

Ship Finance in the Digital Era

Turning the tide in finance and logistics

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The World is Changing!

Circular - Sustainable - Digital

Circular : ... minimising waste and making the most of resources.

Sustainable : ... use of natural resources at a pace nature can recover.

Digital : ... conducting business through markets based on the internet and the World Wide Web.

Boiling down to ...

New business models dismantling existing linear business paradigms!
It is not a trend! **It is a need and a global policy!**



The Challenge of Greening

Central Ambition

Reduce total annual maritime GHG emissions by $\geq 50\%$ by 2050 vs 2008 levels!



IMO
International Maritime
Organization

implying...

Time-horizon

short-term

medium-term

long-term

Measures

technology-based

logistics-based

market-based



The Problem of Financing Greening

Same problem **-compliance** \Leftrightarrow different challenges!

Newbuildings

Higher CAPEX - **less competitive**
Technology risks
Fuel price risks (e.g. in the LNG case)
Future compliance levels
Carbon price

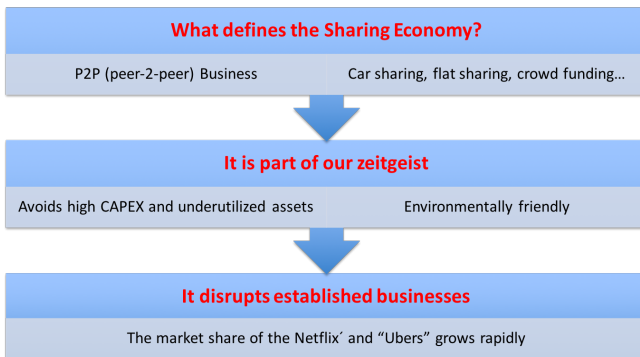
Existing Ships

Selection of technology
Financing retrofit and equipment
Pay-back of the investment -
horizon
Market-exclusion
Carbon price



What is the 'Sharing Economy'? I

Access vs Ownership of Goods



What is the 'Sharing Economy'? II

Access vs Ownership of Goods

Business Model - Marine Equipment:

- 1 Owners/Operators provide part of the acquisition cost to the (technology) Suppliers
- 2 Installed technology saves fuel, i.e. **decarbonises operations**
- 3 Fuel savings + Carbon savings are split between Owners and Suppliers

resulting in:

- 1 decreasing capital and technology risk - owners' side
- 2 motivates suppliers to improve performance - suppliers' side
- 3 invites third parties to manage related risks



Our contribution! I

...shared saving schemes

schemes to share benefits and risks!

We developed financial models, some of them are already in use, to assess the benefit of installing greening technology and sharing the benefit.

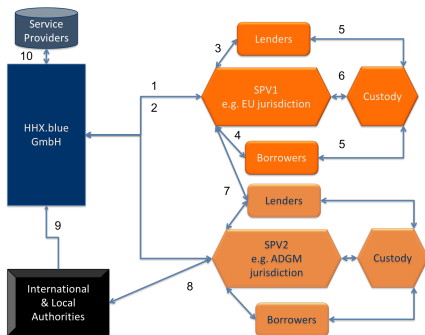


Figure: An Equipment Basket - HHX.blue (c)



Our contribution! II

...shared saving schemes

Parameters used in our models:

- 1 the sharing ratio, i.e. the split of benefits, such as monetized fuel savings and carbon emissions;
- 2 fuel prices;
- 3 carbon prices (when CO_2 emissions get monetized);
- 4 utilization of the installed power-boosting equipment (and/or its availability in general);
- 5 financial parameters of the power-boosting system, such as:
 - 1 the cost of the equipment including the cost of installation;
 - 2 the necessary first sum for the acquisition and installation (first payment);
 - 3 the economic and/or technical life of the equipment depending on the case;
 - 4 the expected maintenance outlay;
 - 5 the WACC of the project.



Our contribution! III

...shared saving schemes

Development of NPV (Sail)

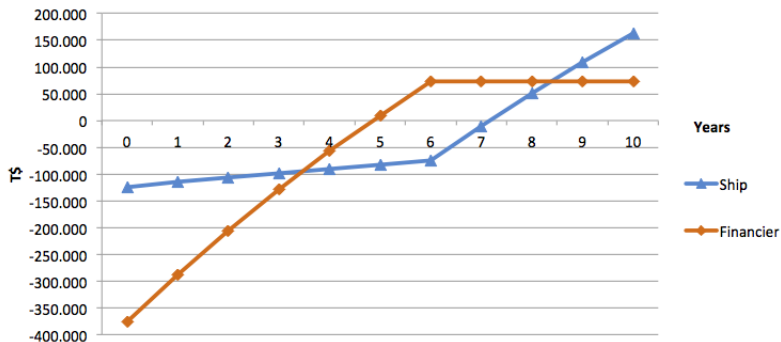


Figure: Development of NPV (Ventifoil Sails)



Our contribution! IV

...shared saving schemes

Utilization scenarios (Sail)

