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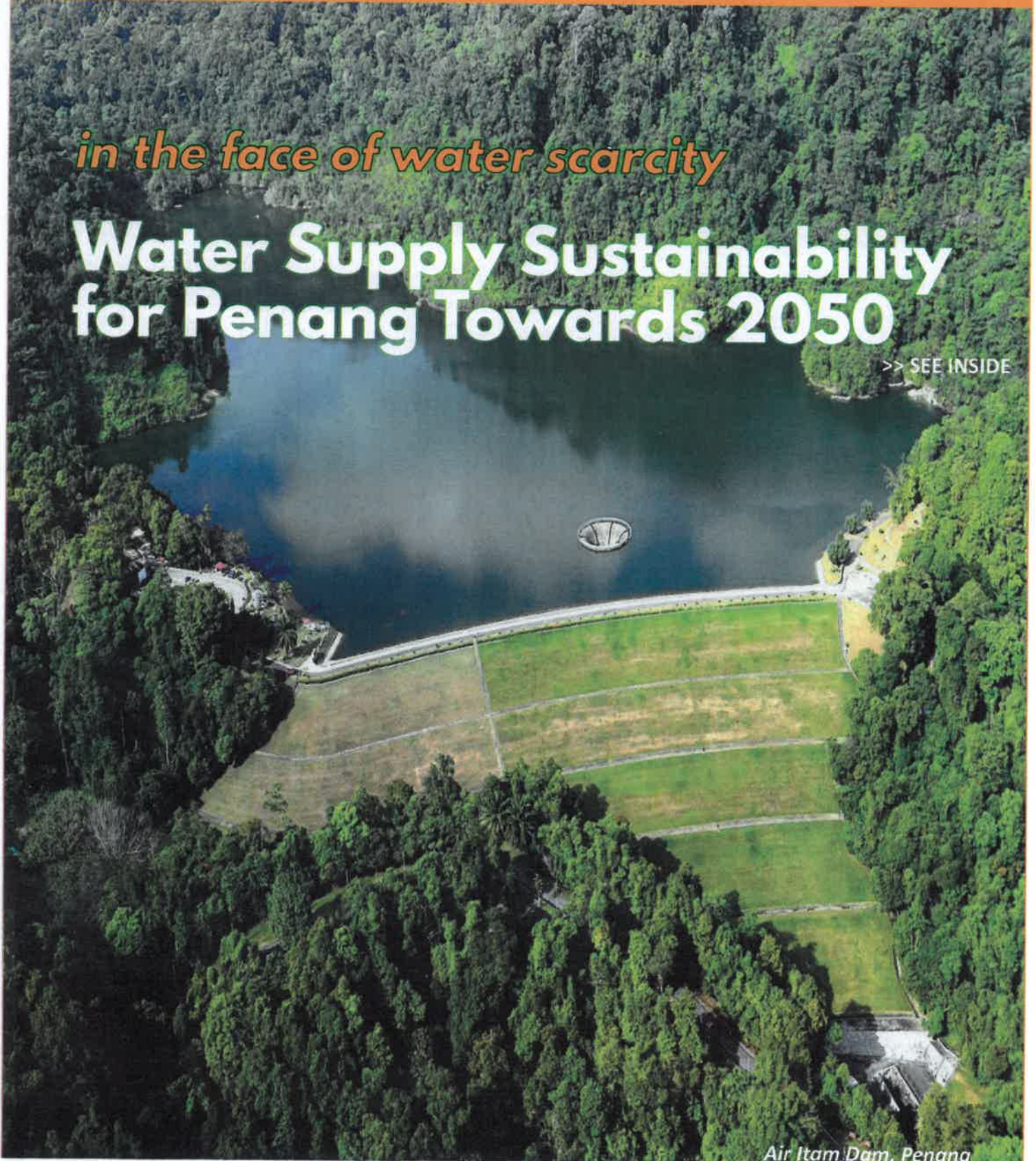


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in the face of water scarcity

Water Supply Sustainability for Penang Towards 2050

>> SEE INSIDE



Air Itam Dam, Penang

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EXCLUSIVE INTERVIEW DATO' Ir. JASENI MAIDINSA

The scenario of water supply, its tariff, management, technology and sustainability in Penang has made Perbadanan Bekalan Air Pulau Pinang (PBAPP) an outstanding utility company in the country. The man behind the wheel, Dato' Ir Jaseni Maidinsa, a civil engineer and the CEO of PBA Holdings Bhd and PBAPP, and the recipient of the IEM Penang Branch Distinguished Engineer Award 2018, talked to *Ingenieur Penang* on 29th January 2019 at his office in KOMTAR. He talked enthusiastically about his mission and vision in the water supply industry in Penang State and nationwide.

