Pioneering Gas Technology in Malaysia

Malaysia has a huge amount of potential for power generation when it comes the gas industry. Imbued with a wealth of natural gas that can be exported and utilized in domestic power plants, Malaysia also has a flourishing palm oil industry which allows the potential for co-generation, biogas and bio-fuel applications. To learn a little more about these industries, and about what can be achieved in Malaysia, we spoke to the President and CEO of MWM Asia Pacific Pte Ltd, Ruprecht Lattermann. Recently taken over by Caterpillar, MWM is entrenched in the Malaysian gas-fired power generation industry.

INTERVIEW WITH: RUPRECHT LATTERMANN, MWM

Ruprecht, thank you for taking the time to speak with us. Since the takeover of MWM by Caterpillar in October 2011, has the strategy or operation of MWM Asia Pacific changed?

In the near-term, the strategy, by and large remains unchanged. Caterpillar has embarked on a dual-brand strategy; as well as the traditional Caterpillar distribution organization selling CAT-branded products, the traditional MWM distribution organization continues to sell MWM-branded products under the umbrella of our parent company.

On the MWM side, we continue the implementation of our action plans developed for each country, with the objective of growing the MWM business in collaboration with our distribution partners.

The dealers for the respective brands continue to compete and complement each other with the differently branded products with the respective product advantages for the individual requirement and their respective strengths in the market, to the benefit of the parent company.

How is MWM represented in the Malaysian market?

MWM is represented in the Malaysian market by our authorized dealer, SP Energy Sdn Bhd. Led by Mr. Kebir and Mr. Zihanz and with coverage across East and West Malaysia, they have established MWM as the leading brand for cogeneration natural-gas power plants in our performance category. From MWM Asia Pacific Pte. Ltd., the Asia Pacific regional headquarters of MWM GmbH, we actively support our local dealer in Malaysia with marketing, sales and after-sales support.

How do you cover both the West-Malaysian and East-Malaysian part of the country?

SP Energy Sdn Bhd has representatives focused on handling enquiries across East and West Malaysia. Most of our customers in East Malaysia either have their headquarters in the capital city Kuala Lumpur or have at least an office there. This being the case, with our dealer SP Energy Sdn Bhd also headquartered in Kuala Lumpur, communication and project handling for projects in the Eastern part of the country is quite easy.

In 2010, MWM delivered 15 units of TCG 2032 V16 type within three months for a 60 MW project in Bangladesh.

All stages of the projects are handled from enquiry stage to commissioning are directly undertaken by SP Energy Sdn Bhd. Dedicated project managers are assigned to sites to oversee installation and commissioning, and application engineers work in tandem with MWM counterparts.

Which is MWM's main focus in the Malaysian market? Is there a medium to long-term direction?

There are two main thrusts in the strategy for MWM's business in Malaysia. Our near to medium-term focus is the growth of biogas power plants, which are strongly supported by government initiatives such as the preferential feed-in tariff. MWM has products perfectly suited for these market segments. MWM's medium to long-term focus is on the increased acceptance and viability of distributed cogeneration power plants fueled by natural gas.

How has MWM benefitted from Malaysian National Grid feed-in tariffs as a manufacturer of distributed power systems?

The feed-in policies for renewable energies have in recent times, been adjusted in favour for the implementation of distributed power systems that employ renewable energies. The highest feed-in tariffs are for small hydro and solar photovoltaic, followed by biomass (inclusive of municipal solid waste) and biogas (inclusive of landfill/sewage) sources. The increase of installations of MWM powered biogas power plants is a direct result of these feed-in policies.

Can you give us a few examples of MWM's success in Malaysia?

Our market success in Malaysia is founded on the excellent, the well-recognized technical expertise of our local dealer SP Energy Sdn Bhd, and the relentless marketing efforts of the key members of our dealership.

In the biogas segment, a very well-recognized customer is Bukit Tagar Landfill, where there are multiple units of MWM TCG 2020 range gensets installed. Besides waste management and landfill application, MWM also has a foothold in the palm oil industry of East and West Malaysia. From the distributed cogeneration power plants segment, based on natural gas as the fuel, MWM has secured the lion's share of glove manufacturers, including Top Glove and WRP as its customers.

The Melbourne Water Corporation operate 7 MWM gas gensets (TBG 620 V16 K) to ensure the reliable sanitation and water treatment.

The Mannheim training centre students learn theoretical knowledge and practical use of gas engines

Malaysia is one of the biggest palm oil producing countries of the world, an industry closely associated with biogas production. What are the key drivers for an enhanced utilization of the waste waters from palm oil production for electricity generation and co-generation?

Palm oil mills require electric power and heat for their processes. The location of palm oil mills are often remote, and in the center of huge plantations where electric power from the national grid may not be readily available. In this case, decentralized power generation utilizing waste heat is key. Furthermore, the huge amount of waste water with substantial organic content provides the foundation for decentralized fuel production for a captive power plant. Anaerobe digestion turns the waste water into biogas fuel that can run a plant.

Prior to combustion in the gas gensets, it is critical to have a gas-purification system in place to meet the gas purity criteria imposed by the power plant components, in order to ensure longevity and optimized efficiency/reliability of the complete system. So, a key driver is the seamless integration of the waste water processing system and the power plant system, whilst at the same time ensuring that methane generated during the decomposition process of the waste water does not enter the atmosphere.

