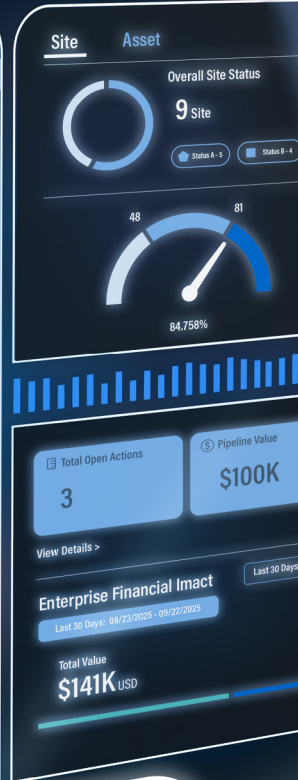


Power Generation

ECOLAB®

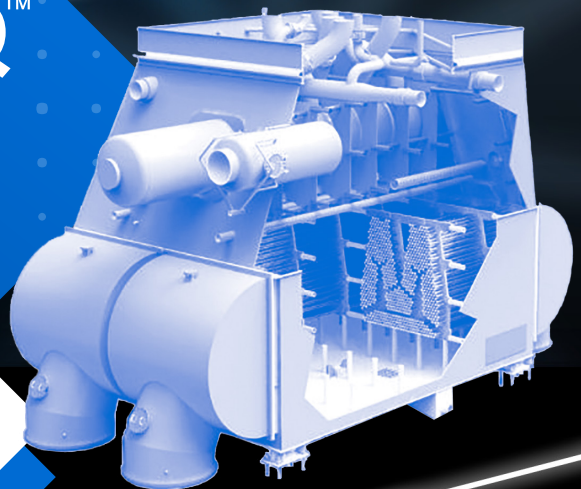


Ecolab® CondenserIQ™

MAXIMIZE PROFITABLE OPERATIONS

HELP PREVENT COSTLY ISSUES

ENHANCE EFFICIENCIES



Maximize profitability with whole condenser visibility and improved condenser performance.

With CondenserIQ™, you have real-time analytics and anytime visibility focused on condenser performance and cooling water quality. **AI-enabled predictive analytics and modeling** allows CondenserIQ to deliver the advanced insights needed to enhance efficiencies and help prevent issues — **helping you run your plant in the most profitable way possible.**

Ecolab® CondenserIQ™ can help achieve your performance goals — significantly impacting your plant's entire operation:



