The Future of LPG promising toward the age of renewable energy to come in mid of the 21st century!
Promoting the benefits of LPG around the world

Interview between Mr. M. Kelly (Deputy Managing Director of WLPGA) and Mr. M. Uezono (CEO of KOAGAS NIHON CO) concerning Future of LPG

(Translation kindly supplied by KOAGAS NIHON CO).

The interview took place between Mr Michael Kelly, WLPGA Deputy Managing Director, and Mr. M. Uezono of KOAGAS NIHON CO concerning the future of LPG held at the KOAGAS NIHON Tokyo's Office during Mr. Kelly's trip to Japan for the LP Gas International Seminar 2018.

Revaluation of LP gas is necessary toward the age of renewable energy

M Uezono

First of all, I would like to appreciate giving me an opportunity to talk with you about some of very important problems with the LPG industry, despite your schedule is so tight in Tokyo. I know that immediately after this interview is over, you must move out here for another meeting. So, I think it would be better to begin talks about the main subjects just now. I recognise that it is very significant for the human being the flame work of actions to the claim change under which the international society must carry out faithfully the outcome of the COP21 held in Paris in 2015. Needless to say, its ultimate target is to reconstruct a carbon free society. In this connection, what would you think about the construction of carbon free society?

M Kelly

As you know, the Paris Accord makes arrangements for the total amount of GHG originated in the activities of human-being to balance to that absorbed by a forest and so forth before the middle of this century. I am quite optimistic about the future of LPG as a supplementary energy of renewal energy at least until the age of renewal energy has come in view of various reasons such as (1) LPG being exceptional energy in terms

of the burning characteristics, (2) prospect of its long-term supply-ability due to the increasing shell gas production projects etc., (3) the synergy effect in the transportation costs due to shortening of transporting distance and construction boom of ULVC by the expansion of the Panama Canal, (4) sprouting of large scale gas turbine power plants that consume huge amount of LP gas, (5) prospect of further competitive price of LPG and (5) future of" Cooking For Life" project which is a project aiming at replacing woods or other bio-mas fuels used for cooking indoor mainly in the developing countries with LPG under the leadership of the UN.

MU

I quite agree with Kelly-san's view. I know that there are not a few customers and LPG distributors who are apprehensive about the future of LP gas in view of not only the government's demand forecast of LPG for coming five years in which the demand will go down by two points maximum per year but also LPG consumption is on the downward trend for the time being. I explain all the times that LPG will be evaluated as more effective and useful energy than at present in course of the arrival of age of renewable energy based on the reasons that Kelly-san represented now.

■A large scale LP gas turbine generator will create a huge demand

MK

Now, let me refer to some projects which could create a huge demand for LPG newly and which WLPGA is enthusiastically taking part at present. One of them is the "Cooking For Life" campaign. As I have just referred to, this campaign is pursued under the UN.
2.5 billion people in developing countries use firewood, dead trees or fallen leaves for cooking indoors. This kind of lifestyle induces air pollution problems that leads to early death. The purpose of this project is to switch one billion people from cooking with biomass to cooking with LPG.

MU

I have heard that WLPGA looks forward to sprouting of large scale LPG turbine generators that consume huge volume of LPG. Our company entered electricity business in April of 2016 when the retail business of electricity was completely liberalised. At present, taking into account of the low profitability of existing retail business that resells electricity procured from the outside as well as the adaptation to the age of renewable energy in future, we are considering to enter the arena of renewable energy business on a full

scale. Currently, the number of our customers is over 70,000 and in my estimation, their total electricity consumption is approximately 20 million kwhs per month. This means we need a pair of LP gas turbine generator with the capacity of 60,000 kwh in consideration of both problems of peak shaving and occurrence of contingency etc.
I am particularly interested in a large scale LPG turbine generator as a supplemental approach to the supply of electricity until the age of renewable energy comes hopefully sometime in the middle of this century. May I ask about the progress in the projects of large scale LPG turbine generators?

■The change in home energy from electricity to LPG contributes not only to the reduction of GHG emission but allow LP gas industry to continue its sustainable growth also.

MK

I believe the future of large scale LPG turbine generator is quite promising and thus generate huge demand for LPG among them in the area where neither the supplying infrastructure of LNG is developed nor the demand for power is large enough for the construction of a large scale conventional fossil fuel- fired power plant. We are studying LPG turbine generators ranging from small and medium size (MT50MW) to very large size (LT400MW). Amount of LPG consumed in a generator with the annual capacity of 10 billion kwhs is calculated as 1.2 million tons. In case of KOAGAS NIHON CO, approximately 300,000 tons of LPG is necessary for the generation of electricity to meet the demand of all the customers. Two LP gas turbine generators, one is with a power generating capacity of 200,000 kw, the other one 120,000 kw, are separately under construction in the US Virgin Islands located in the Caribbean Sea. In the Republic Ghana in Africa, a large scale LPG turbine generator with a capacity of 400,000 kw is slated to be completed before the end of this year. I have heard that the profitability of this project is expected to be high.

