Energy Industry Case Study

How to tackle unplanned downtime and decrease repair costs of CHP Units?

Neuron Soundware warns you about more than 50% of machine failures typically 2–15 days in advance

CHP Units serve as modern and efficient sources of energy

Cogeneration units (CHP) produce energy by burning natural gas, diesel or even alternative fuels. They are used wherever there is the high consumption of heat and electricity as an independent and decentralized energy source (medical facilities, schools, sports halls, heating plants, commercial and industrial centers, etc.). It is a power resource supported by a subsidy for cogeneration.

Unplanned downtimes may severely decrease the overall profitability

As any machines, even CHP Units break – and they often don’t have sufficient in-built monitoring solution to indicate mechanical issues in advance. The trouble is that not all parts and service functions are available on-demand, which causes downtimes.

The challenge is to cover all variables

The CHP Units contain many components of different age and quality. There are also various service models and contracts in place that affect reliability and durability.
The result is a response time of 2–15 days before a critical failure occurs

Selected users are notified about abnormal machine behavior via e-mail or SMS. Users also have 24/7 access to our Analytics & Monitoring Platform, where they find detailed information, view historical data, or access raw audio.

5 steps to prevent unplanned downtime

1. **Installation**
   First, we install 12 contact piezoelectric sensors on each machine: on the middle part of the generator, generator bearings, engine cylinders, turbochargers, and boundary microphone.

2. **Data Collecting**
   Then we collect data and assign appropriate tags for major operational events. As a result, we create a comprehensive training data set.

3. **Algorithms Training**
   We train our unique algorithms to evaluate each audio channel or machine component independently. That way, we manage to achieve the best overall results.

4. **User Training & Customer Support**
   Customer’s operators learn how to use our system, and we also help them understand all alerts correctly.

5. **Continuous Service Improvement**
   Feedback is important to us, and we never stop improving customer experience. We also issue new features and quarterly algorithm updates.

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Want to explore possible cooperation?
Let us know!

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