recapture
megawatts



reduce
operating costs

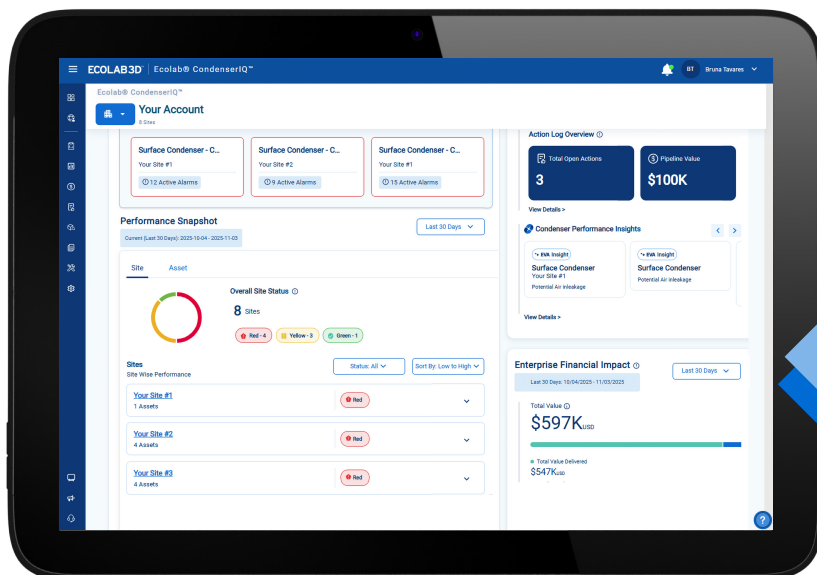


optimize
chemistry programs



help prevent **unplanned shutdowns**
& **costly remedial action**

CLEARLY SEE THE FINANCIAL VALUE TO YOUR PLANT'S OPERATION



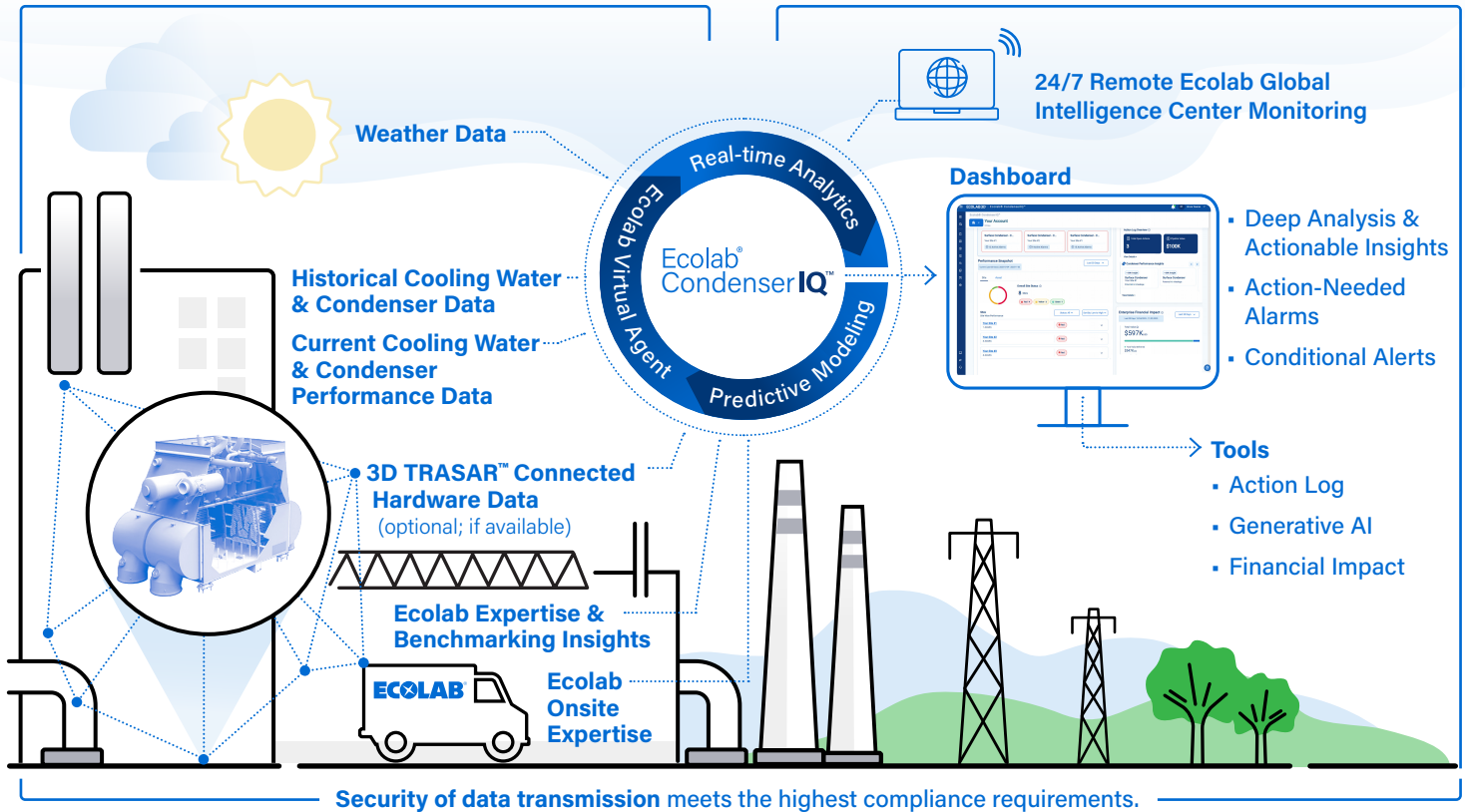
Connected & Calculated:

With every efficiency action you take, you have a clear view of the resulting financial impact.

