



Benefits

- Configuration and PLC programming can be done from anywhere
- Reduced travel expenses
- Return on investment:
As soon as the first service visit is replaced by an online check

Solution:
Remote Management

Customer: C-Tech
Innovation Ltd
Country: UK

www.netbiter.com

PLC programming across the Atlantic

With a Netbiter gateway connected to their electrochemical machines, UK-based C-Tech Innovation has been able to support customers overseas via a remote online tunnel, instead of making expensive and time-consuming service trips.

C-Tech Innovation in Capenhurst, just South of Liverpool, designs and builds a range of electrochemical equipment, from laboratory-sized cells to custom production-scale rigs. Their products are used for food and beverage processing, chemical processing, energy & heating and advanced material production. Users are typically large multinational companies and research centers across the world. The electrochemical products are very advanced and usually shipped to R&D departments and universities – demanding customers who often want changes and optimizations to their products after installation. This means that the controlling PLCs need to be reprogrammed which normally requires a service engineer to travel to the site and hook up to the PLC. However, with the Netbiter Remote Management solution, C-Tech Innovation has found a better solution.

Configuration from anywhere

By connecting a Netbiter EasyConnect gateway to their machines, C-Tech can utilize a function called "Remote Access" which enables a secure connection to the PLC in the machine. Through this connection, it is possible to do remote configuration, programming or debugging from any location. Once the communication tunnel is open, C-Tech Innovation can use their standard configuration tools to configure the PLCs.

“The first time the customer rang, the Netbiter paid for itself.”



Andy Leck, Electrical Design Engineer,
C-Tech Innovation.



Cutting edge machinery. The ohmic heater that was sent to C-Tech Innovation's customer in the United States is used for pasteurization and sterilization of fruit juices and dairy products.



Familiar environment. With Remote Access running in the background, C-Tech Innovation can use their regular configuration tools (Siemens TIA Portal in this case), just as if they were connected on site.

How it works

C-Tech runs the Netbiter QuickConnect software on a regular computer at the office in Capenhurst, and a secure tunnel is created to the Netbiter gateway at the customer site. The Netbiter is in turn connected to the PLC (usually from Siemens or Mitsubishi) via RS232 or Ethernet/LAN. Once the tunnel is open, C-Tech can simply open their Siemens or Mitsubishi software and configure or debug just as if they were on site. The connection is established via the cloud-based Netbiter Argos service which acts as a routing portal without the need for opening inbound ports in firewalls or setting up VPN connections on site. The connection from the gateway to the cloud can be made via Ethernet or via the mobile phone network.

One saved service trip = ROI

The first product that C-Tech Innovation shipped with a Netbiter gateway attached, was an ohmic heater to one of their customers in the United States. After a few months, the customer rang and needed support. They had a problem with the machine and couldn't get it to work properly. It was then that both parties realized that the investment of a few hundred Euros extra was quickly paid back.

"Without Netbiter, we would have got on a plane, but with the gateway in place, we could connect to the machine remotely and troubleshoot. In this case, we discovered that our product was working fine, and they simply had a blocked filter," says Andy Leck, Electrical Design Engineer at C-Tech Innovation.

The same customer has since then had 3 more support cases which have been resolved remotely with a saved service visit as result. If you calculate the costs for a service engineer travelling across the Atlantic, you soon realize that the ROI is short. "The first time the customer rang, the Netbiter paid for itself," says Andy Leck.

Beneficial for C-Tech Innovation and their customers

C-Tech Innovation now offers Netbiter as an option to their products, offering savings in time and money for both them and their customers. "If you are a machine manufacturer with installations far from home, Netbiter will definitely provide value to your business, says Andy Leck. "Not only does it give us the possibility to support and troubleshoot our machinery remotely, it also provides us and our clients with online data from their processes that they can view and analyze."



