

**The 59<sup>th</sup> SIGTTO Panel Meeting  
May 14<sup>th</sup> 2014  
Keynote address from Jérôme Ferrier  
President IGU**

Mr. Luc Gillet, President of SIGTTO,  
Mr. Masahiro Iwanati, Senior Vice President,  
Distinguished Presenters and Guests,  
Ladies and Gentlemen,

It is a great honour and privilege for the *International Gas Union* and his President to have been invited to present the views of the Organization at the 2014 Panel meeting of *SIGTTO*.

IGU is representing the worldwide natural gas and LNG industry, from the wellhead to the final consumer, and is gathering 83 members and associate members, among which more than 20 are also members of *SIGTTO*, either directly or through their LNG subsidiaries.

The 2014 Panel Meeting of *SIGTTO* is regarded by *IGU* as an outstanding event, since it offers an opportunity of reviewing and updating the recent development of LNG, not only for fuel bunkering, but also for the whole transport sector, where a silent revolution is ongoing.

Oscar Wilde once said “*Some cause happiness wherever they go; others, whenever they go...*” and it applies without discussion to the substitution of natural gas and LNG to conventional fossil fuels, in the energy mix generally, and more specifically to coal for power generation and to petrol and diesel for transportation. Such “happiness” is fostered by a series of structural factors that are gaining fast momentum in the world.

The environmental performance of transport modes is a crucial area, both for the road and marine sectors. There is a growing awareness from governments and people living in urban areas that the environmental performance in transport should be rated on two grounds: the climate protection through control of GHG emissions and the mitigation of health risks through limitation of NO<sub>x</sub> and emissions of particulates.

Emissions of particulates from diesel are of special concern because they are easily inhaled into the lower respiratory tract and have been found to contain potentially allergenic and carcinogenic compounds. Compared to diesel or heavy fuel oil, natural gas has the smallest carbon footprint and switching to natural gas also has an immediate impact on air quality and health, with reductions of emissions by 20 % for CO<sub>2</sub>, 90 % for NO<sub>x</sub> and up to 100 % for sulphur and particulates.

However, the environmental factors in favour of switching from oil-based products to natural gas have to be weighted against a series of critical issues influencing the use of natural gas in transport.

Firstly, the so-called “*chicken and egg*” syndrome that hampers the development of an effective refuelling infrastructure. This is valid for LNG bunkering, but still more critically for LNG truck loading and CNG. Simply stated this refers to the unwillingness of stakeholders, whether manufacturers or users, to invest in new natural gas or LNG equipments until there is a widespread network of refuelling stations, whilst fuel infrastructure providers will be unwilling to make such investments until there is evidence of significant growth in the NGV and LNGV fleet of trucks and vehicles.

Furthermore, switching to a new fuel always entails a degree of risk that some individuals, and more particularly companies, may be hesitant to countenance when compared with a known option. This challenge is sometimes referred to as the “*No one ever got fired for buying IBM*” syndrome and is particularly relevant in an established sector such as transport. Therefore a new fuel such as natural gas or LNG has a strong element of inertia to overcome.

However, the situation is rapidly improving, triggered by technological, economic, and environmental progress that foster initiatives in LNG and CNG supply infrastructures as well as on the demand side, with the emergence of new engines allowing to use natural gas at an investment cost comparable to the traditional oil based equipments and at a lower operating and maintenance cost.

On the supply side, IGU is active in advocating the development of a package of services in the existing and new LNG terminals with a view to nurturing new marine and road transport activities based upon natural gas. I mean, in particular, the following services:

- LNG bunkering facilities for deep sea vessels;
- Loading of bunkering ships, which can supply to LNG-fuelled ships or other LNG bunkering stations;
- Truck loading, LNG being loaded on tank trucks which supply LNG refuelling stations for road trucks;
- Rail loading, LNG being loaded on rail tanks which transport LNG with a high degree of safety.

- LNG satellite storage, enabling to store LNG in small quantities in areas where there is no high pressure pipeline of natural gas and can be used to supply LNG trucks and CNG refuelling stations.

The “*LNG New Services Inventory*” published in February 2014 by *Gas LNG Europe (GLE)*, which represents 16 European LNG terminal operators from 9 countries, evidences that already in 2014, 5 LNG terminals offer the loading of bunkering ships service and 10 the truck loading service. If no rail loading is yet available in Europe, the tables published by *GLE* indicate that a large number of new facilities for LNG bunkering and truck loading are contemplated by terminal operators to enter into service before 2020.

