

**Henrik Falck
Tschudi Shipping Company AS**

**VOYAGE CALCULATION
Status, Challenges and Opportunities**

St. Petersburg, April 11th. 2013

TSCHUDI SHIPPING COMPANY AS

Tschudi Shipping Company AS is the holding company for the Tschudi Group with roots back to 1883.

The Tschudi Group is a shipping and logistics group with particular focus on the east west trades of cargoes and projects involving the Baltic, Russia and the CIS countries including the Northern Regions of Russia and Norway.

The Tschudi group currently owns a fleet of 16 multipurpose container vessels, tugs and offshore vessels in addition to operating container lines between northern European ports in the Baltic and North Sea.



Sydvaranger Gruve – Northern Iron

www.sydvarangergruve.com

- 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 2012 was 2,0 mill. mt with forecast for 2013 at 2,9 mill. mt.

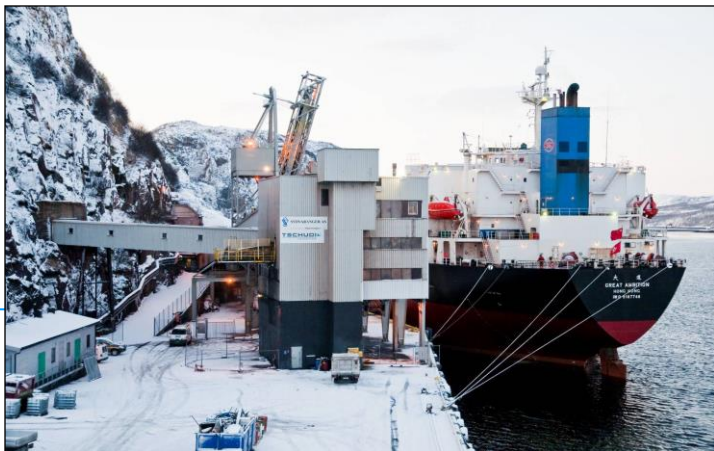
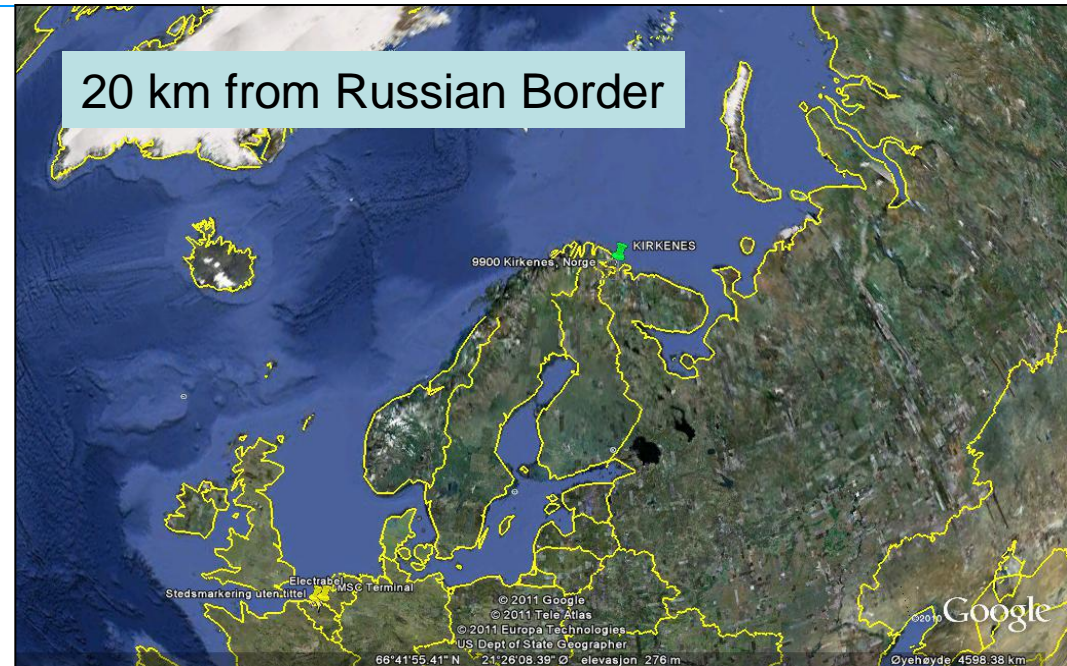


The company Northern Iron is listed on the Australian stock exchange (ASX)
Ticker code NFE www.northerniron.com.au
Tschudi controls abt. 20% of the outstanding shares today.

