Honningsvåg STS for LNG
A solution provided by Tschudi Arctic Transit through commitment by the whole Tschudi Group
Business Areas

Shipping, Logistics and Offshore Activities

- Particular focus on the Baltics, Russia, CIS countries and Northern Regions of Norway and Russia.
- Shipping, Logistics and Offshore – joint transport solutions by drawing on internal resources.
- Owns an iron ore mine, real estate and port facilities in Kirkenes.
- Major regional producer of aggregates in Northern Norway for customers in Russia and Northern Europe.
- Experienced Arctic logistics operator, primarily STS operations and NSR transit.

Tschudi served BP on a FSO operation in Angola on contract between 2011-2016 with tugs and standby vessels.
Logistics/Management Activities

Tschudi Logistics
Logistics company focuses on project cargoes and door-to-door transportation of containerised goods. Offices in 8 countries - focus on Northern Europe, Russia and the CIS.

Tschudi Ship Management
Technical management of 13 vessels for third parties and providing crewing services for 27 vessels. Multi-lingual support. Wide-ranging experience including MPP/container vessels, tankers, DP3 ice breaker, DP2 offshore support and windmill installation vessels.
North Norwegian Activities

Boreal Maritime
Manning services in Northern Norway and owner of three vessels serving on offshore oil-spill emergency contracts, port repair projects and serving the North Norwegian fish-farming industry.

Tschudi Kirkenes + Sydvaranger Iron Ore Mine
Owns land/real-estate and operates the bulk port in Kirkenes, and exports aggregates to the region. The iron ore mine (largest in Norway) is in the process of being reopened after its 2015 closure and Tschudi acquisition.
Tschudi Arctic Transit

Key Highlights

• Impeccable efficiency and safety record from oil transshipment operations in Arctic waters.

• Several locations in Honningsvåg with the possibility of 3 parallel operations.

• Oil, gas and shipping service cooperation agreement with the Municipality of Nordkapp (Honningsvåg).

• Several strong local footholds in Northern Norway: Skjervøy, Honningsvåg and Kirkenes.

• Offers services of approved and well qualified mooring masters. Provides necessary emergency preparation equipment, hoses, fenders and tug services during oil transshipment operations.
Tschudi Arctic Transit

Highlights: the longest transshipment experience in Northern Norway

2005
- Obtained transshipment permits (first in Norway) and began transshipment operations for Novatek in Bøkfjorden, Kirkenes.

2006
- Transferred operations to Sarnesfjorden (Honningsvåg) due to operational/permitting uncertainties in Kirkenes (the national salmon fjord issue).

2009
- 28 condensate transshipments in Honningsvåg for Novatek.

2011
- Transshipped a Suexmax tanker with condensate for Novatek for transport via the Northern Sea Route (NSR) with Sovcomflot.

2014
- Crude oil transshipments for Lukoil
  - Loaded 52 off-takers
  - Discharged 67 shuttle tankers
  - Total 101 operations
  - Total 4.8 mill. tons = 34 mill. US barrels
  - Average 110.000 bbls/day
  - Approx. 6 mill. tons transferred, occasionally using a storage tanker

2015
- Proven continuous permit holder with a strong safety record and a well-known local employer in Honningsvåg.

2018
-
Tschudi Arctic Transit
Drawing on all Tschudi Group Resources and Associates

Safety and Quality
- Lars Christian Aasen
  SHEQ Director, Tschudi Group

Logistics
- Tschudi Logistics Holding AS and Subsidiaries

State Authorities
- Norwegian Directorate for Civil Protection
- Norwegian Coastal Administration
- Municipality of Nordkapp/port authority
- Norwegian Environment Agency

Local Support/handling and maintenance/ Emergency preparedness
- TAT local site manager/operations
- Local suppliers
- Boreal Maritime, Skjervøy (backup support vessels and local staff)

Finance/Accounting
- Ivar Puusta
  Finance Manager, Tschudi Group

Partners/Subcontractors
- DNV GL
  Risk analysis for permitting
- BOA Tugs + TBN
  Tug providers
- Nordkapp Godsterminal AS
  Shipping Agency
- LNG STS UK
  LNG advisor/equipment suppliers

