

Food for Thought

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Treated Water Demand Side Management Is Vital For Malaysia To Be Water Efficient

SUNDAY, SEPTEMBER 22, 2013 | Comments(0)

LETTER TO EDITOR - 19th September 2013 (Thursday)

Treated Water Demand Side Management Is Vital For Malaysia To Be Water Efficient

Community based treated water supply was the base for development of coordinated water supply system. Over the years with increase in population and development, demand for treated water is always on the rise. In addition to that, demand zones are no longer community based. Some of the demand zones lay far away from the water resource itself. With advancement in technology, it became engineering possibility.

Infrastructures and operation systems do get worn out over time and makes the water treatment and supply process inefficient and you will pay through tariff for inefficiencies. Developing nations cope with inefficiency as well as increase in treated water demand by planting up new water treatment plants. This is not a sustainable engineering solution. Should Malaysia fall under the same category? As of year 2012, there are 473 water treatment plants in Malaysia with a total of 17901 Million Litre per Day (MLD) design capacity.

Association of Water and Energy Research Malaysia (AWER) has continuously conduct research and modelling to ensure right policies and technical advancements are put in place. This gave birth to our 3C50 Model. Through this planning tool, AWER is able to ensure and assist the government agencies the right direction.

Our first success in implementing 3C50 model for demand side management was the formation of National Non-Revenue Water (NRW) Reduction Task Force to implement a detailed NRW Reduction Action Plan for Malaysia. After a long battle, the cabinet approved the formation

of the taskforce under Suruhanjaya Perkhidmatan Air Negara (SPAN). Annually, estimated loss of revenue due to NRW is above RM 1.6 billion. By ensuring the government is serious in NRW reduction, financial model was created by AWER to enable the nation to see how much treated water is actually wasted in Ringgit. The NRW Reduction Action Plan is now almost complete and gives a comprehensive approach to reduce NRW in Malaysia. For example, a 30% reduction in current NRW levels nationwide continuously for 5 years will be equivalent to building a slightly bigger Langkat 2 Treatment Plant with additional capacity through savings.

In Perlis, the NRW level increased from 59.8% in 2011 to 66.4% in 2012. This value is not due to failure of the authority to reduce NRW. This is basically because of increase in pressure in the water supply system due to completion of a new water treatment plant. This also shows that building more treatment plants will not solve the demand increase. In return, it will increase the NRW values dramatically due to aging infrastructures. This is a classic example why AWER pushed for a stricter NRW reduction action plan with detailed mechanisms including funding.

The issue of funding brings to the second plan under 3C50 model, that is the completion of National Water Services Industry Restructuring by year 2013. The water services industry restructuring process should have been completed by the end of 9th Malaysia Plan in year 2010. Ministry of Energy, Green Technology and Water (KeTTHA) is 3 years behind schedule and this is delaying the plans for water services industry in the 10th Malaysia Plan. Early second quarter this year, AWER has met up with Secretary General of KeTTHA and her officers to discuss this matter in detail. The outcome was in favour of restructuring process and it was agreed that by end of year 2013, the restructuring process for Selangor, Kedah, Terengganu, Pahang, Kelantan and Federal Territory of Labuan will be completed. This is the Key Performance Index that all of us should be monitoring for KeTTHA together.

2/3 of treated water is consumed by domestic consumers in Malaysia and suitable demand side management strategies are vital to assist them to reduce water consumption effectively. Based on series of consultation process, market survey and testing conducted by AWER over the past 18 months, an online tool, Catch d' Hydro, was developed under the same 3C50 model via funding from Community Innovative Fund (CIF) by Ministry of Science, Technology and Innovation (MOSTI). This tool will assist domestic consumers to measure their water consumption for various activities at home and to help them to identify high water consuming activities. This calculator can now be accessed directly via www.water.org.my or www.awer.org.my (under H2O tool section).

AWER used "gate to gate" method from Life Cycle Assessment (LCA) approach to derive Catch d' Hydro and establish a water footprint for a household. In addition to that, this calculator is also open for international users. World Health Organisation (WHO) has recommended 165 liter/capita/day of water for daily use and based on official statistics released by SPAN, the national average water consumption is 212 liter/capita/day for year 2012. This is an increase from 210 liter/capita/day in year 2011. By bringing down water usage close to 180 liter/capita/day, Malaysia will have an additional treated water capacity close to 1000 Million Liter per Day (MLD). This can be done by domestic consumers alone without spending money.

With these three components in place, the first phase of Demand Side Management strategy by AWER for treated water can be successfully

implemented. Once several selected parameters achieved, we will reveal the second phase of the Demand Side Management strategy. Now, KeTTHA and the respective state governments must ensure the water services industry restructuring complete by this year. This is a key element in moving forward in demand management and improving our water services industry.

Based on conservative estimations in reducing NRW and keeping domestic water consumption in efficient levels, we would be able to save more than RM 9.09 Billion between 2015 and 2025. Commercially, it can be 2 or 3 times the savings estimated. So, being Water Efficient does mean a lot in Ringgit. What are we waiting for?

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President

Association of Water and Energy Research Malaysia (AWER)

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