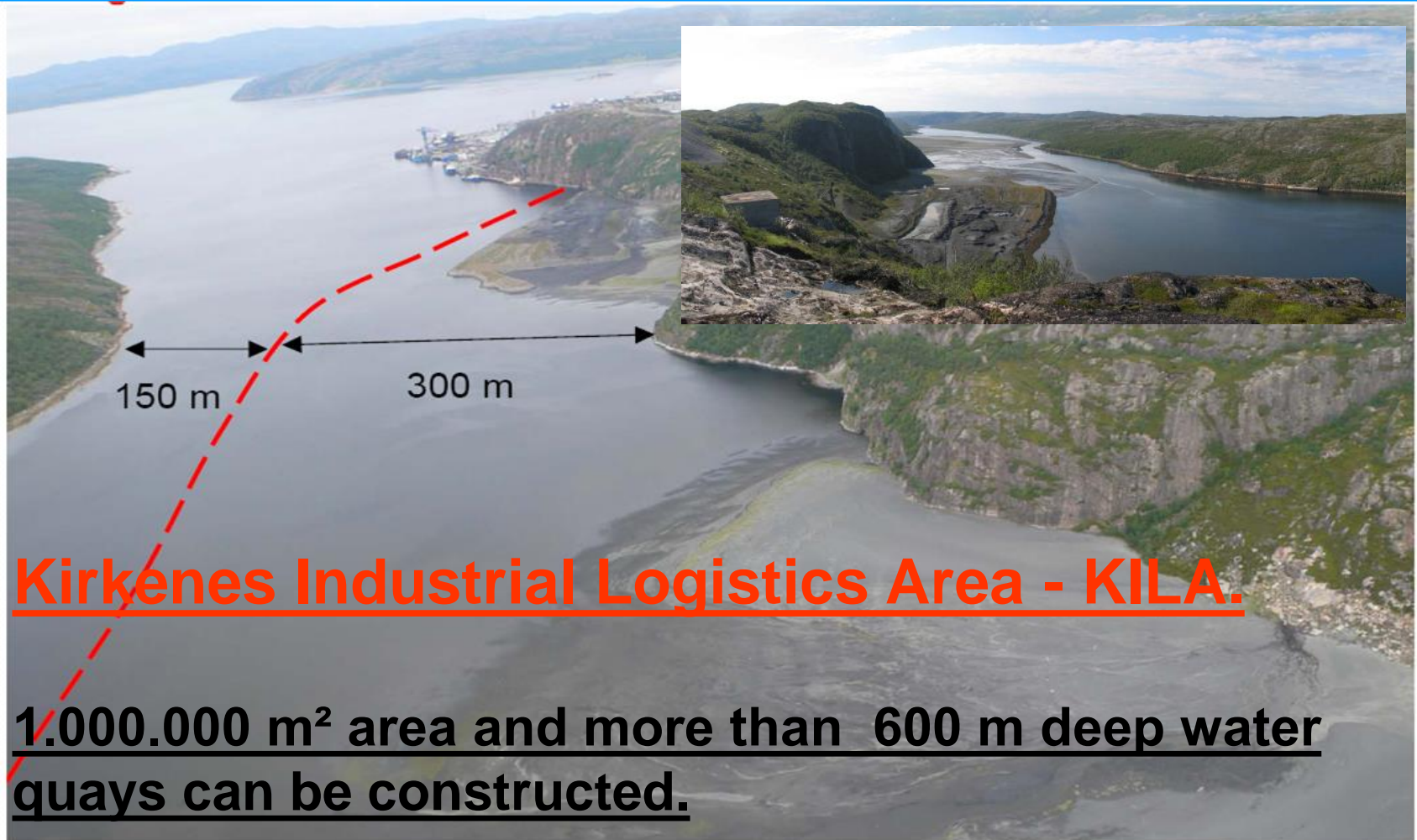
Tschudi Kirkenes

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



Shipowners
since 1883



KILA (Kirkenes Industrial Logistics Area)

THE WESTERN ENTRY POINT TO THE NORTHERN SEA ROUTE



Shipowners
since 1883



STATUS

NSR - an alternative to Suez and Panama canals?

Suez about 19 000 transits

Panama about 15 000 transits

NSR 46 transits last year

Still a long way to go



Source: Joachim Grieg & CO

For containers it is the opposite: Euro 2 750 # 1 300 Rotterdam/Shanghai

USEC - Panama - Shanghai	33 days
USEC - NSR - Shanghai	34 days
USEC - Suez - Shanghai	40 days
USEC - Good Hope - Shanghai	47 days

Panama fee	usd 180 000 (Panamax vessel)
Suez fee	usd 250 000 (Panamax vessel)
NSR fee	usd 375 000 (Panamax vessel)
Cape of Good Hope	usd 0,00

With new Panama Canal NSR will be even less competitive

First Conclusion:

The major trading routes in the world are located too far south for the NSR to become a relevant alternative for Suez, Panama or Cape of Good Hope

Gibraltar and Singapore are the geographical "break-even" points; anything south of these points is of no relevance

Some information to keep in mind when you read about the NSR

London Shanghai is 28% shorter (not 40% as normally quoted). London is not a "port" and therefore irrelevant.

