



Speech for IMO symposium on World Maritime Day - 26.9.13

FUEL AVAILABILITY AND NEW FUEL TYPES - TECHNOLOGY FOR HIGH EFFICIENCY

Secretary General, distinguished guests. I'd like to thank you for the invitation to speak today on a topic that has been part of my life, off and on, since I left university nearly 30 years ago. The interrelationship between the oil and shipping industries has always been and will remain one of the most fascinating areas of trade, geopolitics, engineering and human endeavour and my involvement to date whether running bunker operations for an oil major or in my role today, however insignificant, has always drawn me to the subject.

I'm speaking today on behalf of IPIECA, the global oil and gas industry association for environmental and social issues and if you'll allow me, I ought to set some context so that you know who we are and why we are interested in the journey to sustainable maritime transportation. Our members number 37 of the largest oil and gas companies in the world, engaged in oil and gas exploration, production and refining. Together they account for over half the world's crude oil production and around 30% and increasing share of natural gas. IPIECA has 2 roles, one is to convene working groups to develop and share good practice on environmental and social issues, including an oil spill working group and a marine issues task force. Our other role is to represent our part of the global oil and gas industry at the United Nations. Alongside the IMO, we also participate with the UN Environment Programme, the UN Framework Convention on Climate Change and the UN convention on sustainable development among others.

As an industry group, we believe the oil and gas industry will continue to play an important role in meeting the world's growing energy needs. Global energy policies are promoting low carbon energy technologies and the use of modern renewables will almost triple by 2035 to about 14% of total supply. However, renewables cannot satisfy global demand growth, so consumption of both oil and gas is set to continue to grow for the foreseeable future.

The IEA predicts that world primary energy demand will grow by anywhere between 20% and 40% by 2035, driven principally by growing income and population in emerging economies. Oil and gas are predicted to meet around half of the world's energy needs in 2035, down slightly from current levels, with oil remaining the largest contributor to the energy mix.

The IEA's World Energy Outlook suggests there are a number of factors that will determine the role of oil and gas in the next 25 years:

- the absolute level of growth in demand for natural gas will far surpass that of other fuels due to its environmental advantages over coal and lower cost compared with most renewable-energy technologies;
- all of the projected increase in oil demand is for transport, as the number of passenger vehicles is expected to double by 2035;

- the use of modern renewable energy – including wind, solar, geothermal, marine, modern biomass and hydro, is predicted to rise greatly by 2035, but would still provide only a fraction of the total energy supply (14-27%), and
- over the outlook period energy efficiency measures account for half of the cumulative CO₂ abatement achieved.

Energy efficiency will continue to improve and the role of renewable energy sources will undoubtedly grow. But there are physical and financial barriers to how quickly the global energy system can be transformed, especially as many low-carbon technologies are currently at varying stages of maturity and expense.

Oil and gas companies will continue to invest in new sources of supply as well as in researching and developing low-carbon energy sources and technologies. Some may look into advanced biofuels, other types of renewables and/or carbon capture and storage. And the industry will play its part in further encouraging efficient use of energy. We recognize that we have a role to play in the transition to sustainability and that meeting the energy needs, efficiently and operating responsibly are part of our license to operate.

While hydrocarbon liquids offer the highest energy density currently available for large scale use in maritime transportation systems, what does operating responsibly with mean?

The first requirement is not to spill it. This is a responsibility that the oil and gas industry shares and IPIECA has been working very closely together with the IMO on the global initiative for oil spill prevention and response. This initiative brings industry, the IMO and governments together to promote the ratification of international conventions and improve local capacity and capability in oil spill prevention and response. We launch our third region this year, added the ASEAN countries to West and Central Africa and also a Caspian programme. We have also produced an extensive oil spill report series providing guidance and good practice across a broad range of prevention and response topics. We will be concluding a major update to this series by the end of next year.

