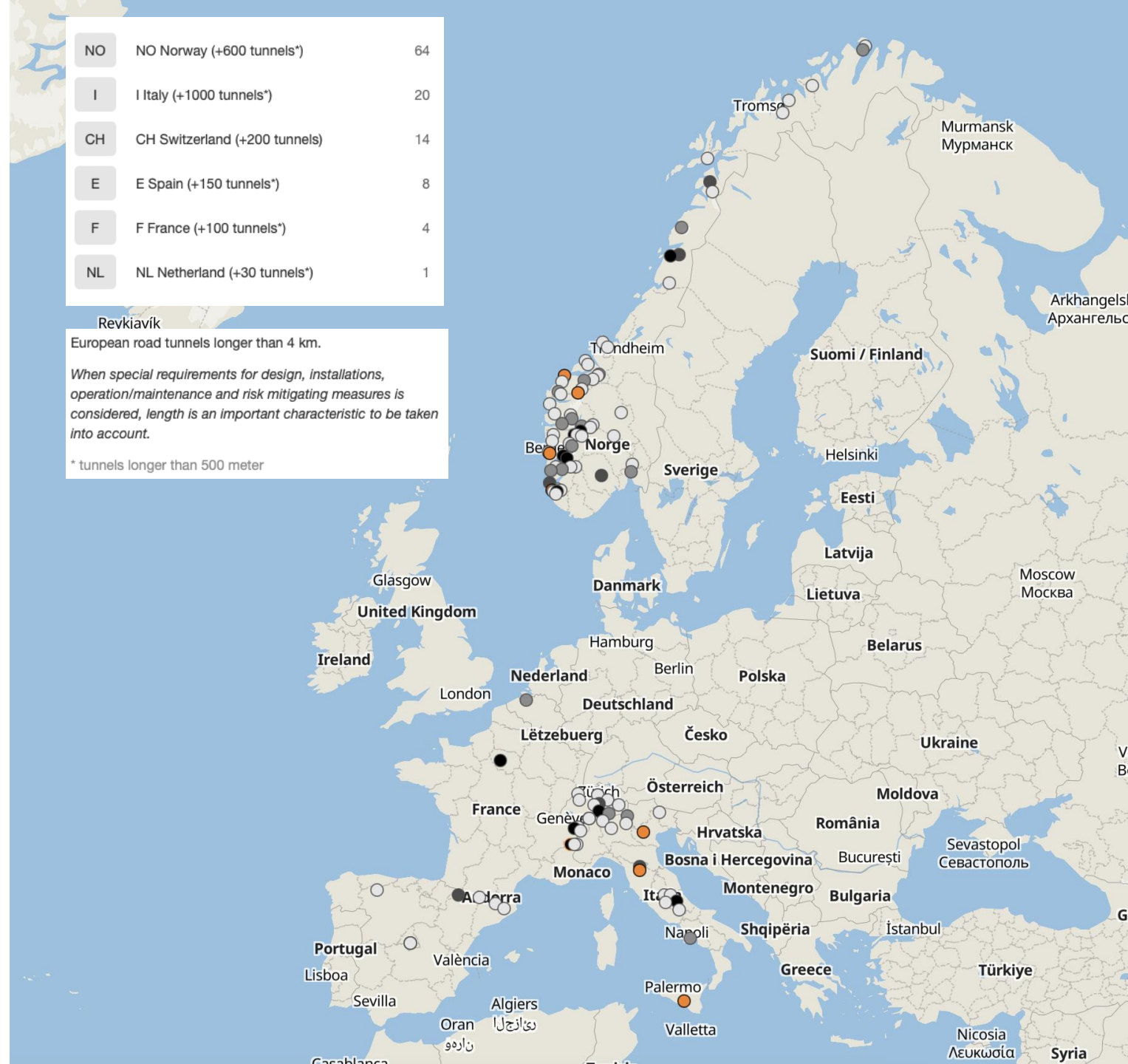
Rogfast tunnel (26,5 km) - Under construction

NO	NO Norway (+600 tunnels*)	64
I	I Italy (+1000 tunnels*)	20
CH	CH Switzerland (+200 tunnels)	14
E	E Spain (+150 tunnels*)	8
F	F France (+100 tunnels*)	4
NL	NL Netherland (+30 tunnels*)	1

Revkiavík
European road tunnels longer than 4 km.

