








-  **Customer**      shrimp farming
-  **Machinery**      diesel engines of aeration units
-  **Task**
  - ensure uninterrupted aeration,
  - automate fuel consumption monitoring
-  **Solution**
  - DUT-E S7 fuel level sensors,
  - DFM D S7 fuel flow meters
-  **Result**
  - uninterrupted operation of aeration units,
  - fuel level monitoring in tanks,
  - accurate fuel consumption tracking


## CUSTOMER

A company from Ecuador engaged in shrimp farming. Founded in 1975.

The company owns 5,700 hectares of shrimp farms, two processing plants, and a distribution network.

 **6600** employees

 **48** years on the market

 Exports to **45** countries

## MACHINERY



Main fuel tank



Cummins engine

To ensure shrimp grow in the required quantity and reach standard sizes, continuous aeration (oxygenation) of the ponds is essential. This is achieved using pond aeration units.

Each unit is powered by a 336 kW Cummins diesel engine. The engine is fueled from a supply tank with a height of 2,350 mm. Fuel is supplied to the supply tanks from two main fuel tanks, which is 5,500 mm tall and has a capacity of approximately 17,000 liters.

## TASK

Fuel is supplied to the aeration unit's engine from a supply tank. When the fuel runs low, a mechanic opens a pipeline valve to refill the supply tank from the main tank. Fuel levels in all tanks are measured manually using a dipstick. The mechanic also visually inspects the engine's condition.

Manual fuel level checks carry the risk of aeration unit shutdowns due to mechanic being busy or inattentive. Additionally, visual engine inspections do not provide an accurate assessment of engine's condition.

**Client decided to install a fuel monitoring system to achieve the following goals:**

- ✓ **timely fuel transfer between tanks,**
- ✓ **monitoring of engine fuel consumption,**
- ✓ **objective assessment of engine condition.**



Operation of aeration unit

## SOLUTION

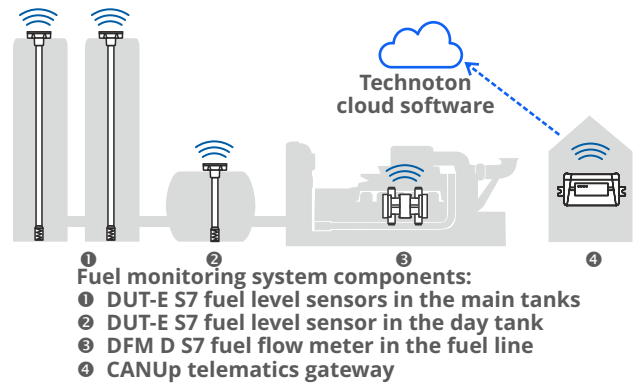
Technoton's partner in Ecuador proposed installing a fuel monitoring system consisting of:

- ✓ DUT-E S7 fuel level sensors in the tanks,
- ✓ DFM D S7 fuel flow meter in the engine's fuel line,
- ✓ CANUp telematics gateway,
- ✓ cloud-based software.

The fuel level sensors and flow meter are wireless, allowing for quick system installation without signal cables. Fuel data from all sensors is transmitted via Bluetooth over a distance of up to 50 meters. The CANUp gateway collects data reliably and without distortion, then sends it to the cloud software.

DUT-E S7 fuel level sensors are supplied in 1,000 mm lengths along with additional extension sections of the same size. This greatly simplifies transportation. **At the installation site, the sensors are extended to the required lengths, using these additional sections: 5,500 mm for the main tank 2,350 mm for the supply tank.**

Cloud-based software receives real-time data on fuel level and volume in each tank, as well as fuel consumption and engine operating hours. **Fuel level data makes it possible to accurately determine when fuel refill is needed.**



DUT-E S7 level sensor next to the main tank (left)  
DFM D S7 flow meter in the fuel line (center)  
Solar panel powering the CANUp gateway (right)

### Valeria Sharko, sales engineer, Technoton

"Technoton has extensive experience in fuel monitoring for large-capacity stationary tanks. Our partners offered the client a solution based on wireless fuel level sensors and fuel flow meters. Aeration units are located in areas without access to a permanent power supply. The sensors and flow meters operate on built-in batteries, while the telematics gateway is powered by a small solar panel. **Monitoring system is fully energy-independent.** We thank our partner for their professionalism. The installation of the equipment were completed in a short time, and client is now receiving all the data they need."



## RESULT

The client receives real-time data on fuel levels in both the main and supply tanks.

**Manual fuel level checks are no longer necessary** – now, the mechanic visits the units only to refill fuel between tanks.

**Thanks to a stable fuel supply, aeration units operate without interruption.** Data from flow meter on fuel consumption and engine runtime also provide an additional means of monitoring the engine's technical condition.



### Santiago Guzman, head of Technoton's partner company in Ecuador

"The key reasons for choosing Technoton equipment for fuel monitoring on aeration units were:

- Easy transportation and installation of fuel level sensors. DUT-E S7 sensors are supplied in 1,000 mm lengths and extended on-site with additional sections to the required size.
- No need for external power supply. The wireless fuel level sensors and flow meters run on built-in batteries. The telematics gateway is powered by a solar panel.

**Client receives timely alerts about the need to refill tanks and has access to fuel consumption data."**