Benefits

- Better control of the hybrid energy systems
- Real time data from solar plants and diesel generators optimizes solar/diesel use
- Quicker response times on technical issues, fuel theft etc

Solution:
Remote Management

Customer: Enerwhere
Country: Dubai,
United Arab Emirates

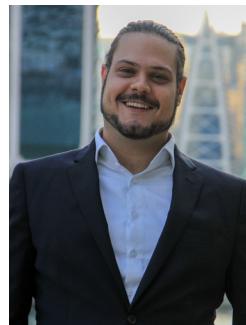
www.netbiter.com

Solar power in the cloud

Hybrid solar power plants realize the Industrial Internet of Things using cloud-based remote management. By using Netbiter Remote Management, Dubai-based power provider Enerwhere can keep track of their hybrid energy systems 24/7.

Online access does not only enable Enerwhere to keep maintenance costs down to a minimum, it also gives them real-time access to energy production and fuel consumption, enabling live calculation of the generators' efficiency. In places with a lot of sunshine like the Middle East, Africa and Latin America, solar power is today the most efficient power source. New and innovative solar technology has long surpassed fossil fuels when it comes to both energy efficiency and costs. In fact, in the regions mentioned above, solar power is today 20-30% cheaper than power from diesel generators.

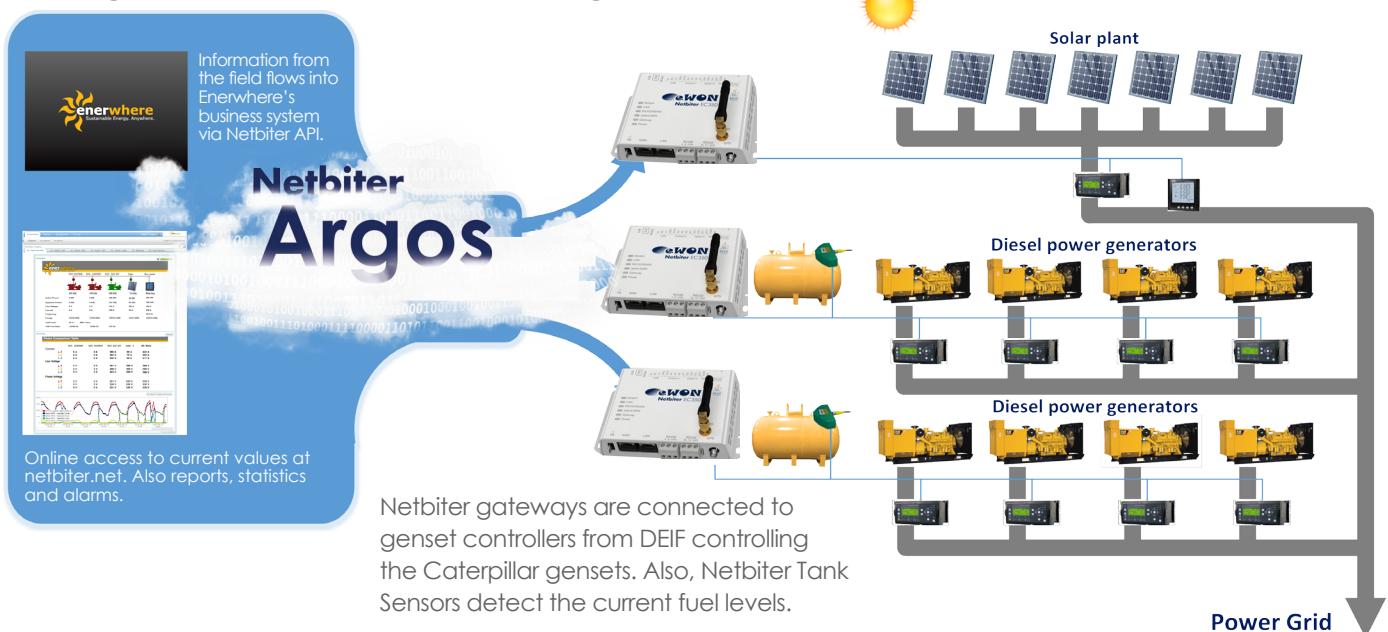
Dubai-based power supplier Enerwhere offers a hybrid power solution which combines solar plants with diesel power generators. The solar plants are used as much as possible when the sun is out, and the diesel generators add power when needed. This makes up for a very reliable and cost-effective power supply. Enerwhere's customers are diverse: construction sites, temporary housing, manufacturing plants, oil & gas sites or even entire islands rely on Enerwhere's hybrid plants. These customers get a complete energy solution – Enerwhere installs all the necessary equipment to deliver power and the customer simply pays the bill with a good conscience, knowing that as much power as possible comes from green solar energy.



