LEADERSHIP THROUGH ROUGH SEAS

Piloting shipping to low-carbon growth

EXECUTIVE SUMMARY

1. Climate science still features some knots of uncertainty and controversy. But the burden of scientific proof points to this correlation: the increase in global mean temperatures over the last 60 years is attributable not to natural phenomena, but to human activity – specifically to the large-scale discharge of greenhouse gases into the atmosphere since the Industrial Revolution.

2. Over the past century the average temperature of the atmosphere near the earth's surface has increased by 0.74°C.[1] The ten warmest years on global record have occurred since 1997. Since the mid-1970s global surface temperatures have increased by an average of more than 0.15°C a decade.[2] Allowing these trends to continue unchecked will have profound consequences for human existence – more frequent and more severe natural disasters, more intense droughts and famine, a potentially heightened risk of violent conflict over scarce natural resources, and a dramatic loss of biodiversity, to name but a few.

3. Scientists believe that to avert the worst of these consequences warming needs to be kept to within 2˚C above pre-industrial temperatures, which in turn means aggressively reining in greenhouse gas emissions. Since industrialisation began, we have injected about 500 billion tonnes of carbon into the atmosphere – halfway to the 1 trillion tonne mark beyond which some scientists believe a temperature hike of over 2˚C is likely. It took over 250 years to expend the first half of the global carbon budget; yet, on current emission growth trends, we may have exhausted the second half trillion as soon as the 2040s.[3]

1 "The greenhouse effect and the carbon cycle", UNFCCC website: http://unfccc.int/essential_background/feeling_the_heat/items/2903.php
2 "Climate Change: The Facts", Met Office, 2009, p.15: www.metoffice.gov.uk/climatechange/guide/downloads/quick_guide.pdf
3 Myles R. Allen et al, "Warming caused by cumulative carbon emissions towards the trillionth tonne", Nature, Vol. 458, 30 April 2009, p. 1163. See also "Humanity's carbon budget set at one trillion tonnes", New Scientist, 29 April 2009: www.newscientist.com/article/dn17051-humanitys-carbon-budget-set-at-one-trillion-tonnes.html

The full report, produced by Xynteo, can be downloaded at **www.xynteo.com.**

Commissioned by the Norwegian Shipowners' Association (NSA) to mark its 100th anniversary, the report was launched at the NSA's general assembly on 15 March 2010.

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4. Should the shipping industry be concerned? Yes, and not only for ethical reasons. A growing number of political leaders, swayed by the strength of the science, have put the construction of a low-carbon economy at the top of their policy agendas. More and more governments are rolling out regulation to curb industrial emissions of greenhouse gases. The international shipping industry – though a comparatively carbon-efficient freight option – is nonetheless responsible for a growing share of global CO_2 emissions. Shipping will not escape future climate regulation.

5. To decarbonise the world economy, the historical link between economic output and fossil fuels has to be severed. This will crave, more than anything else, a stable carbon price, high enough to influence business decisions. A per tonne price tag of €100 – the level being advocated by some researchers – could cost the shipping industry more than an extra €100 billion a year. But even a more modest price – for example, the €30 per tonne peak reached in the EU market in the summer of 2008 – would be expensive. On the basis that burning 1 tonne of marine bunker fuel emits around 3.2 tonnes of CO_2 equivalents, a price of this scale could mean an additional cost of roughly €100 per tonne of fuel.

6. Even without low-carbon regulation, oil will stay expensive and volatile: the International Energy Agency has said that the oil price could reach $200 per barrel in 2030.[4] In the low-carbon economy buying and burning heavy oil will become more and more commercially untenable.

7. Far-sighted shipping companies are not sitting back, waiting to be straight-jacketed by these costs and impending regulation: they are taking steps now to wean themselves off carbon-intensive practices. It will be these pioneers that will be better able to manage high carbon and oil prices; they will also be better equipped to adapt as the low-carbon economy changes the structure of demand for shipping services.

8. A decarbonised world economy will likely feature smarter consumption, with more emphasis on delivering only demanded value and with shorter distances between producer and consumer. The electrification of land-based transport will depress demand for oil, as will political bids to reduce dependence on unpredictable energy exporters. And overall rates of globally traded production could slow down (though growth in the low-carbon segments of the economy is likely to pick up).

9. The above possibilities could mean changing freight patterns – for example, a potential relative slow-down in segments of long-haul shipping. The low-carbon economy could, therefore, be a more competitive place. The winners will be those that innovate, dramatically and on four fronts. They will be companies that (1) deploy the right technology in the right way, (2) engage constructively with regulators, (3) invent new business models, and (4) collaborate along and across value chains.

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4 World Energy Outlook 2008 Executive Summary, International Energy Agency, p.6: www.worldenergyoutlook.org/docs/weo2008/WEO2008_es_english.pdf

10. Technological and operational measures offer significant potential for carbon reductions. According to one estimate, current technology and know-how could profitably cut the CO_2 emissions of the existing world fleet by 15%. The CO_2 emissions of the 2030 fleet could be reduced by 30-60%, depending on the package of measures implemented, with the first 30% coming with a net saving and the remaining reductions incurring a net cost.[5]

11. An inherently global industry like shipping should be regulated globally: a system based on regional or national regimes could skew competition and encourage capital and carbon flight. Shipping leaders need to engage creatively with policymakers to help craft regulation that supports forward-leaning industry structures and makes optimal use of its capabilities.

12. Gaining competitive advantage in the low-carbon economy will depend to a large extent on new business models. These business models will vary. They might be predicated on carving out new, low-carbon industries; on reconfiguring offerings or introducing new pricing models; or on redrawing organisational boundaries to adjust positioning in a value chain.

13. Many of the adjustments that the shipping industry needs to make call for collaboration along and across value chains. Slow steaming, higher capacity utilisation, better port scheduling – all of these reforms will demand tighter cooperation all along the supply chain, from manufacturer and shipping line, to ports, land-based freight companies, factories and distributors.

14. As the source of an expanding proportion of global greenhouse emissions, shipping is part of the climate problem. But it is also an important part of the collective solution. Already carbon-efficient relative to other freight options, shipping could support other industries as they comb through their supply chains to eliminate carbon waste and restructure them to deliver a new kind of growth. In a green global economy, lower-carbon shipping could become an even more important enabler of trade.

15. Transforming companies to compete in the low-carbon economy will be a big undertaking, demanding the root-and-branch overhaul of business structures and cultures. Doing so will require bold and steady leadership capable of steering the course, despite the turbulence of the financial crisis and economic downturn.

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5 Both estimates are from DNV: 1) "Shipping can cut CO_2 sharply, classifier DNV says", Reuters, 8 June 2009: http://uk.reuters.com/article/idUKL852249520090608; and 2)"Pathways to low carbon shipping: abatement potential towards 2030", Det Norske Veritas, 15 December 2009: www.dnv.com/binaries/Pathways%20to%20low%20carbon%20shipping%202030_tcm4-400655.pdf