



Australia's largest smart low pressure sewer system accelerated the robustness and maturity of OneBox®

The Peninsula ECO project in Melbourne's south east commenced in 2015 and is expected to take a little over a decade to remove and replace around 16,500 septic systems (many of which are failing) between popular seaside havens Rye and Portsea. They're being replaced with a low-pressure sewer system controlled by the Iota OneBox®.

It is the single biggest smart low pressure sewer scheme in Australian history. Already ahead of schedule, with over 6500 systems installed to date, the project will eventually remove 7.2 million litres of wastewater from the Mornington Peninsula, resulting in cleaner groundwater, beaches and bays for everyone to enjoy. Over 1000 units are being installed each year.

Such an extensive deployment has given Iota a great insight into how to optimise the OneBox® over the course of the implementation to such an extent that early teething issues, such as nuisance alarms, have been all but eliminated, delivering a robust, proven solution for monitoring and controlling low pressure sewage systems.

The scale and duration of the PenEco project meant that the requisite payback was in place for South East Water to facilitate the development of a controller which was cost-effective and provided the advanced functionality to maintain and respond to such a large system, economically.



“South East Water has rolled out OneBox® across its \$256 million PeninsulaECO project – one of the largest pressure sewer projects in Australian history. The inclusion of OneBox® on that project significantly contributed to the \$100 million saving on the initial \$357 million cost, and allowed residents along its path to connect up to 16 years earlier than first anticipated.”

Charlie Littlefair
Liveable Water Solutions General Manager,
South East Water

A proven solution

Working collaboratively with our install and operation colleagues at South East Water, Iota is able to quickly identify and address potential enhancements. This has led to continuous improvement in the technology as the project rolls out. The scale of the PenEco network and close collaboration between design, install and operating colleagues has accelerated the product maturity of OneBox®.

Those firmware and software updates are largely automated and seamless, and carried out remotely via laptop, so there is no impact to the utility operators or the customer.

Continuous operator feedback from the PenEco network has enabled Iota to develop a user friendly, intuitive portal for operators to monitor and control individual units or the network as a whole.

Beyond the development of a smart controller Iota, in partnership with South East Water, continue to grow the suite of smart pressure sewer solutions. This includes the future release of a low-cost radar level sensor with both wired and wireless variants with extended design life and fully potted for reduced failure risk thereby driving down failure rates. The future release of a smart pressure pod with optimised storage capacity to suit a OneBox® controlled smart system is also pending.

The combination of the stable OneBox® controller, radar sensor, smart pressure pod and future pending OneBox® upgrade to multiple day battery back-up will provide South East Water with the cost effective, robust and low operating cost smart pressure sewer system it has been striving for.

The benefits in action

The OneBox® controls the pump and reports tank liquid level, pump status, alarm status and other data to operators in near real time. This allows South East Water to control flows remotely and reduce peak flows in the system.

“We have made several firmware and software updates over the course of the project in order to optimise the solution. A recent hardware redesign enabled enhancements in remote diagnostics and future-proofed device communications.”

Eamon Casey
Technical Director, Iota

The ability to control the wastewater flows during normal operation and following prolonged power outage minimises the need for large-diameter sewer pipes, and extra capacity at the treatment plant, making the system cheaper and less disruptive to install.

OneBox® also alerts the water authority to breakdowns or faults before the customer realises there's a problem, reducing the need for emergency callouts and avoiding spills.

Near real time alarms and continual monitoring enable South East Water to reduce the risk of spills and achieve more cost-effective maintenance as the operations team can diagnose issues remotely and schedule in-field maintenance to occur during working hours.

Who's behind OneBox®?

Iota is your smart water and wastewater partner.

We're owned by South East Water, an Australian water utility. We develop and commercialise innovations proven within the South East Water network, so the social and economic benefits can be shared with industry.



For more information,
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