“With Netbiter, we can connect to anything and get reports and statistics online.”

Hassan Shamma,
Operations Manager, Enerwhere

Enabling the Industrial Internet of Things at Enerwhere



Online control important

As a power supplier, Enerwhere needs to make sure that their equipment is operational 24/7 and that power can be supplied at all times. But how do you do continual maintenance and more importantly, how do you know how much power is being consumed by each customer? To solve this issue, Enerwhere found the Netbiter Remote Management solution from HMS Industrial Networks. "We first got in contact with Netbiter through DEIF, who supplies us with control panels for our Caterpillar gensets," says Hassan Shamma, Operations Manager at Enerwhere. "We had a look at a couple of different systems, but we appreciated the fact that Netbiter was a complete solution including the gateways which connect to the equipment as well as the cloud-based online monitoring system. We also liked the fact that there was an API which we could use to integrate Netbiter into our business system for fuel efficiency calculations."

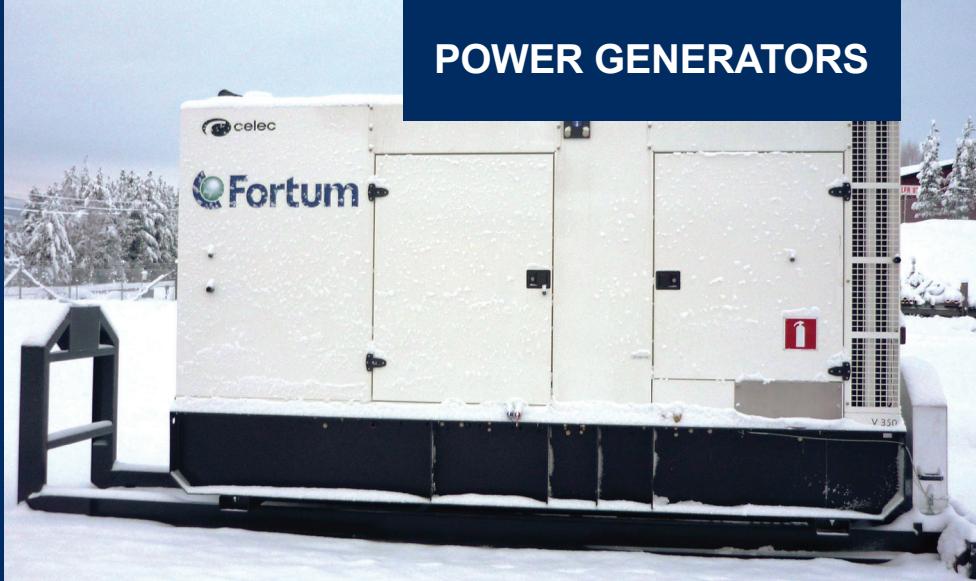
How it works

When Enerwhere supplies a hybrid energy solution to their customers, they connect a Netbiter gateway to their control panel. The Netbiter gateway, which communicates with the control panel via Modbus, gathers data from the hybrid system such as temperature, fuel levels, energy consumption, running hours etc. and sends this data to a cloud-based service called Netbiter Argos. Data can be sent both via the cellular network or Ethernet if an Internet connection is available. Enerwhere can log into Netbiter Argos and view current status and consumption of their systems at www.netbiter.net. Enerwhere also utilizes the Netbiter Tank Sensor which is attached to Enerwhere's diesel tanks to provide online access to fuel levels. "This has been quite a useful tool for us," says Hassan Shamma. "Fuel theft can be a major issue in these types of applications and Netbiter has certainly helped us get a better overview of our systems and improve our response times."

