LNG – the future of tanker shipping

Copenhagen, 26th October 2016
Terntank Rederi A/S

In short:

• Terntank was founded in 1958 on the island of Donsö, Sweden.
• A private, family-owned company.
• Commercial Head Office in Skaw, Denmark from 2009.
• We own and operate 9 ice-classed tanker vessels btw 8,000 and– 15,000 dwt.
• Primary markets are the Baltic Sea and the North Sea.
• "First Movers” for various green shipping technologies.
• We employ approx 200 people in total onboard our vessels and in our offices in Skaw, Donsö and Manilla.
## Fleet

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Dwt</th>
<th>Built</th>
<th>Ice class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ternsund</td>
<td>15 000</td>
<td>2016</td>
<td>1A</td>
</tr>
<tr>
<td>Ternfjord</td>
<td>15 000</td>
<td>2016</td>
<td>1A</td>
</tr>
<tr>
<td>Ternvind</td>
<td>10 300</td>
<td>2008</td>
<td>1A</td>
</tr>
<tr>
<td>Tarnbris</td>
<td>10 300</td>
<td>2007</td>
<td>1A</td>
</tr>
<tr>
<td>Ternholm</td>
<td>14 796</td>
<td>2005</td>
<td>1A</td>
</tr>
<tr>
<td>Ternvag</td>
<td>14 796</td>
<td>2003</td>
<td>1A</td>
</tr>
<tr>
<td>Ternhav</td>
<td>14 796</td>
<td>2002</td>
<td>1A</td>
</tr>
<tr>
<td>Ternvik</td>
<td>14 796</td>
<td>2001</td>
<td>1A</td>
</tr>
<tr>
<td>Tarnfors</td>
<td>8 245</td>
<td>1998</td>
<td>1A*</td>
</tr>
<tr>
<td>Tarndal</td>
<td>8 115</td>
<td>1998</td>
<td>1A*</td>
</tr>
</tbody>
</table>
Customers

- Preem
- NEOT (North European Oil Trade)
- ExxonMobil
- BP
- OKQ8
- Shell
- Total
- Neste Oil
- Statoil
Market fundamentals in general

FLEET DEVELOPMENT OF THE 10-19,000 ICE CLASS COATED FLEET
Major trading area

- Operate 95% in the SECA area
- Connects 30 EU ports in the Baltic Sea and the North Sea
- Reduction of air emissions (NO$_x$, PM and CO$_2$) “beyond” existing requirements and SO$_x$ compliance
Choice of fuel/technology

• Existing/future regulations

• Low sulfur MGO

• Scrubber technology

• Alternative fuels
  • LNG, Methanol and others
INTO THE FUTURE

Baltic $\text{SO}_2$lution
New technology for low emissions
New technology for low emissions

• A new innovative low-speed two-stroke dual-fuel engine of Wärtsilä

• New combined Catamizer (catalyzer/exhaust gas boiler/inert gas system) of Swedish Gesab.

• Energy efficient vessel design (Rolls-Royce Marine AS, Norway)

• Main engine meets IMO’s lower NOX Tier III limit without additional exhaust gas treatment

• Increased propeller diameter
4 new buildings ordered

- Four product tankers of 15 000 DWT with optimal environmental performance

- The World's first LNG driven new tankers in operation in May and July 2016

- The incremental cost for environmental performance is 30 % compared to a conventional tanker

- The newbuildings will be new to the tanker fleet operating in the sensitive Baltic Sea.
* Compared to a vessel with same size built around 2005, operational speed 14 knots.
Energy efficiency

Propulsion consumption reduced by 38%

Auxiliary consumption reduced by 21%

* Compared to a vessel with same size built around 2005, operational speed 14 knots.
AD0024 – M/T Ternsund

3.12.2013
AD0025 – M/T Ternfjord
Bunkering STS or at Terminal

Bunkering STS

Bunkering at Risavika terminal

Or by truck
Here we need help and support from all involved parties

Or by small scale LNG solutions
Economic aspects/funding

• EU support for new technologies/fuels (Motorways of the Sea etc).

• NOx-Fond support for reduction of NOx.

• Reduction of Fairway Dues/Harbour dues (Sweden and Finland) etc.
**Early Movers rebate**

<table>
<thead>
<tr>
<th>Port</th>
<th>ESI/CSI Index</th>
<th>LNG rebate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Gothenburg</td>
<td>10 %</td>
<td>20 %</td>
</tr>
<tr>
<td>Port of Lysekil</td>
<td>10 %</td>
<td>20 %</td>
</tr>
<tr>
<td>Port of Rotterdam</td>
<td>10 %</td>
<td>10 %</td>
</tr>
<tr>
<td>Port of Antwerpen</td>
<td>10 %</td>
<td>20%</td>
</tr>
</tbody>
</table>

Ports to follow:
- Port of Halmstad
- Port of Varberg
- Port of Stenungsund
- Port of Gävle
- Port of Karlshamn
- Port of Amsterdam
- Port of TEES
- Port of Pori
- Port of Hamnina
- Port of Vaasa
- Port of Oulu
Thank you!