Shipping in Arctic Waters

The Northern Sea Route

Mariehamn, April 26th. 2012
- In 2006, Tschudi Shipping Company bought the closed down iron ore mine in Kirkenes, Northern Norway.
- In November 2009 the first Panamax loaded for China with 75,000 of cargo.
- In September 2010 we did the first transit through the Northern Sea Route.
- Production in 2011 was 1.5 million mt with forecast for 2012 at 2.0 million mt.

The company Northern Iron is listed on the Australian stock exchange (ASX) Ticker code NFE  www.northerniron.com.au
Tschudi controls abt. 20% of the outstanding shares today.
Tschudi Kirkenes
Our Bulk Terminal in Kirkenes is able To load vessels up to 100 000 dwt
In addition we have:

- 6 000 m² quay with draft of 8,2 m
- 5 000 m³ covered warehouse
- 370 000 m³ silo storage
- 1 000 000 m² levelled area for further development

20 km from Russian Border
We like to see the Earth from this Direction

Our Location in Kirkenes, Northern Norway
Kirkenes
9 days from the Pacific Ocean
9 days from the Mediterranean
Arctic Ocean
Northern Sea Route - 2011

• 34 vessels (# 4 in 2010) 10 in ballast and re-positioning.

• Largest vessel ever, 160 000 dwt Suezmax loaded with 120 000 mt of gascondensate.

• Largest bulkcarrier, 75 000 dwt Panamax loaded with iron ore.

• Speed record, 14 knots and 8 days

• Gascondensate from Russia to China and Jetfuel from Korea to the Continent. Same vessel using the NSR both ways.

• First Seismic vessel

• First international Cruise vessel.
The Northern Sea Route

Savings are too large to be ignored

Kirkenes – Suez – Yokohama
Kirkenes – NSR – Yokohama
Savings

41 days
19 days
22 days
Savings per tonn of cargo
(comparing same size of vessel)

1. Timecharter per day usd 15 000 * 22
   usd 330 000
2. Bunkers fuel 33 * 700 * 22
   usd 508 000
3. Bunkers diesel 1 * 950 * 22
   usd 21 000
4. Suez cost
   usd 180 000
5. NSR tariff 5 * 40 000
   (usd 200 000)

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Savings                     usd 839 000

Savings p/t basis 40 000 t  usd 21,00
Savings in USD for 21.4 days saved in time.

**LNG from Melkøya to Yokohama - 147 000 cbm**

**Full round voyage - Spot market rate – usd 15/mmBtu**

- Timecharter per day usd 150 000 * 21.4 * 2 = usd 6 420 000
- Bunkers burn off lng 0.1% per day * 21.4 * 2 = usd 2 200 000
- Suez round voyage cost = usd 150 000
- NSR tariff usd 5 * 59 500 mt + usd 3.5 * 59500 = (usd 506 000)

**Savings** = usd 8 264 000
• Add 3 roundtrips per season and you get a total of USD 25 million.

• Add that Yamal is another 8 days (roundtrip) better positioned.

Then we all understand that we are talking about unlocking the High North in general and Siberia in particular.
Potential Savings

Going East:

NSR  usd 21
Plus/minus railtariff  usd ??

Total savings  usd ??

Going West:

The distance from Rotterdam is the same to Kirkenes and Kemi (11 naut.miles diff.)
ICE CLASS TONNAGE

**NEGATIVE**
- More expensive to build
- Higher fuel consumption
- Less cargo intake

**POSITIVE**
- Get extra paid when in ice, - NSR complement the Baltic ice season
- 18 days saved * 20 years technical life time = 1 year extra trading
Let’s go back to KIRKENES
The Barents region - An area of opportunities

**Industrial minerals for:**
- Fertilizers
- Paper industry
- Chemical industry
- Glass and ceramics
- Paint industry
- Agriculture
- Construction
- High-tech applications
- Diamonds

**Energy minerals:**
- Uranium
- Thorium
- Peat

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

**MINES:**
- Sydvaranger
- Norilsk Nikel
- Nikel
- Zapolyarny
- Monchegorsk
- Severstal
- Oleneogorsk
- Karelia
- Cheropovets
- Appatity
- Kovdor
- Kitala
- Pajala
- Sodankyla
- Sokli
- LKAB
LNG from Melkøya

40 ’ container loading 25 mt of LNG.
1 ton LNG = 14 000 kwh
Direct transshipment from vessel to container
LNG TRAIN

• Supply from Norway and/or Russia
• Railroad being used in both directions
• No need to electrify the railroad
• Much better flexibility than a pipeline
Join us and look for opportunities in the High North!