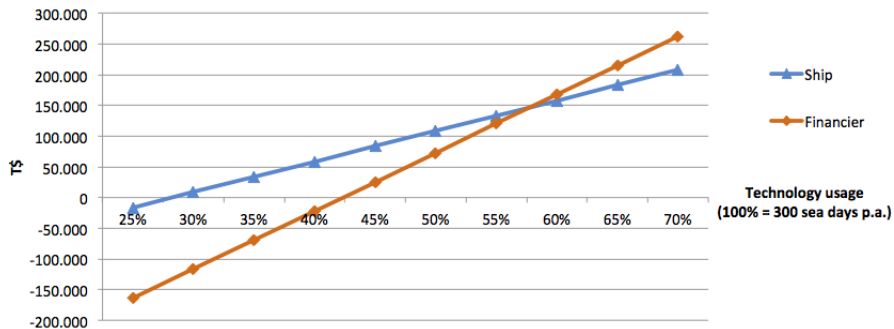


Figure: Utilization scenarios (Ventifoil Sails)



Our contribution! V

...shared saving schemes

Sharing ratio scenarios (Sail)

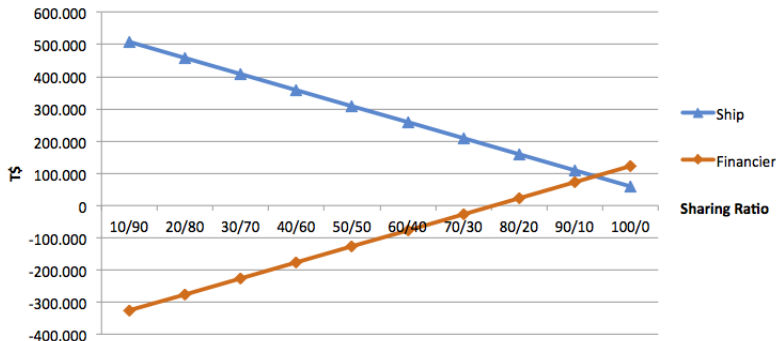


Figure: Sharing ratio scenarios (Ventifoil Sails)



Our contribution! VI

...shared saving schemes

Fuel price scenarios (Flettner Rotor)

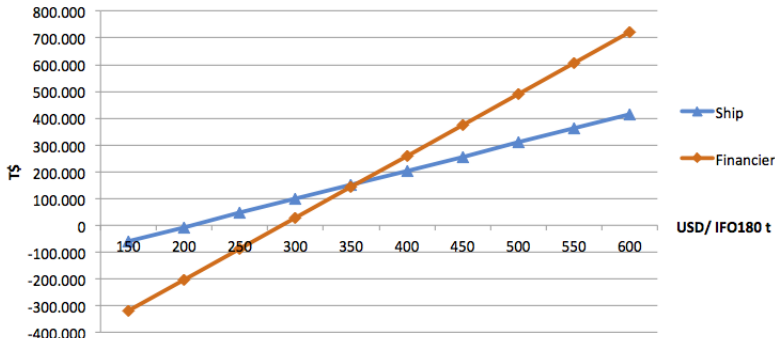


Figure: Fuel price scenarios (Flettner Rotor)



Our contribution! VII

...shared saving schemes

Carbon pricing scenarios (Flettner Rotor)

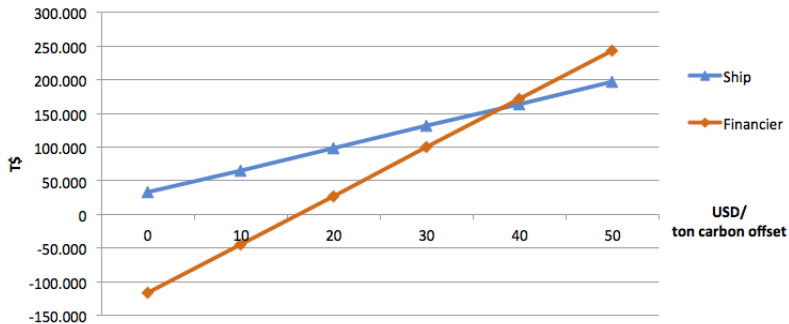


Figure: Carbon pricing scenarios (Flettner Rotor)



A last point on funding opportunities...

The transition requires a new way of thinking!

- ① Export credit schemes \Rightarrow WACC \downarrow red tape \uparrow ; demand big tickets and **national interest** \Rightarrow unlevelled international play field
- ② Leasing schemes will replace (or compete) bank lending (at an extend) \Rightarrow new playground for most yet **solvent** companies
- ③ Leasing is linked with **national shipbuilding** interests
- ④ Leasing fosters complicated schemes (as in the aviation)
- ⑤ Finance gaps will be tapped by all sorts of funds (equity, debt, mezz, etc.)
- ⑥ Green projects should generate **sufficient revenue** (not only goodwill)
- ⑦ Equipment financing emerges \Rightarrow aviation-like securities and terms
- ⑧ Equipment financing \Rightarrow pay-as-you-save, **sharing economy schemes!**

Digital technology is the key!

Digital technology can provide the necessary support for intertwined financial schemes.

Is the transition easy?

Dismantling existing linear model

The transition requires a new way of thinking!

- 1 understand and incorporate **green footprint** in **all** projects and functions
- 2 understand the use the **digital footprint** of your business
- 3 minimise waste - reuse material - be **part of cycle**
- 4 develop networks - *realise that you are only a node of wider networks*



Thank You for Your Attention!

Any Questions?