API enables integration with business system

Through the Netbiter API, Enerwhere is able to integrate live data from the field into their own business system. This has enabled them to get a lot of useful information from their hybrid systems in the field available at their fingertips. For example: Daily fuel efficiency reports, Bi-weekly fuel consumption and time-to-refill reports, Population of Enerwhere's own non-SQL database, Ad-hoc analysis directly in Excel

"The API is really easy to use and has been of great value to us since we now can see exactly how much power that has been consumed by each customer and how the system is performing, right in our own front end," says Hassan Shamma. As more and more customers are looking for green, sustainable and cost-efficient power solutions, Enerwhere has bright times ahead and Netbiter enables Enerwhere to supply an even more cost-efficient power solution to their customers. "I like the fact that it is a vendor-independent solution. With Netbiter, we can connect to anything and get reports and statistics online, something which has direct impact on our bottom line," finishes Hassan Shamma.



Benefits

- Faster and easier to move the generators when needed
- Reduced downtime after a power outage
- Reduced maintenance costs

Solution:
Remote Management

Customer: Fortum
Country: Sweden

www.netbiter.com

How to find a power generator in a snowstorm

As Sweden was struck by a snowstorm during Christmas time 2011, power company Fortum found out how helpful it can be to see the status and exact location of their power generators over the web.

For a power company like Fortum, a severe storm means a lot of work. Wind and falling trees can cause damage to power lines which means that backup power generators need to be installed as quickly as possible. If a storm hits during holiday time, it gets even more tricky. It means that temporary staff has to get backup power generators in place quickly, and sometimes have to find and perform service on generators they have never visited before. With a remote management solution in place, it is not only possible to see fuel levels, oil pressure and battery levels of each power generator, you can also see exactly where they are through GPS tracking. This can be a huge advantage if a power generator has to be moved quickly.

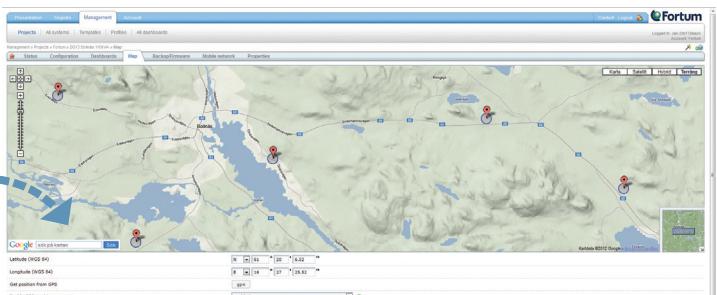
Making sure power doesn't fail

Fortum is Finnish-based power company generating, distributing and selling electricity and heat in the Nordic countries, Russia, Poland and Baltic Rim area. With almost 11,000 employees and 3 million customers, they are one of the leading power companies in Northern Europe. Fortum Distribution is a subsidiary of Fortum handling the maintenance and power supply of the power grid. They have about 50 diesel-driven backup power generators ready to kick in if the regular power supply should fail.



“We liked the fact that you could see the exact position of the power generator and also monitor the performance while running.”

Jan-Olof Olsson,
Fortum.



With GPS tracking, Fortum can see the exact location and status of their power generators.

One of their suppliers of backup power generators, Clec, recommended that they install the Netbiter remote management solution in order to monitor and control their generators remotely. "We thought it looked like a good product," says Jan-Olof Olsson at Fortum Distribution in Karlstad, Sweden. "We liked the fact that you could see the exact position of the power generator and also monitor the performance while running. If we have a disturbance in the power grid and have to put in a backup power, it is crucial that our customers do not suffer additional disturbances."

