

Reconnecting technology with the price of desal

The world of water, through the eyes of GWI publisher [Christopher Gasson](#).



Does technology have anything to do with the price of desalinating water? This is the question I was left asking myself after Utico was awarded the contract for the 545,000m³/d Hassyan desalination plant in Dubai with a record-breaking \$0.277/m³ tariff this week. It is a dramatically low price. Even though it was assisted by a long contract term (35 years) and a low energy price (\$0.025/kWh), I doubt that there is anyone in the industry who would have thought such a figure would be possible, even as recently as one year ago.

The strangest thing about it is that there seems to be no big technology breakthrough associated with the deal. When desal first broke through the \$0.70/m³ barrier nearly two decades ago, it was largely because of three technological advances: isobaric energy recovery devices, high-flux reverse osmosis membranes, and a single pressure center. The journey from the \$0.53/m³ bid at Ashkelon in 2003 by IDE Technologies to Utico's \$0.277/m³ bid at Hassyan has largely happened as a result of lower energy costs associated with solar power, falling capital costs, and aggressive low pricing in EPC contracts. When you ask the people, who designed these plants how they managed to bid so low, they generally say things like "there was a whole lot of stuff we discovered we didn't need" or "we cut out some of the redundancy".

So where does that leave the contestants in last week's Water Technology Idol competition? They have spent a lot of time and effort developing technologies, the benefits of which could easily be dwarfed by shaving 20 basis points off the cost of debt or by a crazy low bid for an EPC contract which loses someone a fortune. Perhaps the winner – Veolia Sidem's Barrel – could provide the solution. The technology uses a smart connector device to make it practical to put hundreds of membranes in a single pressure vessel for the first time. This delivers a small saving in the energy, a larger economy of scale in construction, a compact plant footprint, and better data on membrane performance, but that is not the point. The Barrel was not just designed to lower the cost of water. It was also designed to enable Veolia to avoid the crazy risks of EPC contracts.

The Barrel is a modular plug-and-play system that Veolia can sell to other EPC contractors who don't know much about desal, but do know how to manage risks in large contracts. It seems inevitable that this is the direction the market is going to go in: as projects get bigger, the non-process risks seem to tower over the incremental improvements in technology. Perhaps drawing a clearer line between the construction side and the process side of a desalination project will also make it easier to focus on improving the technology again.

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