MU

I would like to know these projects in more detail by all means. As you know, the total amount of consumption of LPG per annum in our country is 14 million tons. Of that number, about a half, that is, 7million tons, is for home and business use. As far as energy consumed in household is concerned, electricity ranks first with a share of 51 % while LPG 11%. 35% of total consumption of electricity used in household is for TV and refrigerator etc. and a 65% is for air conditioner, water heater, space heating and cooking.

If all the electricity used for the latter could be replaced with LPG, the share of LPG could increase up to 44% while the share of electricity could decrease up to 18%. It means that the demand for LPG will be four times as large as the one at present. Needless to say it is certain that the change in home energy from electricity to LPG will become the savior to allow the Japan's LPG industry to continue the sustainable growth for the time being.
I believe that the GHG value by Full Fuel Cycle analysis (FFC analysis) or called Carbon Foot Print (CFP) that shows the amount of GHG emitted in whole processes from the extraction till the end point where energy is finally consumed should be adopted in the official discussion or policy making process and etc. on the problems of GHG emission.
I think it is indeed unreasonable that the problem of the claim change is still discussed at the official places based on the GHG value emitted at only the end point where the energy is consuming and thus does not comfort to the practice of GHG emission by use of energy. Believe it or not, the emission value of GHG value of electricity based on FFC analysis is three times as much as that of LPG. I have indicated this irrational fact at all times. What are your thoughts on this?

MK
I understand the DOE of the US's government had brought this matter for the first time. In the LPG Charter of Benefits that WLPGA drew up last year, the GHG emission value of fuels and electricity are based on FFC analysis. My belief is the discussion or policy making on the GHG must be done based on the value by FFC analysis. Taking into account the strong influence of the electric industries in the world on both central and local governments, it seems to me that it is not easy for electric industry in the world to accept the use of FFC analysis value with regard to the problem of claim change.

■WLPGA has drawn up the LPG Charter of Benefits to promote the benefits of LPG

MU
WLPGA created the LPG Charter of Benefits last year for the first time. Let me know the significance of drawing up and the reason why you selected such timing.

MK
I know that there are many LPG distributors who are concerned about the decreasing demand for LPG in the developed countries in future where the demand for LPG is somewhat mature lately. I believe one of the reasons why the consumption of LPG is leveling off lately is that the nature of LPG, that is, especially the exceptional benefits of

use of LPG as a home energy has not been fully understood not only to customers but also to central and local politicians, energy administrative officials and stakeholders.
I believe that its responsibility exists in all the people including myself engaged in the LP gas industry in the world. As a matter of fact, from mainly LPG distributors in the world, a number of requests for pamphlet with which they can afford to strongly appeal the charm of LPG to customers, have increased year by year. In response to such requests, WLPGA created a document named the **LPG Charter of Benefits** based on the information and data from the worldwide authorized organizations last year. The original in English has been translated in ten languages so far and we asked KOAGAS NIHON CO the Japanese translation as well as its advertising in Japan.

MU

I esteem it a great honor to be assigned to the translation and advertising activities, and I greatly appreciate your kindness and support for us. Especially as to LPG Charter of Benefits, I am pleased with the fact that the problems of GHG emissions of electricity and LP gas are discussed and evaluated based on FFC analysis value (Carbon Foot Print measurement). You can see the LPG Charter of Benefits in Japanese (Japanese Version of LPG Charter of Benefits) by visiting the website of KOAGAS NIHON CO.

MK

As you know, Mr. Pedro Gorge Filho, president of Ultra Gaz was elected president of WLPGA on the first day of the 30th WLPGA annual general assembly held in Marrakech in Morocco in October last year. I know both companies have been further strengthening the business relationship since the business collaboration agreement was concluded seven years ago. As you know, Ultragaz is a top player selling 1.7 million tons of LPG a year with a 25% share in sales volume in Brazil. I do expect the activities of our association led by Mr. Pedro Jorge Filho will be more activated by your further commitment for the WLPGA. Because I know that you have a many good acquaintances within our LPG industry that you have had through your presentations or talking at the Forum etc.

MU

I greatly appreciate your valuable talks today. I would like to have the talks this morning reflected to the management of my company by all means. Let's make efforts each other to have the sustainable growth of LP gas industry continued even in future. I look forward to seeing you again at the World LP Gas Forum to be held in Huston, Texas, the US in

coming October. Thank you so much again!