How it works

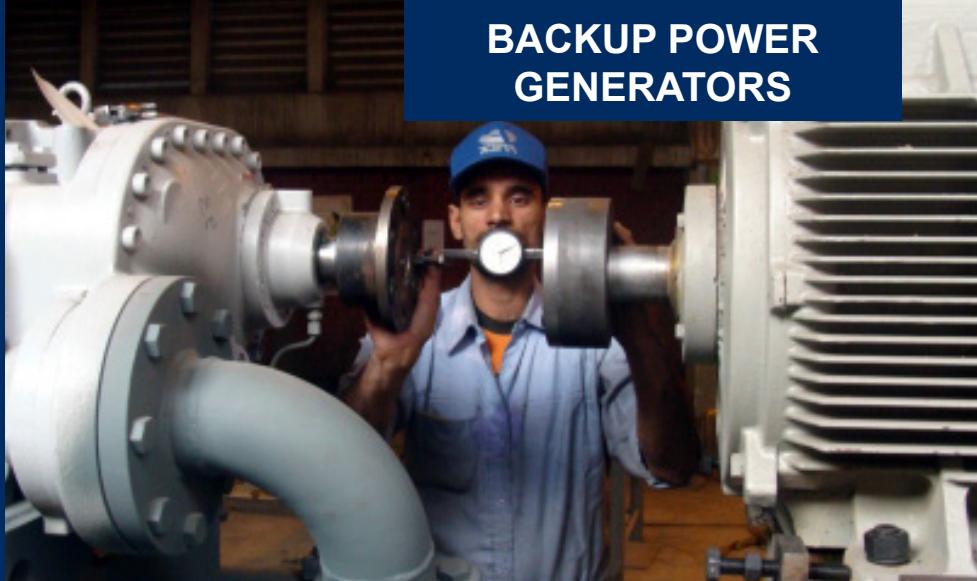
A Netbiter EasyConnect 250 unit and a GPS transmitter is attached to Fortum's backup power generator from SDMO. The Netbiter is connected to the genset's ComAp InteligenNT control panel and exchanges data with this control panel via the Modbus protocol. Data from the generator is sent via the mobile phone network to a central server called Netbiter Argos. This data center can be accessed by Fortum's service staff from any computer or other device connected to the Internet. By logging in to www.netbiter.net, Fortum's service staff can immediately see a graphical dashboard of fuel levels, battery levels, oil pressure, coolant levels, output power etc.

By using GPS tracking, it is also possible to see the exact location of the generator which can be very helpful since the units are frequently moved to new locations. The Netbiter solution can also send commands to the generator making it possible to start and stop the generator remotely. "We can see the position and the most important running data on a webpage and we get alarms via email whenever we need to pay extra attention to low fuel levels or other parameters," says Jan-Olof Olsson at Fortum. "We especially saw the usefulness of the system during the storm that hit Sweden during Christmas 2011. We had 40 power generators at different locations in our grid and the ones that were equipped with remote management equipment were much easier to maintain and find during these difficult conditions."

The results

Fortum says that they have reached the results they wanted by implementing a remote monitoring solution: Easier surveillance and better control of the generators' locations. "The very purpose of a backup power generator is that it should be able to be put in use immediately if something happens," says Jan-Olof Olsson. "Then it is great to see the exact location on a GPS map." Fortum has also been able to cut down on their maintenance costs since they do not have to visit each generator as often, but the most important benefit is more reliable power supply to their customers.

"We have been able to raise the quality of our service by using remote management," says Jan-Olof Olsson. "If there is a power outage and we have to put in backup power generators, it is extremely important that our customers do not suffer further disturbances in their power supply. Therefore, I can warmly recommend Netbiter as a well-functioning solution, with an easy-to-use web interface that is easy to navigate."



Benefits

- Online access to compressor parameters such as temperatures, energy consumption or runtime
- Remote access to configure Allen Bradley PLC
- Lowered costs for service trips and maintenance.

Solution:
Remote Management

Customer: Frick India Ltd
Country: India

www.netbiter.com

Keeping it cool with Netbiter

Many manufacturers of industrial equipment need to keep track of their machinery also after it has left the factory. But service trips to the machines in the field can be costly and time-consuming and if a machine needs repair, it may take a long time to find out what is wrong with it.