For all comparisons it is important to understand the trading patterns; Europe is a discharging area for bulk cargoes and containers. The Far East a loading area for containers and a discharging area for bulk.

**TRADING PATTERNS ARE EQUALLY IMPORTANT
AS DIFFERENCE (SAVINGS) IN DISTANCE**

NSR is irrelevant for container transport as no lines will make schedules for 5 months of the year and they will "lose" the big ports like Singapore, India, Middle East and Mediterranean on their way to Europe.

I will try to explain to you how and why it can be 30% cheaper to transport coal from North East Siberia to Europe than it is to transport coal from the east coast of USA.

Typical trading pattern for dry bulk Panamaxes

**Trans-Atlantic
Timecharter Rate
7 500 \$ per day**



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32°33'46.49" N 34°44'11.74" W elevation -3506 m

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Oyeheyde 16111.75 km

**Trans-Pacific
Timecharter Rate
7 500 \$ per day**



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14°28'40.20" N 152°23'59.22" W elevation -3308 m

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Oyeheyde 16111.75 km

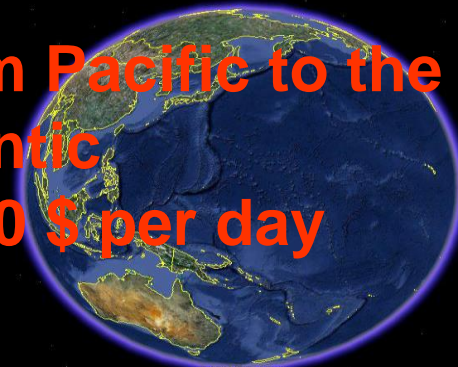
**From Atlantic to the
Pacific
15 000 \$ per day**



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Oyeheyde 16111.75 km

**From Pacific to the
Atlantic
1 000 \$ per day**



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14°28'40.20" N 152°23'59.22" W elevation -3308 m

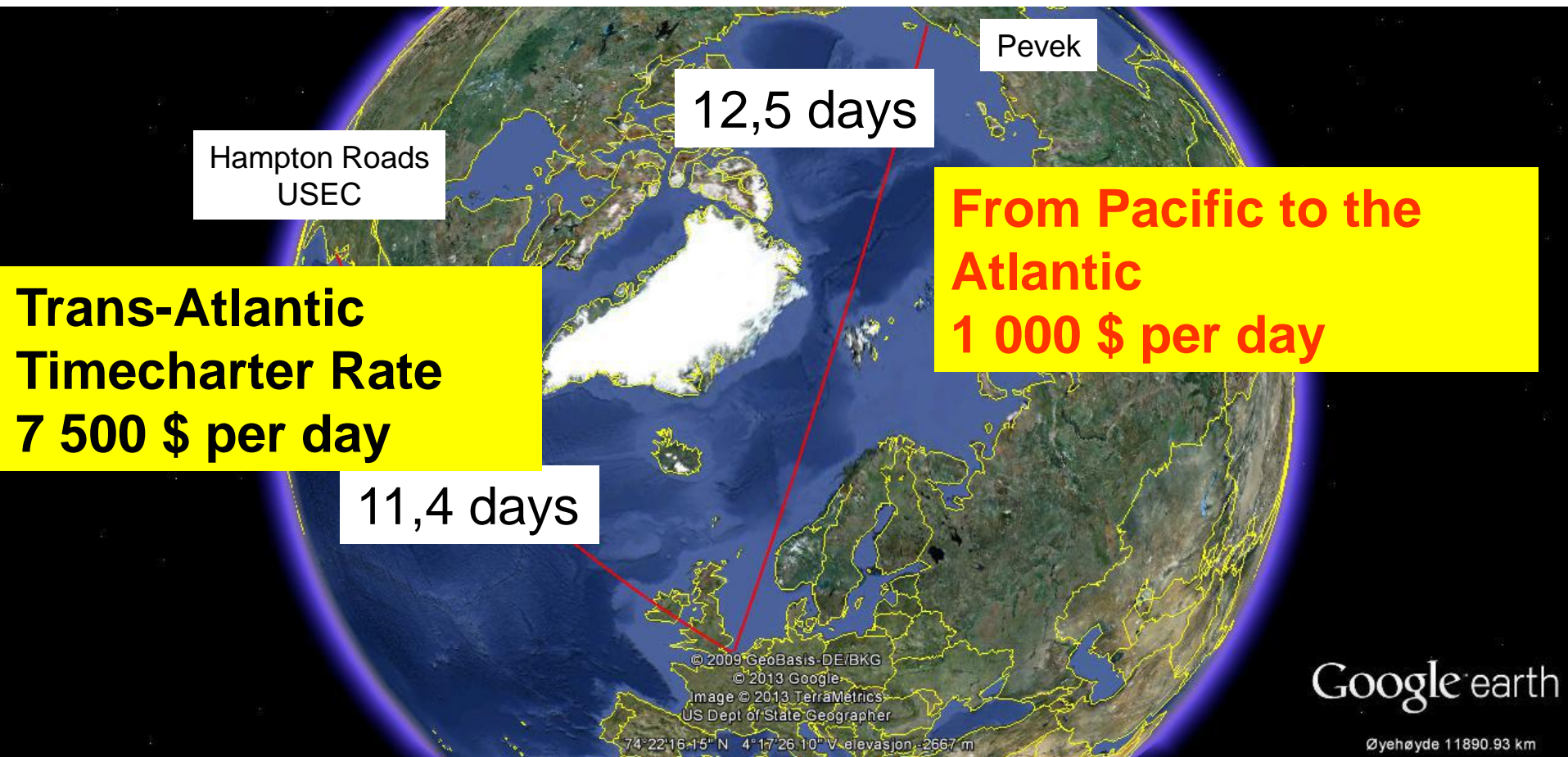
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Pevek is the middle point between
Shanghai and Rotterdam.

