
Spotlight

Exclusive Interview with Mak Kok Yun

Head of Department (Quality, Safety & Health), Perbadanan Bekalan Air Pulau Pinang Sdn. Bhd. (PBAPP)

PUB: Please tell us about yourself and the organisation that you work in.

Kok Yun: I have been working in Penang Water Supply Corporation (Malay language: Perbadanan Bekalan Air Pulau Pinang Sdn. Bhd.), PBAPP, since 2002. This is my 17th year of service here. Prior to that, I had worked in a hard disk drive company and as a researcher in university. During my tenure of service in PBAPP, I have worked in the areas of QA/QC, materials approval, ISO management systems (ISO 9001, ISO 14001, ISO 45001, ISO/IEC 27001 & ISO/IEC 17025), research & development, green technology, public education & awareness on water conservation.

PBAPP, incorporated in 1999, is a 100%-owned subsidiary of PBAPP Holdings Bhd, a company that is listed on the Main Board of the Malaysian Bourse (Bursa Malaysia). With a strength of around 1,400 staff, PBAPP serves 1.77 million people in Penang State. PBAPP is one of the leading utilities in Malaysia that has achieved a low non-revenue water (NRW).



Education Awareness Programme at PBAPP College

PUB: Could you tell us more about the situation of the water sector in Penang? Which issues in particular do you think are most important/are most pressing?

Kok Yun: Penang is a water scarce state. More than 80% of potable water supply comes from Sungai Dua Water Treatment Plant (WTP), where PBAPP abstracts raw water from the Muda River. This is at the border between Kedah and Penang State. The raw water flows through a 14 KM canal to the said water treatment plant. In recent years, PBAPP is very much concerned about legal and illegal logging activities in the Ulu Muda Catchment, which is located upstream of Muda River. Located in Kedah State, Ulu Muda is the most important water catchment area in the Northern Corridor Economic Region (NCER) of Peninsular Malaysia. About 70% of Perlis State's raw water, 96% of Kedah State's raw water and more than 80% of Penang State's raw water come from Ulu Muda.

In general, the water supply for 32.6 million Malaysians and all the businesses that operate in Malaysia is highly dependent on the well-being of the water catchment areas and rivers. However, water operators in Malaysia have no legal jurisdiction to protect and conserve the rivers where the raw water comes from. Hence, this creates challenges to water operators if the raw water is polluted.



PUB: What are some of the key water management challenges that you are tackling in your projects with PBAPP? What are some personal stories that you have garnered, based on your experience in these projects?

Kok Yun: There are two key water management challenges that we face:

Firstly, Penang domestic users consume the highest amount of water per capita per day (LCD) in Malaysia, i.e. 278 LCD in 2018 versus national average of 209 LCD.

Penang's domestic water tariff is the lowest in the country. The tariff is RM0.32/month for the first 35 m³ compared to national average of RM0.69/month. This does not reflect the actual cost of potable water, and this is one of the factors that cause the public not to value the water. Behavioural change is essential to ensure that Penangites conserve the water. Yearly, there are public awareness programmes conducted together with local authorities, regulators, schools and NGOs. Despite a slight reduction in consumption per capita per day compared to five years ago, more can be done. PBAPP had successfully convinced Penang State for mandatory installation of water saving devices for all new development projects started after late 2017. Meanwhile, PBAPP is currently promoting the installation of water saving devices especially at religious centres to encourage further savings on water consumption.

Secondly, water treatment residue that contains aluminium is classified as scheduled wastes in Malaysia under the Environmental Quality (Scheduled Wastes) Regulations 2005. It has been a challenge for all water operators in Malaysia to comply with this regulation on top of the Environmental Quality (Industrial Effluent) Regulations 2009.

In general, water operators in Malaysia previously focused only on the high percentage of NRW and putting in place a reasonable and sustainable water tariff. With the scheduled wastes regulation, all water operators have no choice but to look for long term and sustainable solutions to deal with the wastes. However, it is not easy to comply with these regulations

R&D by PBAPP has led to the use of the water treatment residue for clay brick production. PBAPP bricks comply with the Department of Environment standards. We hope this solution can be duplicated by other water operators in Malaysia. There is high potential to turn the water treatment residue into even more valuable products.



Introducing Clay bricks made from water treatment residue to Minister of Energy, Green Technology and Water during International Greentech Eco Products Exhibition

PUB: There is a need for global collaboration to co-create solutions that address the world's water challenges. The Singapore Water Academy has a broad alumni network, comprising management executives and technical staff. What possible collaborations do you see between your organisation and other alumni?

Kok Yun: Nowadays, many organisations talk about the circular economy. Being part of the Singapore Water Academy alumni network provides opportunities for PBAPP to collaborate , with other potential partners or technology providers to manage water treatment residue and subsequently find a sustainable solution to either reuse or up-cycle it to more valuable products other than clay bricks. The circular economy is the way forward.

In addition, we are looking forward to the exchange of ideas on water demand management, especially initiatives and programmes touching on education and awareness to encourage the public to conserve water. I hope we can work with the Singapore Water Academy and its broad alumni network to promote water conservation programmes.

PUB: You attended the Singapore Water Management Series Water Quality Management course. What are some of the valuable takeaways from this programme for you?

Kok Yun: I feel fortunate to have a chance to meet with water industry experts through the Singapore Water Management Series on Water Quality. PUB had organised a successful event where the participants were exposed to current and upcoming issues on water management. I am amazed with the extensive coverage of water quality sampling that PUB does in a year. I also learnt that a Water Safety Plan is a good approach to ensure all health risks concerns are addressed and covered with appropriate mitigation plans. Through this programme, all participants could contribute and share their ideas and experience. I benefitted a lot from the course.