Through the Netbiter Remote Management solution, Frick India Ltd has found a way to keep track of their machinery via the web and always be on top of the state of the equipment. Frick India Limited is the largest manufacturer of industrial refrigeration and air-conditioning equipment in India. The company, which has been in business since 1962, has a long history of producing compressors, coils, pressure vessels, evaporative condensers and other cooling equipment for the vast Indian market. They also export to 40 countries abroad. Frick equipment is used in dairy cooling, ice factories, fisheries, marine applications, petrochemicals, food & beverages, breweries etc. In a recent project, Frick compressors were installed in a potato cold storage in Hapur, located in the Uttar-Pradesh region in Northern India. The temperature variations in Uttar-Pradesh can be extreme and in the summer, temperatures can go as high as 50 °C. Consequently, efficient cooling is of utmost importance if you want to store foodstuff.

On top of all parameters from the compressors

In the potato storage, there is a glycol chilling system with two screw compressors from Frick. Connected to the compressors is a Netbiter gateway which is able to detect operating values from the compressors such as temperatures, energy consumption, running hours etc. The Netbiter gateway sends this data to a cloud-based server called Netbiter Argos.

The data is sent via Ethernet, but Netbiter gateways can also send data wirelessly via GSM/GPRS/3G. Frick and their customers can log in to Netbiter Argos at www.netbiter.net where they can view all parameters in an online dashboard. They can also view trends over time and download statistics on equipment behavior.

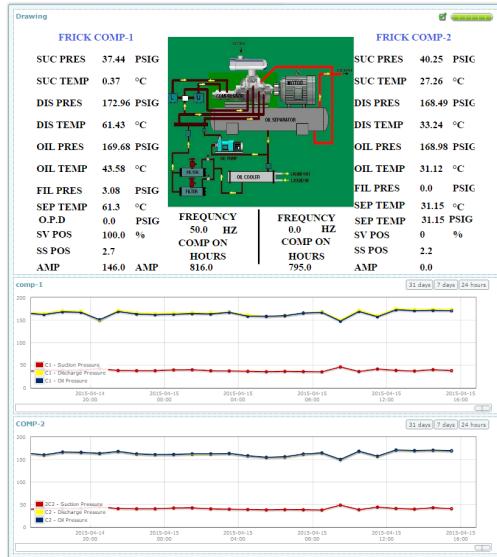
“We can now see all the parameters from the compressors displayed online – trends, logged data from the plant, error diagnostics plus alarms if something is wrong.”

Surender Pal Korpali, Frick India Ltd.



The Netbiter gateway sends data from the compressors to Netbiter Argos in the cloud.

User access at www.netbiter.net



Dashboard from Netbiter Argos. This is what Frick and their customers see when they log in to monitor their compressors online.



Compressor assembly at the Frick factory.

Also very important is the possibility to get alarms via email or SMS text messages notifying Frick and their customers if something is wrong with the machines or if service is needed. This saves a lot of time and money when it comes to maintenance and also significantly increases the up-times for the cold storage as a whole.

The setup

Surender Pal Korpal at Frick's Electrical Department was the project manager for installing the cooling system. He explains the setup: "We used an Allen Bradley SCADA system for whole plant and installed a Netbiter gateway in the main PLC panel. We used a 16 point Dlink switch, where we connected all the remote I/Os of the plant. All our PLCs are connected via the Dlink switch as are the network connection and the Netbiter gateway."

Connection via Modbus

The Netbiter gateway can communicate with all types of equipment which uses Modbus, Modbus-TCP or EtherNet/IP. This has been a great advantage for Frick since they have standardized on Allen Bradley PLCs which offer Modbus RTU communication.