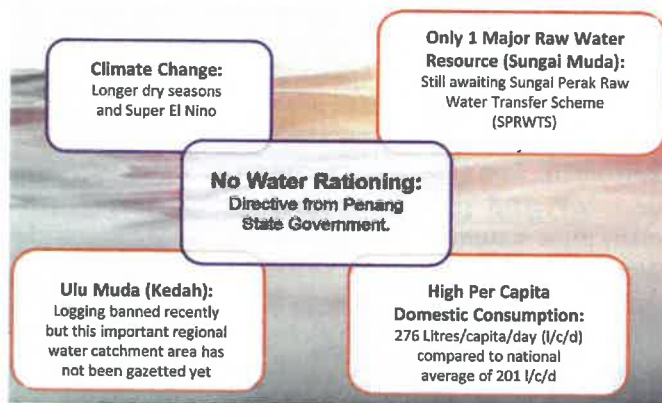


Interview with Dato. Ir. Jaseni at the PBA office, Penang

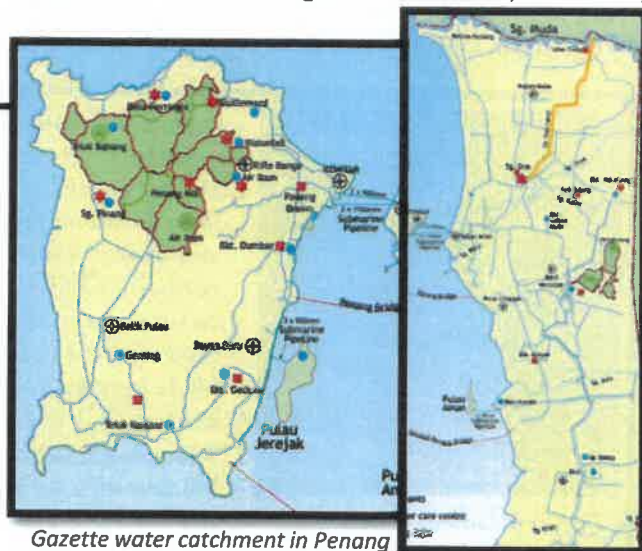
Ingenieur Penang: Dato', you have spent your entire career in the water supply industry in Penang, beginning with a Distribution & Workshop Engineer since graduation until you became the CEO of PBAPP. How would you sum up your experience and achievement from the perspective of a civil engineer?

Dato' Ir Jaseni: I have worked for 34 years in the water supply industry since graduation in 1985 and I can proudly say that it is a very satisfying and rewarding career. You are directly involved in supplying a basic need to the people, an essential human right matter. Through good quality water supply, it has brought about quality lives, good brains, improved education and standard of living.

We help Penang maintain its position as hubs for high-tech industries, education, tourism and hotels.



Penang's 5 key challenges



Gazette water catchment in Penang

Ingenieur Penang: What are the major challenges and obstacles that you have faced?

Dato' Ir Jaseni: We must always plan ahead and have contingency plans. I always tell my engineers that we water engineers work 9 months of the year to make sure that we have enough water supply for 3 other months of the year; and that there must be no water rationing. We must consider climate change, longer dry season etc. in our storage design. In water supply conferences, I recommended designing dams for 180 days storage instead of

the conventional 100 days storage. In 2016, the dry season lasted for 6 months. Almost all the states in Malaysia had water rationing, but not Penang. We still hold that record.

To guarantee water supply, you must protect and gazette the water catchment. This is very important because the catchment is the beginning of the water supply value chain. But this is also the toughest task to tackle.

Ingenieur Penang: Dato', tell us about the gazetting of Penang State Water Catchment Areas.

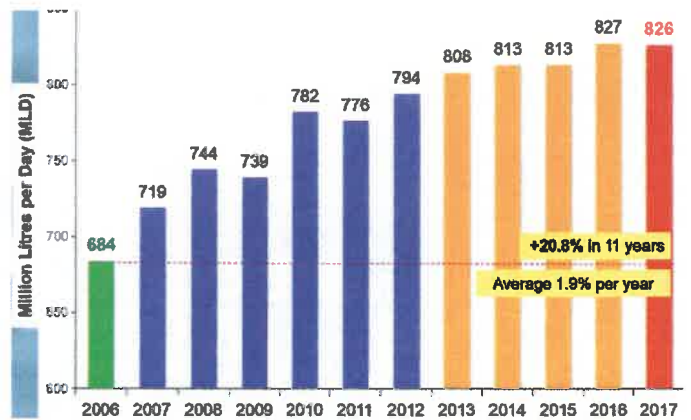
Dato' Ir Jaseni: It took us 14 years to gazette the water catchment in Penang. It was finally gazetted in 2004, and later amended in 2009. The gazette is a public document containing the map and a schedule listing down what you can do and cannot do in the catchment area. You cannot do anything upstream of the intake (an intake refers to a normal water intake structure or a dam), not even a hiking track. At downstream of the intake, there is a buffer zone where you are only allowed to carry out eco-friendly activities.