LNG STS Operations
- LNG STS UK
  Cargo operations/advisory
- 6 Mooring Masters
  Contracted, TAT pool

Technical Support Marine Operations
- Capt. Paul Mengelder (Tugs)
- Capt. Tor Bowitz (Tankers)
- Tschudi Ship Management, Tallinn
  (Russian speaking technical support)
Honningsvåg Location

Tschudi Arctic Transit

- 4 Ship-to-Ship (STS) transhipment positions are designated in Honningsvåg, enabling three parallel operations.
- Tschudi will be the operator responsible for acquiring and complying with the necessary permits, owning STS equipment, chartering tugs, hiring LNG STS expertise (Teekay).
Her kommer det et kart over Sarnesfjorden og Kåfjorden

STS 2
STS 1
STS 3
STS 4
LNG Ship-to-Ship

Ship-to-Ship offshore transfer systems for LNGC to FSRU

KLAW LNG is the world leader in safe LNG transfer systems.

Hundreds of LNG commercial transfers are safely and efficiently conducted every year using KLAW LNG technology.

The care and diligence demonstrated in both the design of the system and the commissioning of KLAW LNG is what helps to protect the reputation of not just the LNG Ship Owner and Operator but also the reputation of the LNG sector as a whole.

Efficient transfer of LNG

KLAW LNG systems provide the most advanced and reliable technology available to safely minimise your hose transfer times and maximise return.
LNG Ship-to-Ship system components

**Minimising risk of spill**

KLAW LNG transfer systems minimise the risk of LNG spillage by shutting down flow of LNG when an emergency occurs during transfer. The KLAW LNG safety system will maintain the integrity of the closed system and keeping the medium within the transfer system means you maintain control over the event.

KLAW LNG systems help protect assets such as ships, hoses and equipment. Risk of injury to personnel in the immediate area is minimised and risk of contamination to others and the environment is also greatly reduced.

**Reducing risk in LNG management and transfer**

KLAW LNG transfer systems offer solutions to a particular segment of the overall process of offshore LNG processing and management. This is the transfer system used during LNG Ship-to-Ship, Ship-to-Shore and Bunkering operations.

Protection against risk requires a continuing process of risk assessment and risk management and it is this process that is integral to the design of KLAW LNG systems.

**Emergency Release Coupling**

The KLAW LNG ERC provides an identified parting point within the transfer system. In a controlled release, the valves within the ERC will close; providing 100% fail-safe closure of both halves.

The ERC will then separate. This relieves stress on the transfer system therefore protecting assets, the environment and personnel.
Our Approach:

- When we were invited to tender we established a project team defining the project parameters
- We worked closely with DNV-GL for risk analyses
- We worked closely with, and not against, Norwegian Authorities when applying for the required permits.
- The permits and the operating parameters related to these reflected our Hazardous operation analyses, the Norwegian legislation and the experiences gained through previous operations with other Hydrocarbons
- The project was well founded in the whole Tschudi Group organization including CEO and Chairman/Owner
- The Tschudi Group CEO «seconded himself “to the project full time to secure timely and proper execution
- We sourced our best internal resources for project execution as needed
- We hired the most reputable external consultants and sub contractors when needed (Teekay Marine/LNG STS, DnV GL, Boa, Bugser & Berging)
- We buy locally when possible
- A task with very stringent quality and safety requirements considered impossible to deliver on time is being delivered on time because of full commitment from the whole Tschudi Group Team and supporters
- This commitment is well founded in our Group and build on 135 years of treating employees with respect and offering opportunities. The strong and loyal Tschudi Team is our absolutely biggest asset
Important Supporters and Partners:

Nordkappregionen Havn, the Municipality, Nordkappregionen Næringshage and the local business community – working 24/7, the directorates involved in licensing, police and pilots and all the friendly and supportive people you meet on every corner expressing their consent and support.
Takk for oppmerksomheten!