Remote configuration of the PLCs

A very useful feature of the Netbiter system is the functionality called "Remote Access." This means that Frick can connect to their PLCs remotely and do configuration using the usual Rockwell RSLogix software. It is just like being connected on site. This means that changes, upgrades and debugging can be done from any location, saving a lot of service and maintenance costs. Surender Pal Korpal at Frick concludes: "We can now see all the parameters from the compressors displayed online – trends, logged data from the plant, error diagnostics plus alarms if something is wrong. All this is available right on our computers or even on our mobile phones. We can also configure our PLCs online which is very helpful. Our client in Hapur is very satisfied with this system which saves them a lot of maintenance time and money and also improves the operation of the potato cold storage."



Benefits

- Online access to control system, 24/7
- Better control of temperature
- Fewer manual checks needed

Solution: Remote Management
Customer: Insight Control Solutions Ltd
Country: UK

www.ewon.biz

Hi-tech beer!

Making beer is a complicated process. Although it only consists of malt, yeast, hops and water, it takes a lot of skill, experience and craftsmanship to get the brewing process right and produce a good beer. At Howard Town Brewery in Glossop outside Manchester, this process is perfected with great attention to detail. That is why they are using the eWON Netbiter Remote Management solution which allows the brewing process to be monitored 24/7.

The Netbiter Remote Management solution is a part of a state-of-the art automation system put together by system integrator Insight Control Solutions on behalf of Howard Town Brewery.

Insight Control Solutions Ltd. designs, builds and installs control systems across the UK and have become experts in control systems, especially for chillers. "But we deal with everything that needs controlling," says Bob Haynes, Director at Insight Control Solutions. "As long as you can measure it, we can control it," he says with a laugh.

Quickly realized the business potential

Insight Control Solutions first got in contact with Netbiter through their supplier of Crouzet PLCs. These PLCs are very well-suited for connecting to Netbiter for remote monitoring and control. "We tried out Netbiter for a little while and quickly realized the business potential in offering this service to our clients," says Bob Haynes. "As long as a device uses Modbus, we can connect it to Netbiter and monitor and control it remotely."

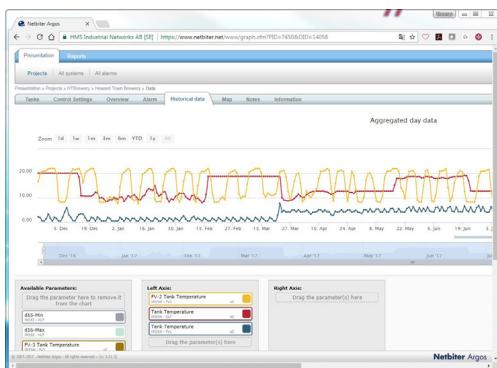
How it works

In the brewery in Glossop, Bob Haynes has set up a control system which controls the brewing process. A Netbiter gateway connects to the Crouzet PLC which controls the system. The Netbiter gateway sends data via Ethernet, or the cellular network, to the cloud-based Netbiter Argos service where it is stored and accessed.



// **Remote Management is extremely useful to both us and our customers.** //

Bob Haynes, Director,
Insight Control Solutions Ltd.



eWON Netbiter allows Howard Town Brewery and Insight Control Solutions to get statistics of system performance over time — very useful for optimizing processes and raw material handling.

Insight Control Solutions and Howard Town Brewery can log in to the web page www.netbiter.net to see the status of their brewing tanks, chillers, water levels and temperatures and make sure everything is OK. If values reach certain levels, they can get alarms via a text message or email.

