Algae Power

Are wastewater nutrients the missing key to unlocking biofuels?

Drilling for the Truth

Hydraulic fracturing’s impact on water

Plugging Water Leaks

Cloud-based software solution prevails
TaKaDu CEO Peleg believes utilities can cut NRW by 50%.

With utilities losing up to 30% of their water supply through leakages, non-revenue water continues to plague the industry, despite the promise of “smart water grid” solutions. Israeli startup TaKaDu claims its cloud-based, mathematical led software solution holds the answer. Tom Freyberg speaks to the company founder to find out more.

To get a visual image of the financial damage leakages can cause, it’s important to compare the water sector to others. Imagine an agricultural wheat producer and distributor. Now imagine all of the effort required to grow crops, prepare, harvest and sort the wheat. Now imagine for every four lorries full of wheat sent off to customers, one lorry goes missing; it disappears on route and the lost money from the missing wheat cannot be recuperated. It’s a logistical nightmare. And certainly one any CEO or CFO of a company would take seriously. Yet this is the equivalent loss – 25% - experienced on average by water utilities every single day.

World Bank estimates suggest that on average up to 25-30% of a utility’s water is lost in the network as non-revenue water (NRW). Small leakages may not sound like a big deal to the industry outsider, yet worldwide this is estimated to cost $14 billion per year to utilities. That’s a lot of money and a lot of missing wheat...sorry water.

In developing countries, about 45 million cubic meters are said to be lost daily through water leakage in the distribution networks – enough to serve nearly 200 million people. More important is the World Bank suggestion that reducing countries’ NRW could generate an additional $2.9 billion every year.

As a result the market potential for “smart water grid” solutions – monitoring, detecting and reducing leakages – is inevitably growing. Industry analysts Frost & Sullivan detailed in the October-November issue of WW magazine that in Europe alone, smart water metering is expected to attract investment of $7.8 billion by 2020. And with strong government support for smart water metering, the European market is estimated to grow to $13.4 billion over the same period.

With such monumental water savings available from reducing water leakages, companies are working with utilities to address the problem. Yet the ‘new kid on the block’ – a three-year-old Israeli startup called TaKaDu – is winning headlines for integrating the water sector with “cloud computing”.

The idea is that this solution works alongside utilities’ existing infrastructure. Information from flow and pressure meters, GIS and SCADA systems, for example, is collected, “mathematically cooked”, as founder and CEO Amir Peleg describes it, and turned into “practical real-time picture and priorities”.

Describing how the system works, Peleg says that utilities can use a web interface to effectively see where leaks take place. The revolution, he says, is the ability to send repair teams to identified leaks in the middle of the night, in the winter, to fix them while nobody will notice. This compares to waiting till the morning and a phone call from an irate customer.

At the end of March Portuguese water utility Águas de Cascais (AdC) announced it had rolled out a Water Network Monitoring service from TaKaDu. AdC holds the concession for the supply of water and wastewater for the Municipality of Cascais, with over 1,300km of drinking water mains. In terms of cost to a utility, TaKaDu charges €7.80 per km per month. So for a utility rolling this out across a...
We are providing a monitoring service that can be viewed as a 24/7 watchdog," founder and CEO Amir Peleg tells WWi.

"By offering cloud computing, we provide an ongoing service and being in that position we can show that it is an OPEX charge. As an OPEX charge, the ROI (return on investment) is already there from day one. It's not like you need to buy equipment upfront that costs £5 million and need to wait three years for the payback. That's the beauty of the model of cloud computing and software solutions. You don't need to invest any capital expenditure to start with at all."

AeC may have been the first utility in Portugal to adopt this solution but elsewhere it's catching on. TaKaDu is even helping Londoners to save water. After UK utility giant Thames Water tested the system on 3,000 km of mains, it extended the company’s detection engine’s reach over the whole 10,400 km length of its urban mains network. While this scale of contract would suggest a monthly cost of just over €80,000 for the utility, Piers Clark, commercial director at Thames Water confirms the outgoing is not this much.

The detection engine was reported to have identified minor leaks up to nine days earlier than Thames Water’s existing systems, and picked up major bursts as much as 3.5 hours more quickly.

Speaking to WWi, Clark says: “We’ve been working with TaKaDu for over two years now and its been an important part of a suite of solutions. It’s not the only tool Thames Water uses, as leakage is a very complicated challenge to overcome.”