When special requirements for design, installations, operation/maintenance and risk mitigating measures is considered, length is an important characteristic to be taken into account.

* tunnels longer than 500 meter



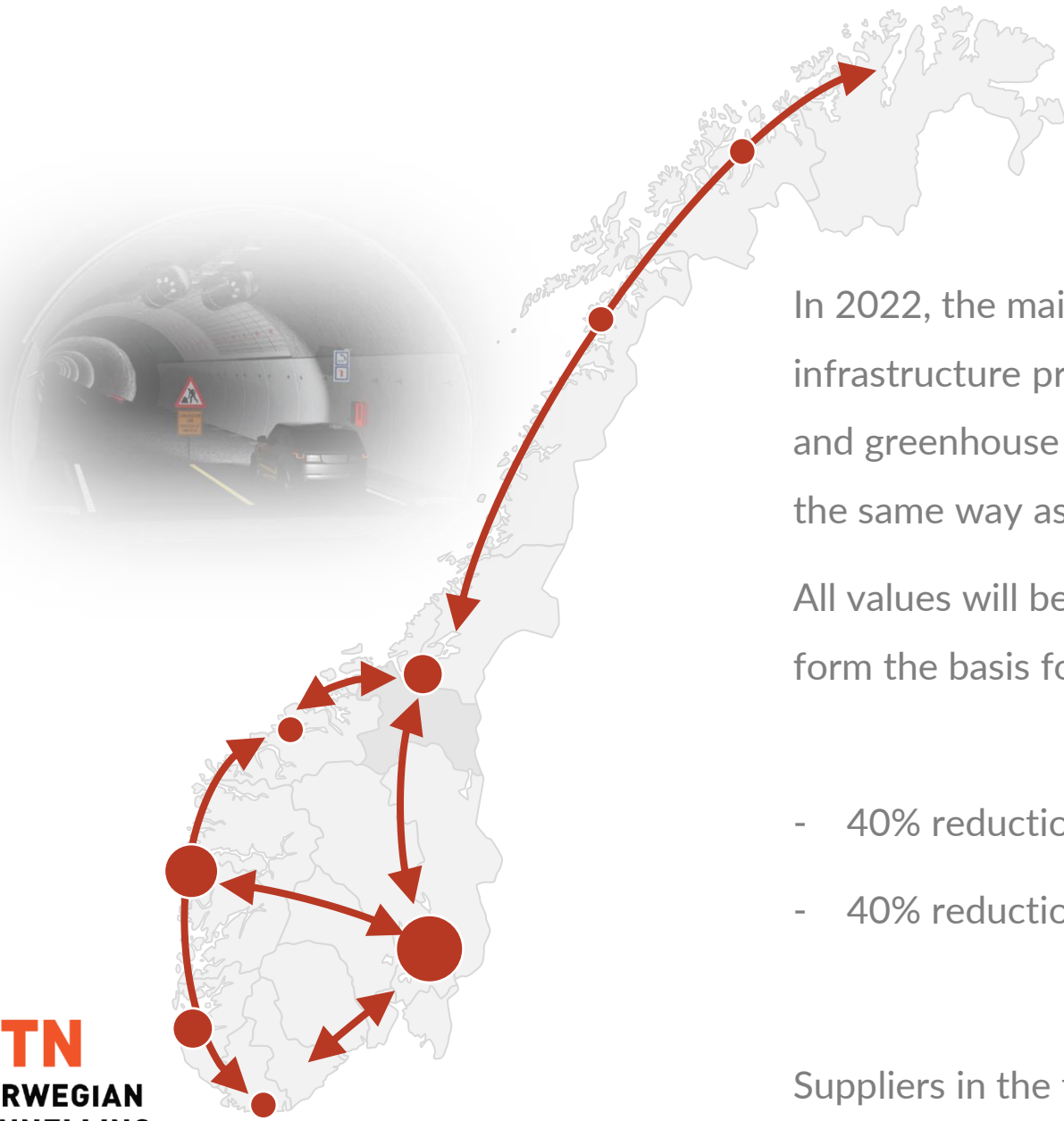
Recent experience – just as important

In 2022, the main objective in Norway is to increase the cost-effectiveness in infrastructure projects, where consideration of environment costs, climate risk and greenhouse gas emissions are included in the profitability calculations in the same way as financial expenses, purchases and income.