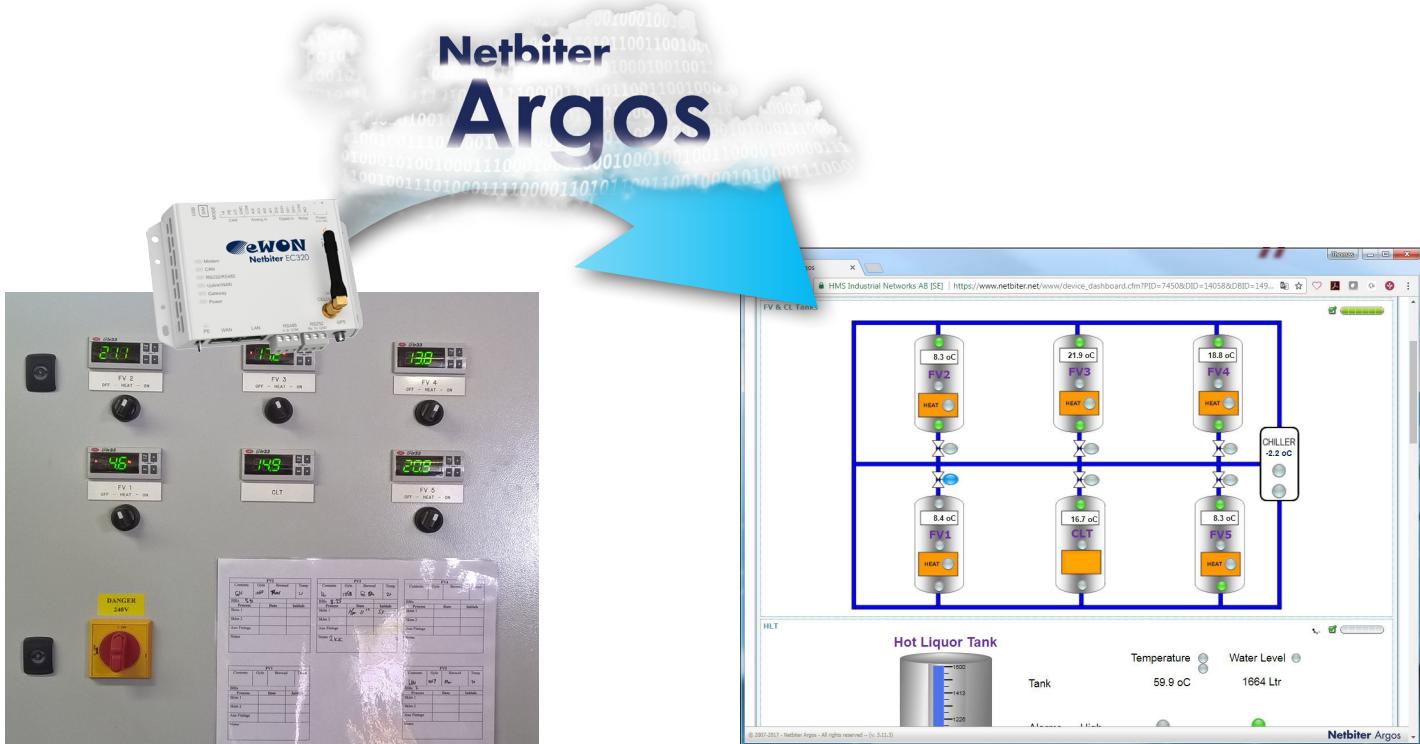
With Netbiter, the brewery can have full control over the fermentation process without having to be constantly on site 24/7. This not only ensures the high quality of the beer, it also frees resources to work with other things.

Using the Netbiter on other systems, it is even possible to start and stop equipment and make adjustments to set points and other parameters, all from the Argos dashboard.

Furthermore, the option to produce reports via email and get online trend graphs measuring performance over time, makes Netbiter very useful for optimising machinery and raw materials handling.

A versatile solution

"Remote Management is extremely useful to both us and our customers," says Bob Haynes. "And Netbiter is a very good solution to make it happen. With Netbiter, we can offer our customers online access to their equipment which is useful for any modern operation. We have installed Netbiter in applications ranging from hotels, flood pump systems, art storage warehouses and even a cigar humidor containing cigars worth millions of pounds. Netbiter is simply a very good product."



In the brewery control panel (left), it is possible to see all current values in the system. A Netbiter gateway is connected to this control panel and sends data to the Netbiter cloud service which can be accessed at www.netbiter.net (right). Here, the users can see the same thing online as in the real panel. The brewery can also control the equipment and get alarms if a value reaches a certain level.