Ingenieur Penang: Dato', could you tell us a about the Penang Water Services Academy (PWSA) and how far has this programme achieved its goals?

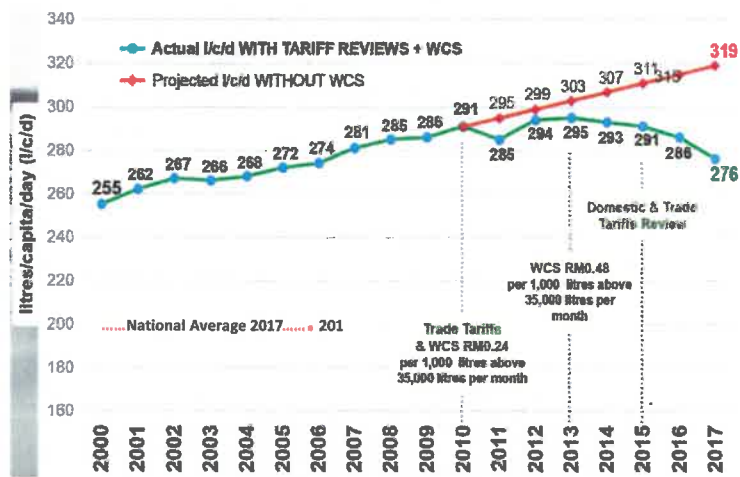
Dato' Ir Jaseni: This is something I am very proud of. The Water Services Industry Act 2006 states that "the workforce must be competent". I must first make PBA staffs 100% competent. This is how we started the academy in 2007, to provide technical vocational courses and training to make the staffs competent. We are the only one accredited in Malaysia and we trained all the water operators in the country besides PBA's own staffs. We have trained over 4000 students. We admit existing water operators and Form 5 school leavers. They are highly sought after by the water operators even before their graduation.

Ingenieur Penang: Dato' I remember when you delivered the IEM Distinguished Engineer Legacy lecture recently, you mentioned that Penang has the highest per capita domestic water consumption in Malaysia, can you tell us the reasons for this scenario?

Dato' Ir Jaseni: Firstly, we sell the cheapest water in the country, or maybe in Asia. At an average of 32 cents per cubic meter for the first 35 cubic meter. The average water consumption in Penang was 276 litres per capita per day. The national average is 201 litres per capita per day and our target is 180 gallons per capita per day. Singapore made it at 143 litres. It has managed to make it sustainable at that level because of the right price of water there, which is 14 times more expensive than us. People tend to be more frugal, just like in electricity consumption. Right now, the water is so cheap in Penang that people don't feel anything.



Penang's water consumption from 2006 to 2017 shows a 20.8% increase over the 11 years



Penang's per capita domestic consumption (2000-2017) relative to national average



The Ulu Muda's catchment plays significant roles in supplying water to the 3 northern states.

Ingenieur Penang: Dato', again in your Distinguished Engineer Legacy Lecture, you mentioned on the urgency of conservation and gazette of water catchment areas in Ulu Muda. Can you tell us why and whether there has been significant achievement so far?

Dato' Ir Jaseni: We know that Ulu Muda supplies 80% of the water required by Penang, almost all of Kedah's water, and 70% of Perlis'. In my argument, it is also the entire northern region's water catchment. Don't you want to protect it? That's why it has to be seen as a national issue.

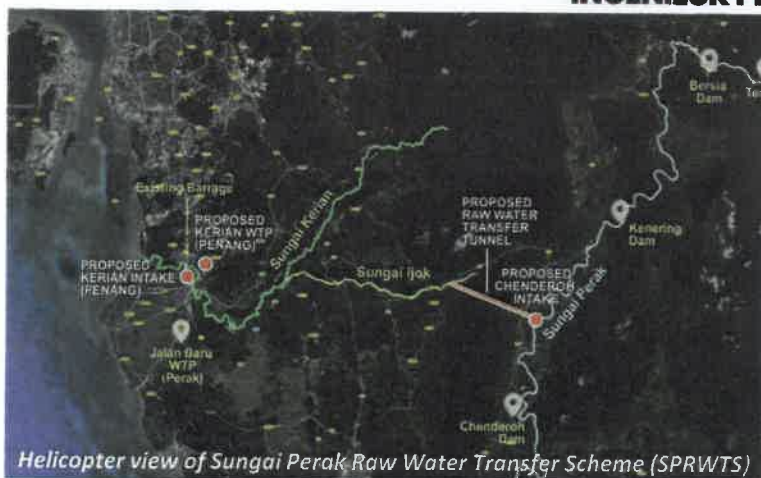
After all these years, so many press statements and all, we have the launching of Ulu Muda campaign on our World Water Day in June last year. And now I have been working with YB Nurul Izzah, the MP for Permatang Pauh where our biggest dam is (Mengkuang Dam), and got her support. After that the minister went to Kedah, and the MB says they are stopping logging activities. However, not only must you stop logging, you have to gazette it! I am now working with the Federal Ministry to push for the gazette of the water catchment.