Whilst being a key driver, the remoteness of the palm oil mills can be a disincentive. Because of the amount of organic waste water available from the oil-milling process, excess power can be generated that could be sold to the national grid. However, with the national grid either not being available, or potential consumers for the excess power so far away from the production, transportation losses do not allow this to be a viable additional advantage.

Do you regard palm oil as a threat to MWM's gas-genset business? Is MWM working on engine developments to burn palm oil?

Yes, we are aware that palm oil can be directly used to operate diesel engines. Some industrial engine manufacturers have initiated engine development to burn 100% palm oil. Furthermore, in the automotive sector, all modern automotive diesel engines are designed to burn diesel fuel mixed with a certain percentage of palm oil.

So palm oil is regarded more a replacement or complement to fossil diesel fuel rather than a replacement for gaseous fuels. Engine developments directly burning palm oil are not regarded a threat to the gas-genset business of MWM.

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The 30-acre landfill in Ämmässuo (Finland) uses landfill gas from anaerobic digestion to power four TCG 2032 V16 engines.

Malaysia is also a significant natural rubber producer. Does MWM participate in this market? Does it have a similar potential for biogas production like the palm oil industry?

You are right, Malaysia is one of the biggest natural rubber producing countries, and during the rubber manufacturing process, organic waste water is being produced. However, compared to the amount of organic waste water produced in the palm oil milling process, the usable amount is very small, so we do not regard the rubber industry a core target market for our biogas generator sets.

However, I have mentioned earlier that MWM is the market leader in the Malaysian glove industry. Glove production is part of the rubber industry, and has natural gas applications, so the natural rubber industry in Malaysia is very much in our focus at MWM.

Malaysia is a large natural gas producing and exporting country. Compared to the huge natural gas production, we have observed few natural gas fired decentralized energy systems in Malaysia. What is the reason behind this?

Your observation is correct. We see two main reasons for the relatively low penetration of Malaysia with natural gas fired decentralized power systems. Firstly, the export of natural gas enjoys priority in Malaysia. Quotas are defined for domestic consumption and for export. The quota allocated for domestic consumption is almost entirely absorbed by the large, gas-fired power plants forming the national grid, so there is little gas available for decentralized power generation with natural gas.

The second reason for this is that the pricing of natural gas remains a major factor in driving financial viability of the installation and the pipeline distribution network for the natural gas. With the current gas pricing in Malaysia, natural gas fired, decentralized energy systems are only financially viable if a high degree of waste heat utilization can be achieved.

Are the off-shore gas fields and the onshore gas processing plants a market for MWM gas-gensets?

MWM products can be engineered to burn many types of gas, including flare gas from the off-shore industry. The off-shore gas fields and the onshore gas processing plants present an opportunity for MWM. We had some successes with our gas-gensets in the market of off-shore platforms and floating storage & processing vessels that we continually look to develop further.

Are there any other specific industries MWM is targeting in Malaysia?

Synthetic gas applications require class-leading technology gas engines that MWM has available and in Malaysia, we have started to receive enquiries from industries with proposals to install synthetic-gas power plants for own-consumption and/or electricity sales to the power grid.

Since the takeover by Caterpillar, which new products has MWM launched that benefit coverage of the Malaysian market?

During the last two years MWM has launched products with increased electrical efficiencies. Furthermore, we have hardened all our generator sets against adverse effects from the grid for mains-parallel operation. These new developments help us to keep MWM in the fore front worldwide. They also help us in the Malaysian market, especially in mains-parallel operation, where the grid stability in terms of voltage stability and power factor stability cannot be taken for granted.

What are the typical unit sizes of gas gensets used in Malaysia? Did MWM observe any trend towards larger or smaller unit sizes?

For biogas power plants, the typical installed capacity ranges from 400kW to 3MW and for natural gas power plants the typical installed capacity ranges from 1MW to 10MW. Given an increased availability of natural gas for domestic consumption and thanks to the relentless efforts of our local dealer SP Energy Sdn Bhd, and an increasing awareness in the industry of the advantages of biogas fuelled co-generation and tri-generation systems, the trend for both biogas power plants and natural gas power plants is towards larger installed capacities, employing larger per-unit capacity MWM gas gensets.

Which direction do you expect the Malaysian market to take and is it well aligned to MWM's strategy?

Normally, as the manufacturer of gas generator sets we do not primarily define which direction the market in Malaysia takes. But from our perspective, which ever direction the market takes, we will carefully observe and analyze market trends and we will immediately adapt our market strategy to the changing market requirements. MWM has done this successfully in the past and will be able to sinfluence and follow the market trends as it may be required.

Which other market does MWM focus on in South-East Asia?

Later in 2013, the first LNG terminal will go operational in Singapore. With LNG becoming available in Singapore at an unprecedented level, the opportunities for MWM will increase greatly. You can be sure, MWM will not miss these opportunities. With Singapore also being a role model for the entire South-East Asian region, successful MWM case studies from Singapore will also help us grow our market opportunities in the entire region.

May be not yet for the next issue of the PI Magazine, but for an issue later next year, we might be able to proudly report a significantly increased number of success stories of MWM from the Singapore market, compared to what we would be able to present today.