IGU is also adamant to promote road infrastructures for LNG and CNG refuelling, a key issue if we want to overcome the “*Range anxiety*”. It is a fact that the fear that one’s vehicle will run out of fuel before there is an opportunity to re-fuel is a powerful deterrent to all unconventional forms of transportation fuel. In Europe, there is already widespread infrastructure for petrol and diesel fuels: according to *Europa*, there are more than 131 000 petrol stations in Europe serving over 230 million cars and trucks. This compares with approximately 27 500 LPG filling stations in the EU and 11 000 electricity charging points. *NGVA (the Natural Gas Vehicles Association)* statistics indicate that there are presently only 4 500 CNG refuelling stations in Europe, of which around 40 are equipped with L-CNG capability and a similar number of LNGV only stations.

Indeed, there is still “*A long way to Tipperary*” and the European NGV industry has a multi billion Euros of investments to consent for establishing a sufficiently dense network of CNG and LNGV fuelling stations on the main EU highways. IGU shares the views that without political support and binding targets, as well as incentives schemes and a consistent policy on taxation across Europe, a rapid build-up of infrastructures would be difficult. IGU is therefore pledging for making these issues a priority on the agenda of the EU Commission in the coming years.

Nevertheless, we have serious reasons for being optimistic when we look at the demand side, fostered by very significant technical progress, the abundance and availability of natural gas and LNG at competitive economic conditions, the emergence of shale gas and biomethane productions, all combined with the irreversible trend in more stringent global and regional environmental constraints.

A major technological breakthrough has recently been achieved in the conversion of conventional heavy-duty diesel engines to dual fuel use at a low additional investment cost. In a dual-fuel engine, the natural gas can substitute diesel in proportions ranging from 45 % to 95 % depending on the nature of the engine. Natural gas engines used to have significantly less power than the traditional diesel ones but recent designs have significantly closed this gap, paving the way to economically feasible industrial development of dual-fuel trucks.

In common with most industries LNG transportation is subject to a myriad of international, regional and national standards and procedures that impact on the NGV and LNGV sectors. It is IGU’s view that an harmonized framework of standards have to be promoted , at least at a regional stage, with a view to reaching awider market.

Public perceptions of LNG and CNG as dangerous fuels also have to be changed by effective communication from the industry.

Particular issues that need to be resolved in the road sector include a harmonized filling standard for CNG and L-CNG refuelling stations, standards for CNG and LNG repair, and for enclosed parking facilities. In the marine sector, I know that *SIGTTO* has been very active in issuing guidelines relating to LNG as a cargo and adapting them for bunkering procedures. In the Netherlands, the first of two tank barges that are fully LNG powered has been recently commissioned to operate on the Rhine and it is expected that, by the end of 2014, the EU Commission, in cooperation with the *European Maritime Safety Agency (EMSA)* will propose a set of rules, standards and guidelines for LNG provision, bunkering and use in shipping.

Last but not least is the impact of the growing pressure of environmental and health factors on a switch to natural gas in transport. Recent peak of air pollution in large urban areas in China, India and even France have set a feeling of urgency and a public awareness that the “do nothing” option is no longer acceptable.

The year 2015 will be important for the shipping industry, when stricter requirements on low sulphur content will enter into force in the *Emission Control Areas (ECAS)*. From 2015, the maximum allowable sulphur content in fuel oils is 0.10 % in the *ECAs*. The confirmed *ECAs* are Baltic sea, North Sea, and the North American Coast, together with the US Carribean, and from 2020 a global requirement of maximum 0.50 % sulphur (outside *ECAS*) will apply.

Separately, the *Energy Efficiency Design Index (EEDI)* requirements were introduced by the *International Maritime Organization (IMO)* in January 2013. It sets standards for CO<sub>2</sub> emissions from new build vessels of all commercial nature that together account for around 70 % of the global emissions from new ships.

To conclude, I wish to thank *SIGTTO* and his President for having invited me to present at your Panel meeting, hoping that you share *IGU*'s views that natural gas and LNG are destination fuels for a sustainable and environmentally friendly future of mankind. I am in total confidence that *SIGTTO* will ensure that the maritime transport sector shall fully contribute to building-up this future.

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