All values will be considered and weighed in the socio-economic *picture* that form the basis for recommendations and decisions.

- 40% reduction of climate risk and greenhouse gas emissions
- 40% reduction in costs

Suppliers in the tunnelling industry will provide services and products for a sustainable future



What is cost-effective project implementation?

- Our regulations differentiate between low traffic and urban high traffic tunnels
- Choose the tunnelling method that is best suited for the geological conditions, but also other factors can influence.
- Choose a safety/ventilation strategy based on acceptable risk and best suited for a cost-effective design and operation.
- Choose a cost-effective way to implement control and monitoring systems (ITS)
- Choose a cost-effective distribution of Traffic Control Centers and a cost-effective operational and maintenance (contracts)

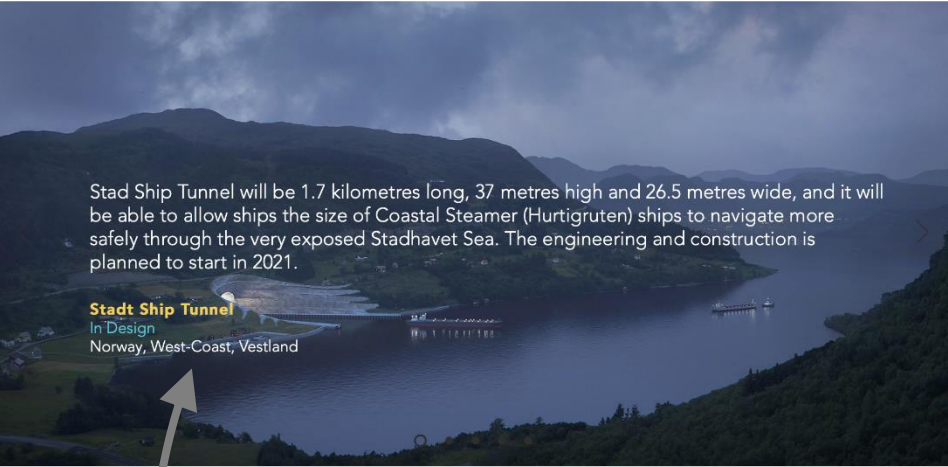
Remember always: The guidelines for building infrastructure must ensure a correct level of investment, both for the road network in general and in tunnels. Often, the risk on the open road are higher than the risk in tunnels ..





Example: Using a concrete wall element in combination with membrane/sprayed concrete





Stad Ship Tunnel will be 1.7 kilometres long, 37 metres high and 26.5 metres wide, and it will be able to allow ships the size of Coastal Steamer (Hurtigruten) ships to navigate more safely through the very exposed Stadhavet Sea. The engineering and construction is planned to start in 2021.

Stadt Ship Tunnel
In Design
Norway, West-Coast, Vestland

Norway's contribution

Other statistics



Hydropower:

Europe's largest and the world's seventh largest hydropower producer. This is also, besides oil and gas technology, one of the few areas where Norway are among the world's technological leaders.

- In Norway, 90 percent of all power production comes from hydropower. Norwegian hydropower is Europe's "renewable battery" and almost 50 percent of Europe's hydroelectric storage capacity is in Norway.

Ship tunnel:

- **Stadt Ship Tunnel** will be 1.7 kilometer's long, 37 meters high and 26.5 meters wide, and it will allow large ships to navigate pass a safer route inside the exposed Stadt sea.

Rail infrastructure:

- About **700** rail tunnels in operation, many new projects and railway upgrades will be invested in the coming years.

LATEST NEWS



Norwegian Tunnelling
Society at the World
Tunnelling Congress 2022

In September 2022, the Norwegian Tunnelling Society, including the



The Chilean tunnelling industry - visits Norway

In August 2022, the Chilean Tunnelling Committee (CTES), including public clients and officials, visited Norway t...