Ingenieur Penang: Dato', on water supply sustainability for Penang, apart from the catchment in Ulu Muda, you mentioned before that PBAPP is also working on alternative water supply from the Perak State, how does this work and whether you have the support from the Perak State government and the federal government?

Dato' Ir Jaseni: We always plan ten years ahead. You see, in 2009 we

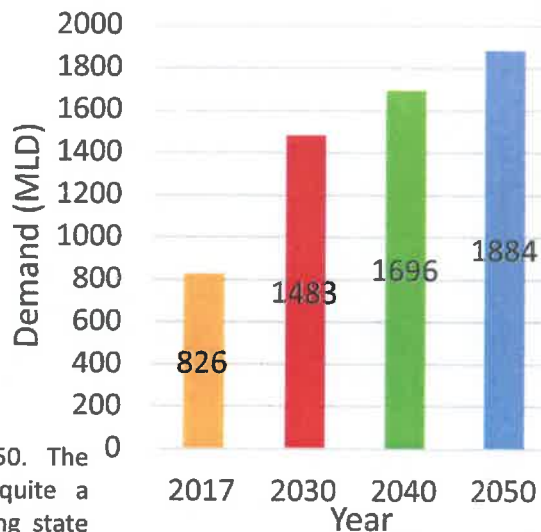
commissioned a study on portable water supply for Penang until 2050. We identified the helicopter view of the water supply between Perak and Penang and developed the Sungai Perak Raw Water Transfer Scheme. This benefits not only Lembaga Air Perak, it also benefits JPS for irrigation, and of course, Penang. This idea is endorsed by SPAN, but Perak is not keen. We want to buy raw water, whilst they only want to sell treated

water, even though there is no interstate treated water in Malaysia. There is only interstate raw water supply to cut down cost. The last meeting was held in March 2015, chaired by Kementerian Tenaga, Teknologi Hijau dan Air Malaysia (KETTHA) but nothing has moved. We have briefed the new Minister now and pushed to start the negotiation again.



Helicopter view of Sungai Perak Raw Water Transfer Scheme (SPRWTS)

Million Litres per day (MLD)



Penang's projected water consumption

Ingenieur Penang: Apart from increasing water catchment and treating more raw water, how can PBAPP ensure continuous water supply sustainability for the people of Penang in the long run?

Dato' Ir Jaseni: As early as 2009. We have calculated that whatever Sungai Muda can provide, it will reach its limit by 2025. When future additional demands come in, it can only be met by Sungai Perak. That's why we identified the project which should

meet our demand until 2050. The Sungai Perak catchment is quite a distance away from the Penang state and will involve constructing a tunnel.

Of course, we also review the tariff, our long-term plan is to slowly increase the price to reflect the cost and to change the public mindset so as to reduce domestic consumption. As part of water demand and usage management, we also educate the public and promote the use of water saving devices.

PBAPP's findings from installing WSDs:			
Type of Fittings	Before (litres/minute)	After (litres/minute)	% Savings
Basin Tap	12 - 16	Self-shutting type: 2	83 - 87%
		Tip touch type: 6	50 - 63%
Bib Tap	12 - 15	5	58 - 67%
Shower	14 - 20	12	14 - 40%
Sink Tap	12 - 18	6	50 - 67%

Savings achievable with WSDs installation

Experts move to protect Ulu Muda

The Star Online Monday, 25 Feb 2019



Water source: A boat crossing the Muda Lake near Gubir in Sik, Kedah, which forms part of Ulu Muda's vital water supply to Penang, Kedah and Perlis.

More than 100 scientists and naturalists will start documenting the extensive flora and fauna in the 162,000ha Ulu Muda Forest Reserve in an effort to push for its total protection.

For the next two years, scientists will arrive in teams and produce research from this forest, which is twice the size of Singapore and is a crucial source of water for Penang, Kedah and Perlis.

Organised by the Malaysian Nature Society (MNS), the project will see experts taking plant and fish samples, setting up motion-sensor cameras along animal trails and even analysing pharmaceutical properties of non-timber growth in the primary jungle.