Improving efficiencies can result in cost savings and increased production. In addition, speeding up detection time and addressing issues more quickly can contribute even **greater financial value.**

CONTINUOUS & VARIABLE DATA SOURCES

REAL-TIME VISIBILITY

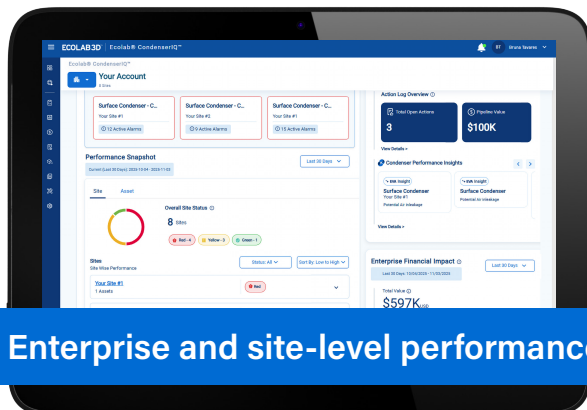


POWERFUL SOFTWARE BACKED BY ONSITE AND REMOTE EXPERTS

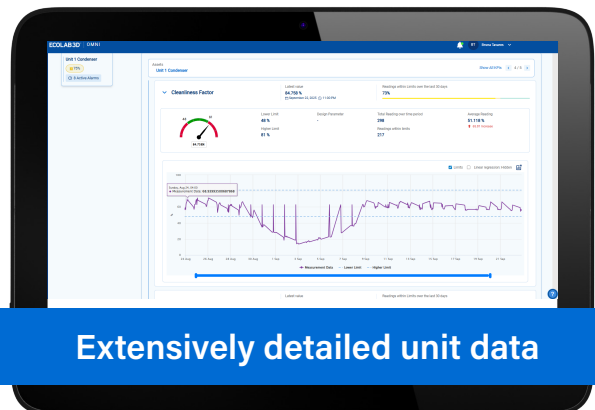
Equipped with the predictive modeling needed to deeply analyze variable water and condenser performance conditions, Ecolab® CondenserIQ™ can provide insight into an issue along with a solution by presenting live actionable insights, action-needed alarms, conditional alerts, and even generative AI with our Ecolab® Virtual Agent (EVA) technology — all supported by 24/7 remote Ecolab Global Intelligence Center monitoring and onsite expertise.

INTUITIVE & COMPREHENSIVE DASHBOARD

From macrofouling to microbial fouling to scale formation, the most common issues are clearly uncovered in our dashboard. In addition, identify and take quick action on the more challenging-to-detect problems such as sub cooling, air in-leakage and tube leaks. Use the Data Filtering feature to see production impact based on specific operating parameters and ranges.



Enterprise and site-level performance



Extensively detailed unit data



COMBINED CYCLE POWER PLANT

Removing mussel settlement increases efficiency and reduces costs

Location: Mediterranean Coast, Spain

The plant had significant macrofouling issues due to mussel settlement in their main cooling system pipes, filters and condenser tubes — significantly impacting profitability due to unscheduled shutdowns needed for manual condenser cleaning. In conjunction with PURATE™ treatment, Ecolab® CondenserIQ™ tracks the performance of the surface condenser in real-time and demonstrates the positive impact of ClO₂ on condenser efficiency due to fouling elimination and improved heat transfer.

The Total Value Delivered:

- **INCREASED POWER OUTPUT**
valued at **800.000€**/year
- **REDUCED TAXES** on CO₂ emissions
equaling **100.000€**/year
- **ENHANCED EFFICIENCIES** due to
 - **eliminating** manual condenser cleanings
 - **reducing** chemical discharge
 - **improving** maintenance and chemical handling



COMBINED CYCLE POWER PLANT

Quick issue identification reduces annual fuel costs and generates additional capacity

Location: California, U.S.A

Ecolab® CondenserIQ™ links data from the plant's data historian to other cooling water data and provides focused, fast information from which plant and Nalco Water representatives can find, fix and prevent efficiency-robbing condenser problems. When the plant experienced a reduction in Cleanliness Factor, CondenserIQ provided the visibility to help direct troubleshooting efforts into the right problem area — an air leak. Repairs were completed and the impact on plant performance quickly realized.

The Total Value Delivered:

- **REDUCED FUEL USE**
valued at **\$681,000**/year
- plant generated **2.6 MWh**
in **GENERATING CAPACITY**
- **EFFICIENCY GAINS** resulting from:
 - **increasing** Cleanliness Factor
 - **decreasing** average backpressure

Ecolab® CondenserIQ™ is a suite of digital tools for the power industry designed to provide reliable solutions to help meet efficiency and profitability business objectives while achieving sustainability goals. Contact Ecolab to learn more about how CondenserIQ can help you run your plant in the most profitable way possible.

ecolab.com/condenserIQ | power@ecolab.com

Ecolab is committed to helping you best operate in today's challenging environment. We provide reliable solutions to help power plants meet efficiency and profitability business objectives while achieving sustainability goals.