Successful meetings with stakeholders in Chile

In march 2022, Norwegian Tunnelling Network, together with Innovation Norway and NTNU/SINTEF met...



The Chilean tunnelling industry - visits Norway

In August 2022, the Chilean Tunnelling Committee (CTES), including public clients and officials, visited Norway t...

The mayor of Mo i Rana welcomed us to dinner at Stenneset. A representative house for the municipality, and a place with a long mining history.

In Stavanger, we had a closer look at the construction of the longest (26,5 km) and deepest (390 m) subsea tunnel in the world, E39 Rogfast. The project management (The Public Road Administration), learned us more about planning and constructing complex subsea tunnels. The Norwegian University of Science and Technology (NTNU) introduced us to challenges and opportunities in planning fjord crossings and implementing subsea tunnels. Later the same day we had a closer look at the recently opened world longest subsea tunnel, Ryfylke tunnel (14,4 km/290 m).



Later, the delegation visited E39 H... the new contract model, using t... requirements and adopted zonin...

In Flekkefjord, we visited AMV AS, which is specialized in building innovative tunnel machines, suited all tasks in tunnelling and mining projects. Bever Control, which is a specialist company providing computer based guidance and control systems for drilling jumbos, told us more about digitalization of machi... and mining in...

The project management from El Teniente (Codelco), the largest underground copper deposit on the planet, gave us an introduction to this mega project. The introduction started in 1905 and contains of more than 4,500 kilometers of mining galleries. An increased use of tunnels are under planning, and there are set ambitious goals for cost efficiency, and sustainability in their



Health, Safety and Environment, but also new requirements for sustainability in their operations.

Lundgrens/GMA gave us an insight in how the industry in Norway work on special products to solve specific challenges in projects. Foamrox AS, introduced the participants to products using recycled glass to replacing concrete, to achieve demanding goals for a sustainable future. Trafys AS gave us a demonstration of the systems at the Traffic Control Center (TCC) in Norway, introducing the Norwegian Way of Working, using one TCC to operate all tunnels in a region. A cost-effective philosophy to reduce cost and ensure high quality for all operational services on a road network. INCITU concluded the event by introducing the characteristics and possibilities of the Norwegian tunnel method.

Present on this visit from Chile, we had experts from both SINTEF and Incoit AS, representing hands on knowledge and experience from tunnelling and mining in Chile/Norway. An important contribution to the program, giving us insight to challenges ahead whenever innovation is implemented in a new culture.



The project manager and his team in the joint venture, Implenja Norge AS og Stangeland Maskin AS, started among other things a fruitful discussion on contracts and implementation, and the Norwegian Way of Working in a contractor perspective.



In Sandnes, we had a technical visit at the Cubility test center, where Cubility AS, NGI, Emerald Geomodelling AS and Protan AS told us more about methods and technologies in tunnelling and mining. On our way to Bergen, we experienced the typical west coast, a road infrastructure with long subsea tunnels, bridges and ferries, and we discussed matters of interests concerning operation and safety in road tunnels.

In Bergen, the Public Road Administration and Sweco AS, presented challenging projects including the connecting route between Bergen and Voss (E16 Vossabanen) and the Bergen Light Rail (building step 4). The Public Road Administration gave us an insight in a multi complex road/rail tunnel project, with specific challenges in urban projects, and how they use state of the art technologies and Building Information Modelling (BIM) in all phases of the projects, including 'use of technology and...'

The largest iron pr... iron ore on the A... Atacama and C... and growth. / projects.

Next step

In the first discussions between industries, we have identified several opportunities and topics to focus on in the cooperation with the Chilean tunnelling and mining industry.

In September 2022, we invite Norwegian stakeholders and suppliers to Santiago to meet universities, research organizations, clients and the entire Chilean tunnel industry, to discuss projects, methods, technology and latest experiences from Norway and Chile. Focusing on selected topics and bringing the discussions, already started, to the next step. The market introduction week in Santiago Chile, will also contain a seminar (27th - 28th September), and we will focus on low traffic road/rail tunnels and tunnels in mining, and learn more about methods, technology and latest experiences in Norway & Chile.

