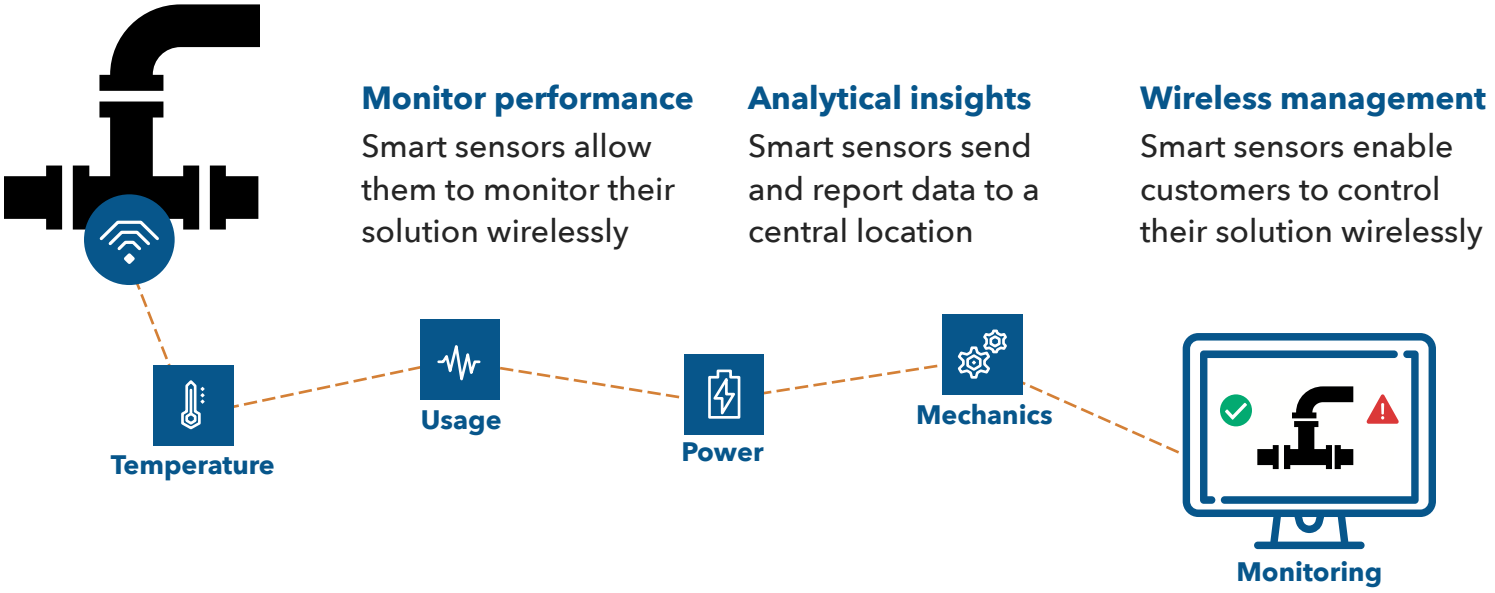
CLEANBLU TRANSFORMS HOW WE REUSE WATER WITH IOT

Particle

Executive summary

CleanBlu is revolutionizing the wastewater treatment industry with Internet-connected water reuse technologies. With the Particle IoT platform, CleanBlu has helped residents and commercial industries connect their water systems to the Internet so they can not only monitor and control them wirelessly but also operate them autonomously. With these new wastewater technologies, CleanBlu has made it so residents and commercial industries have access to water that is safe and clean to use.



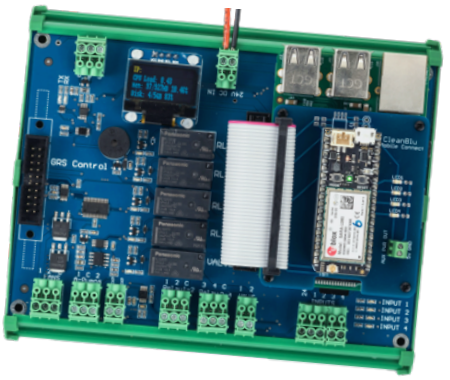
The challenge

The wastewater treatment industry is full of laws and regulations that businesses must adhere to in order to maintain operations and not create a negative health impact. This makes it challenging to build new and affordable solutions for the industry.

CleanBlu needed to build an intelligent wastewater treatment solution that could be controlled wirelessly and follow regulations within that industry. Initially, CleanBlu used the Particle Electron 2G/3G only as a modem. However, after some research, CleanBlu realized that the Particle product and its Cloud Services can run an entire system, becoming its main controller, not just a simple modem.

Particle enables the path to scale

With the help of Particle, Cleanblu built a fully automated BioController that can be used to manage every aspect of the treatment process.



Cleanblu BioController

The controller uses a Particle Boron, which allowed them to easily connect their solution to the Internet via a cellular network. They chose the Particle Boron because it came with the right processing power for their solution and was fully-certified, which helped convince partners that their solution was safe.

With the Particle IoT platform, CleanBlu could easily reconfigure the Particle Boron, meaning they could wirelessly send all-new features and change the way their solution reports data. And with the Particle For Good program, they got a discount on all Particle hardware and were able to receive technical support to help them build their solution.

Navajo Mountain water reuse project

CleanBlu has also used the Particle Boron for other projects. In 2019, CleanBlu was chosen by The International Water, Sanitation and Hygiene Foundation to design a low cost, fully autonomous water reuse system for the new Navajo Mountain Chapter House in Piute Mesa, Arizona.

There are over 175,000 people living In the Navajo Nation without any form of access to clean running water. Being situated in the desert, water is typically brought to them in

Navajo Mountain water reuse project

barrels. However, things like toilet flushing consumed ~50% of their total water usage, making it so they have to use their water diligently. CleanBlu started to think about how they could build a smart solution that allowed people to get the most of their water so it wasn't a scarce resource.

With the assistance of the Particle IoT platform, they developed a low maintenance 4-stage aerobic biological treatment system that could be used to treat wastewater for reuse. The system is fully autonomous and can communicate to the Internet thanks to the Particle Boron. This means the solution can be fully managed via the CleanBlu Connect app, giving them more control over their solution.

Cleanblu and Particle exceed expectations

Cleanblu chose the Particle IoT platform because it provided all the tools they needed to build a reliable Internet-connected solution. Particle handled the complex infrastructure of IoT for Cleanblu, meaning they could focus on making water accessible, safe, and clean.

Smart sensors monitor systems for compliance

Particle handles the complex infrastructure of IoT

Compliance data is sent to a centralized location

The Particle for Good program also helped them achieve their vision of making clean water accessible, and reusable by providing technical support and discounts on hardware. In the future, they hope to see smart cities with a decentralized water treatment system.

Contact Particle

If you are looking to build profitable IoT solutions, consult our team of experts at Particle.io/sales.

Particle Store

Start your IoT journey by checking out our industrial hardware on the Particle Store.