12,5 days to each destination

Shipowners
since 1883



Basically same distance, but....

Shipowners
since 1883

I will not bore you with the details of the calculations.
But the conclusions are:

- If the shipowner of a Panamax bulkcarrier uses the NSR on a round voyage, and is able to pick up a return cargo from Pevek, then he can increase his income from usd 7 500 per day till usd 12 200 or about 60% by charging the same freight per tonn as is being charged from USEC.
- If the shipowner wants to have the same return as he can get in the Atlantic market then he can offer a rate of usd 8,5 per tonn from Pevek compared to usd 12 currently being offered from USEC, or about 30% less.

If you want a detailed explanation, please contact me at:

hf@tschudishipping.no



Example

Savings in USD for 21,4 days saved in time.

LNG from Melkøya to Yokohama - 147 000 cbm

Full roundvoyage - Spot market rate – usd 15/mmBtu

1.	Timecharter per day usd 120 000 * 21,4 * 2	usd 5 136 000
2.	Bunkers burn off lng 0,1% per day * 21,4 * 2	usd 2 200 000
3.	Suez round voyage cost	usd 150 000
4.	NSR tariff usd 5 * 70 000 mt + usd 2,5 * 113 000*	(usd 632 000)

Savings (Full Roundvoyage)

usd 6 854 000

(* displacement tons)

Example

- 3 roundtrips per season may add up to a total savings of USD 20 million
- Yamal is another 8 days (roundtrip) better positioned with NSR representing even more value.

We are talking about unlocking
the High North in general
and Siberia in particular.

How to compare Apple with Apple? How does a shipowner calculate?

Shorter distance means less **fuel/bunkers**. (this is easy to calculate)

Shorter distance means less **time**. Some vessels are expensive like LNG at \$ 120 000 per day, while Bulkiers and Tankers are cheap today at \$ 7 000 per day.(these values are reported every day through ship brokers)

Different sailing routes means different **canal/transit cost**.
(these values are also easy to get)

Different sailing routes means different **trading pattern** (backhaul effect)
(this can be more difficult to evaluate)

It is the **SUM** of these costs and the difference in trading pattern that is important and they will vary from vessel type to vessel type
(the transit fee can be a large or a small part of this sum)

SECOND CONCLUSION:

NSR will open the high North in general and Siberia in particular.

A transport disadvantage can be turned into a transport advantage, - freight will not "kill the deal"

ENVIROMENTAL SAVINGS FROM KIRKENES TO SHANGHAI

A Panamax Bulkcarrier (about 75 000 dwt) burns about 30 tons of Heavy Fuel Oil per day sailing.

Saving one way is 21 days, for correct comparison we must include the repositioning, hence 42 days or 1 260 tons.

NOx savings	128 tonn
SOx savings	89 tonn
CO2 savings	3 980 tonn
Cost saving	820 000 usd

Some other elements to keep in mind when you read about the NSR

If a vessel makes one trip a year through the NSR, thereby saving 18 days

and

if a vessel has a technical lifespan of 20 years

then

this vessel will have gained one extra year of trading. $18 \text{ days} * 20 \text{ years} = 360 \text{ days}$

The value of one year extra trading has varied between usd 80 000 pd and usd 5 000 pd for a Panamax dry cargo vessel.

SUMMARY

1. DISTANCE
2. TRADING PATTERNS
3. ECOLOGY – remember the positive effects



Thank you
for
your
attention