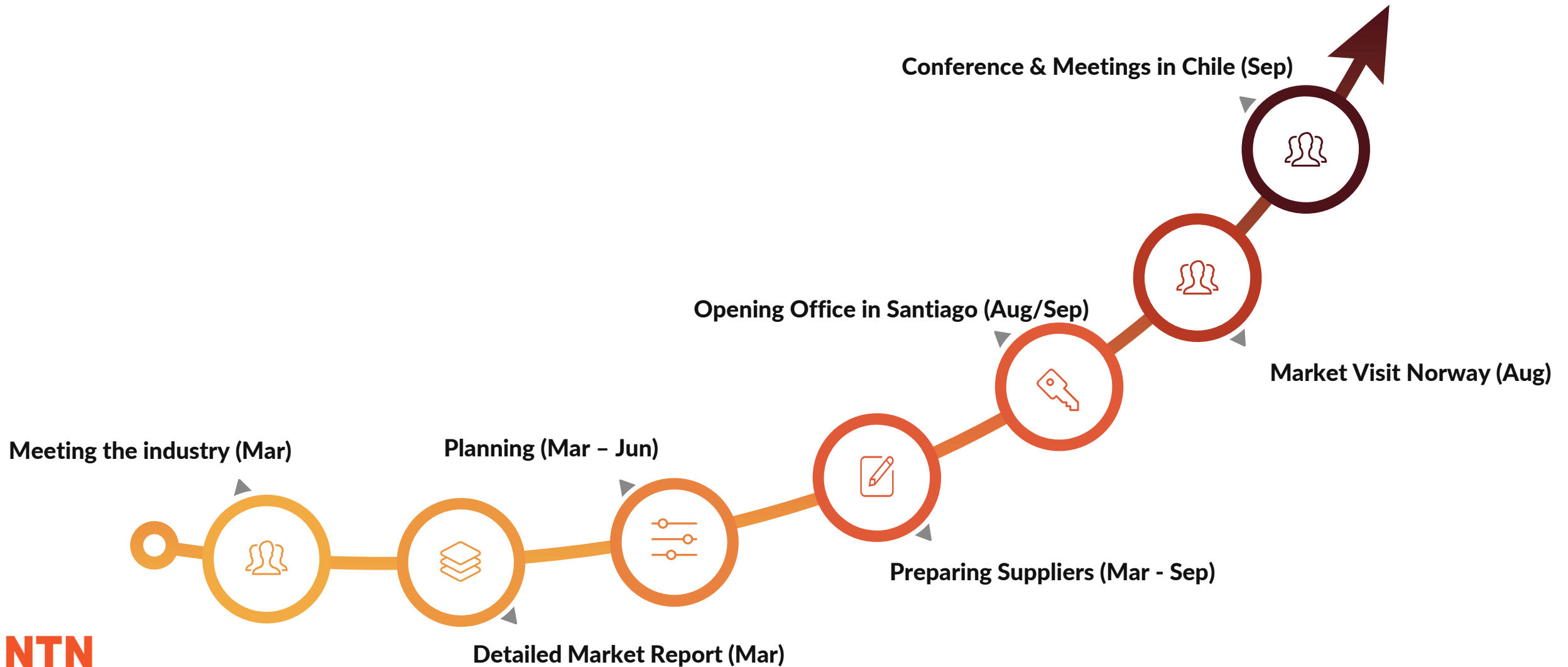
What is HPO?

High Potential Opportunities (HPO) is a new demand driven export program where Team Norway at large (public business support institutions, ministries, embassies, business clusters and business organizations) will assist Norwegian companies to win big international commercial contracts (above 500 mill NOK). Together with Team Norway, Innovation Norway has a central role in finding, validating, executing and coordinating public support and assistance.