The second responsibility is to minimize the energy required to bring fit for purpose fuels to market. Like all industries there is a clear business case for improving energy efficiency from the economic, environmental and social points of view. The shipping industry itself has made significant progress over the years in terms of the fuel efficiency of the vessels, but also in terms of their configuration to optimize the energy intensity of cargo movement as a whole. Oil and gas production and oil refining became progressively more energy intensive through the 1990s. This is because it has been increasingly necessary to drill deeper to find and produce oil and gas, to use secondary and enhanced oil and gas recovery techniques, and to exploit heavier oil deposits and older reservoirs. In refining there is a demand to process greater volumes of crude, whilst also converting more of that crude into light end products, and reducing the environmental impacts of fuels through energy intensive processes such as greater desulphurization. These enhancements consume more energy, and will to some degree offset benefits brought about by incoming sulphur regulation.

Even with these challenges, energy intensity in both the upstream industry and in refining has fallen significantly since 2007 and is now back to below the level of the late 1990s, thanks to significant investments by the industry in energy-saving technologies.

Turning to marine fuels supply, IPIECA has been an active participant during the discussions within IMO's Marine Environment Protection Committee and its supporting Subcommittee that led to the adoption of the revised Annex VI. The options under consideration included options that would have major impact on the refining industry and its ability to provide compliant fuels to the shipping industry, IPIECA has contributed relevant information on these issues to the debate, often in close cooperation with OCIMF. The potential fuel supply concerns raised by IPIECA have contributed to the inclusion of a Fuel Supply review provision in Annex VI, ahead of the implementation date of January 2020 for a global Sulphur cap of 0.50% S.

The Refining industry, through IPIECA, remains committed to cooperate with IMO and its stakeholders to facilitate the completion of the Fuel Supply review foreseen by Annex VI in a timely and scientifically sound way.

The change in fuel supply patterns that will be required to meet the global S cap of 0.50% as of 2020 or 2025 is unprecedented in scale within the industry. Changes in road transport fuels have been made step by step at a country or regional level, and mainly remained limited to additional desulphurization steps. The global S cap of 0.50% implies a significant shift away from heavy fuel oil to middle distillate type of fuels, for which additional conversion capacity (hydrocrackers, cokers) will be required. At present, there will be insufficient availability of compliant marine fuels in time for the deadline without securing significant additional upgrading investment. The additional challenge is that for this change, a global approach is required to minimize risks associated with maintenance, compliance and excessive fuel switching requirements.

The changes required in the refining industry to provide 0.50% S fuel will lead to a significant increase in refinery energy consumption and CO₂ emissions.

A study a few years ahead of 2020 should provide a realistic view on the 2020 supply capabilities, as by then major refinery projects that will be completed and operational by 2020 will be formally announced, with engineering and/or construction underway. Also by then, outlooks for scrubbers penetration and extend of use of LNG by ships should be more reliable than any estimate that could be made today. Furthermore, it will be important to review the potential environmental impacts from well to propeller, taking a system approach that includes the supply chain, equipment manufacturers and operators.

Refinery projects to install additional conversion capacity allowing to convert (high S) residual fuels into low S distillate type of fuels are major capital projects, of the order of 1 billion \$ and more. These projects require substantial time period for scoping, engineering, financing and construction.

We believe it will be important to keep all options open to meet the Annex VI S requirements. This will include use of scrubbers and alternative fuels. LNG and biofuels are two possible alternative ways to comply with the Annex VI which has the necessary provisions to allow their use.

The free market will ultimately determine which mix of energy sources will be used to meet requirements in the most economical way. Note that the answer may not be the same for all types of ships.

IPIECA is well placed and ready to contribute to the processes that enable the transition to a sustainable maritime transportation system. We have collaborated as partners in related programmes such as the partnership for clean fuels and vehicles, led by the UN Environment Programme which has led to the removal of leaded gasoline in 94 countries in the last 10 years, preventing a million premature deaths a year in the process. We already have one successful working relationship with the IMO on oil spill response.

To sum up, shipping is key to global trade with its access to and use of energy key to its effectiveness and efficiency. The shipping and oil and gas industry need to work together as partners to improve its efficiency and environmental performance. IPIECA, representing the industry is ready to contribute.

If you would like to find out more about the work of the industry through IPIECA, please have a look at our website, www.ipieca.org. Thank you for your attention.