[LINK TO ARTICLE](#)

Market Activities – HPO Chile 2022



Activities in HPO Chile

March 2022 – March 2023

- ❖ Preparing Market implementation Nov. 2021/ Mar ✓
- ❖ **Preparatory Visit to Chile** Mar. ✓
- ❖ Detailed Market Report Mar. ✓
- ❖ Information meetings Mar. ✓
- ❖ Planning Visits and conferences Apr. to Jun. ✓
- ❖ 1st Joint meeting in Global Growth Week 23-25 ✓
- ❖ Opening Office/ Joining CTES Week 35 ✓

- ❖ Individual follow up Week 34-37 ✓
- ❖ **Chile Visit to Norway** 22nd Aug. to 1st Sep. ✓
- ❖ 1st Market visit/ Conference 26th to 30th Sep. ✓
- ❖ **Follow up leads and market initiatives** Week 42 →
- ❖ Start up Academic activities Week 44 - 45
- ❖ 2nd Joint Meeting in Global Growth Week 47-48
- ❖ 2nd Market visit/ Seminar in Chile Mar. 2023
- ❖ 3rd Joint Meeting in Global Growth Apr. 2023
- ❖ 2nd Chile visit to Norway? Jun. 2023

NORUEGA / CHILE
Seminario de Túneles
27 - 28 Septiembre 2022



¡Bienvenidos!

En septiembre los invitamos a un Seminario Chileno-Noruego de Túneles de dos días donde aprenderemos más sobre métodos, tecnología y las últimas experiencias de Noruega y Chile.

Nuestro objetivo es iniciar un trabajo conjunto entre ambos países para buscar oportunidades de colaboración en materia de túneles.

El seminario contará con actores claves de la industria, incluyendo clientes públicos y privados, centros de investigación, universidades, consultores, contratistas y proveedores.



LUGAR
InterContinental Chile
Av. Vitacura 2885, Las Condes, Santiago

27 Septiembre 10h00 - 17h00
28 Septiembre 09h00 - 14h00

Te invitamos a un cóctel
27 Septiembre 19h00
Residencia, Real Embajada de Noruega

NTN
NORWEGIAN
TUNNELLING
NETWORK

Norwegian Tunnelling Network en colaboración con Innovation Norway ha iniciado un proyecto llamado "High Potential Opportunities" (HPO - oportunidades de alto potencial), que es un nuevo programa de colaboración donde el sistema público y privado se unen para promover vínculos de largo plazo con autoridades, universidades y actores de la industria en Chile.

NORWAY / CHILE
MARKET INTRODUCTION WEEK
26th - 30th September 2022



Save the date!

In September we invite Norwegian suppliers to Santiago to meet the Chilean tunnel industry and discuss projects, methods, technology and latest experiences from Norway and Chile. We aim to start a collaboration between Norway and Chile and facilitate market entries.

We invite key industry stakeholders, public & private clients, science & research institutions, universities, engineering & design consultants, contractors and suppliers in the tunnelling industry.



Norwegian Embassy



	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Morning		Meetings: • Global Growth • Universities • Industry	Seminar Session 1	Seminar Session 5		
Lunch			Seminar Session 2	Seminar Session 6	Project visit	Project visit
Afternoon	Global Growth preparation meeting	Meetings: • Global Growth • Universities • Industry	Seminar Session 3	Seminar Session 7	Meetings	
Evening	Global Growth Dinner	Dinner Norwegian delegation	Seminar Session 4		Odfjell Vineyards	Project visit
			Reception Norwegian Embassy		Odfjell Vineyards	

The market introduction week will be a combination of meetings with the industry, a tunnel seminar, networking and technical visits.

Growth participants and representatives from academia & research will have customized activities all week. The HPO participants, will have the opportunity to present themselves in the tunnel seminar, but also opportunities to meet the industry on Monday and Tuesday, in addition to networking activities connected to the seminar, vineyard visit and technical visits on Friday.

All HPO participants have the support from our project team, all week.



NTN
NORWEGIAN
TUNNELLING
NETWORK

Norwegian Tunnelling Network in collaboration with Innovation Norway have started a High Potential Opportunities (HPO) Project, which is a new demand-driven export program where the entire Norwegian support apparatus contribute to increase Norwegian exports and support a long term cooperation with authorities, universities and industry actors in Chile.

Santiago de Chile
26th - 30th September 2022

Including tunnel seminar:
27th - 28th September

Reception - Norwegian Embassy
27th September

Odfjell Vineyards
29th September 14h30 - 18h00

Technical visits
29th - 30th September

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Norwegian Tunnelling Network

High Potential Opportunity Project (HPO)

Instrument for increased exports, international investments and increased knowledge and technology cooperation