

Bold yet simple, Pani Zed™ is an award-winning Canadian software-as-a-service solution, engineered to fill a digital technology gap at industrial and city-scale desalination, water, and wastewater treatment facilities worldwide. While there have been many advances in the hardware used in these facilities over the years, digital solutions have not kept up. Pani Zed™ is the data-driven analytics platform the water treatment sector has been waiting for, providing the tools and technology that enable operations teams to optimize their water processes and operate sustainably.

“Pani provides a unique software solution so technologically advanced, that it can create value rivaling upgraded equipment, and for such a minimal cost.”

Khalid Abunayyan, Chairman, Abunayyan Holding

## How helps

Pani Zed™ simplifies and elevates water treatment process operations by giving the teams that run these facilities new and advanced digital tools that help them do more with their operational data. Applying a holistic data management approach, the platform centralizes, visualizes, and analyzes operational information generated through various plant processes. Pani's proprietary technology provides high-quality and high-accuracy intelligence that supports efficient decision-making, delivering value in five key areas:

We aim to reduce the water treatment sector's GHG emissions by 510 Mt CO<sub>2</sub>e per year by 2032. Learn more in Pani's Roadmap to Decarbonization

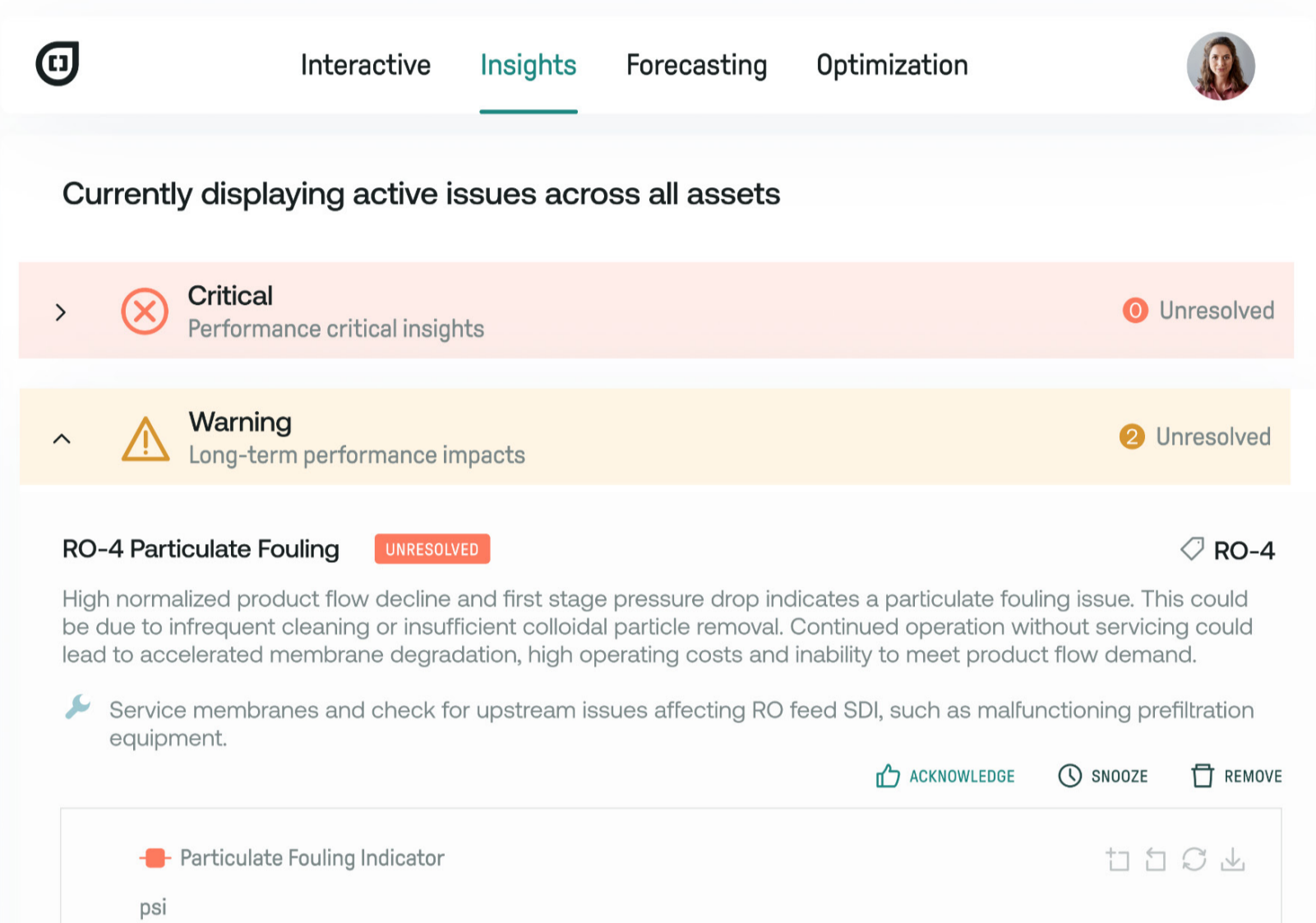
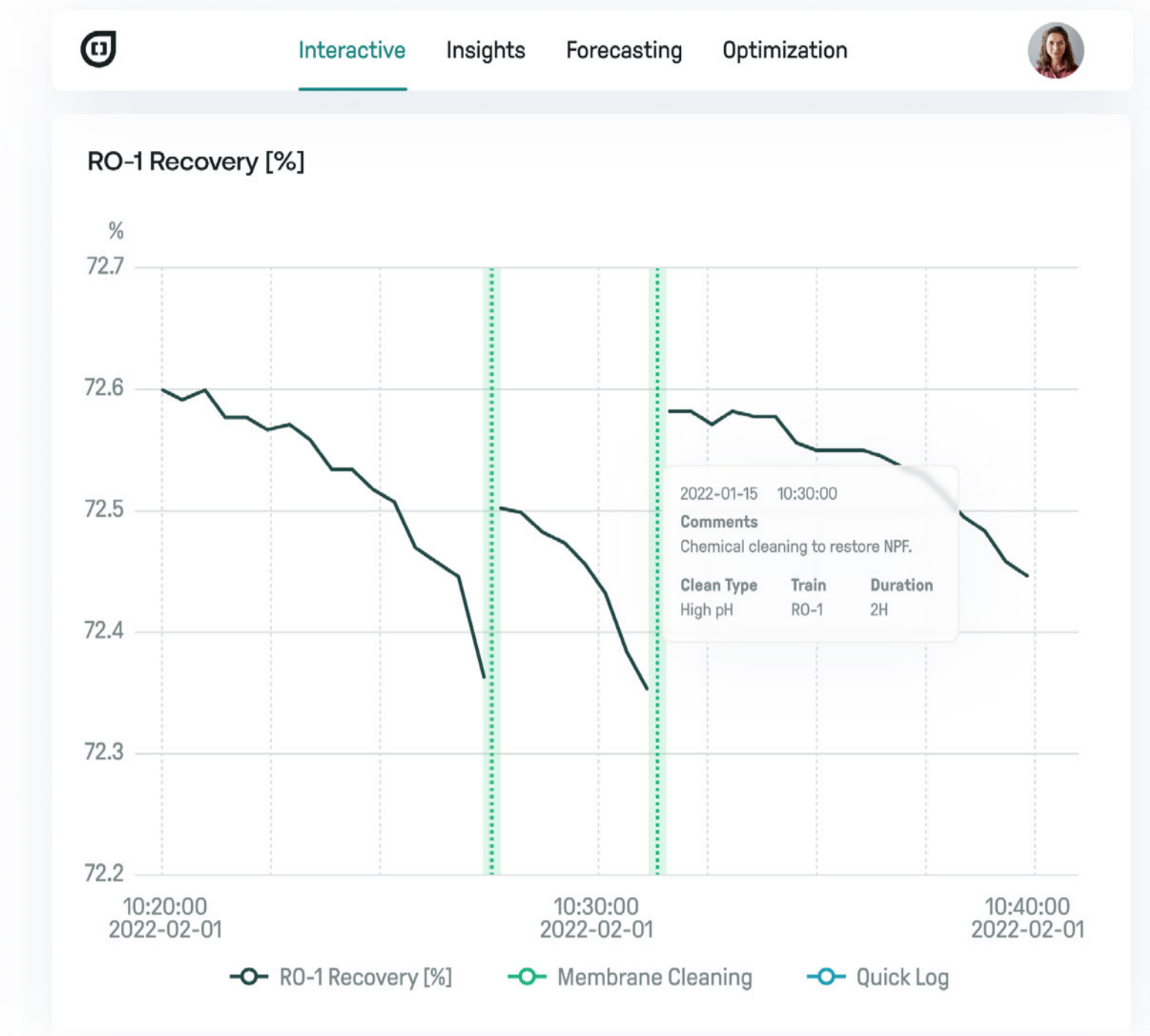
**Energy**  
Optimizing energy usage and associated emissions

**Production**  
Increasing water recovery for membrane processes

**Labour**  
Improving workflows, team collaboration, and task management

### Simplify your operations.

No more data silos. Pani Zed™ consolidates data into a single platform and provides quality assurance so that operations teams can trust the analysis, reports, and workflows they create to streamline operations.

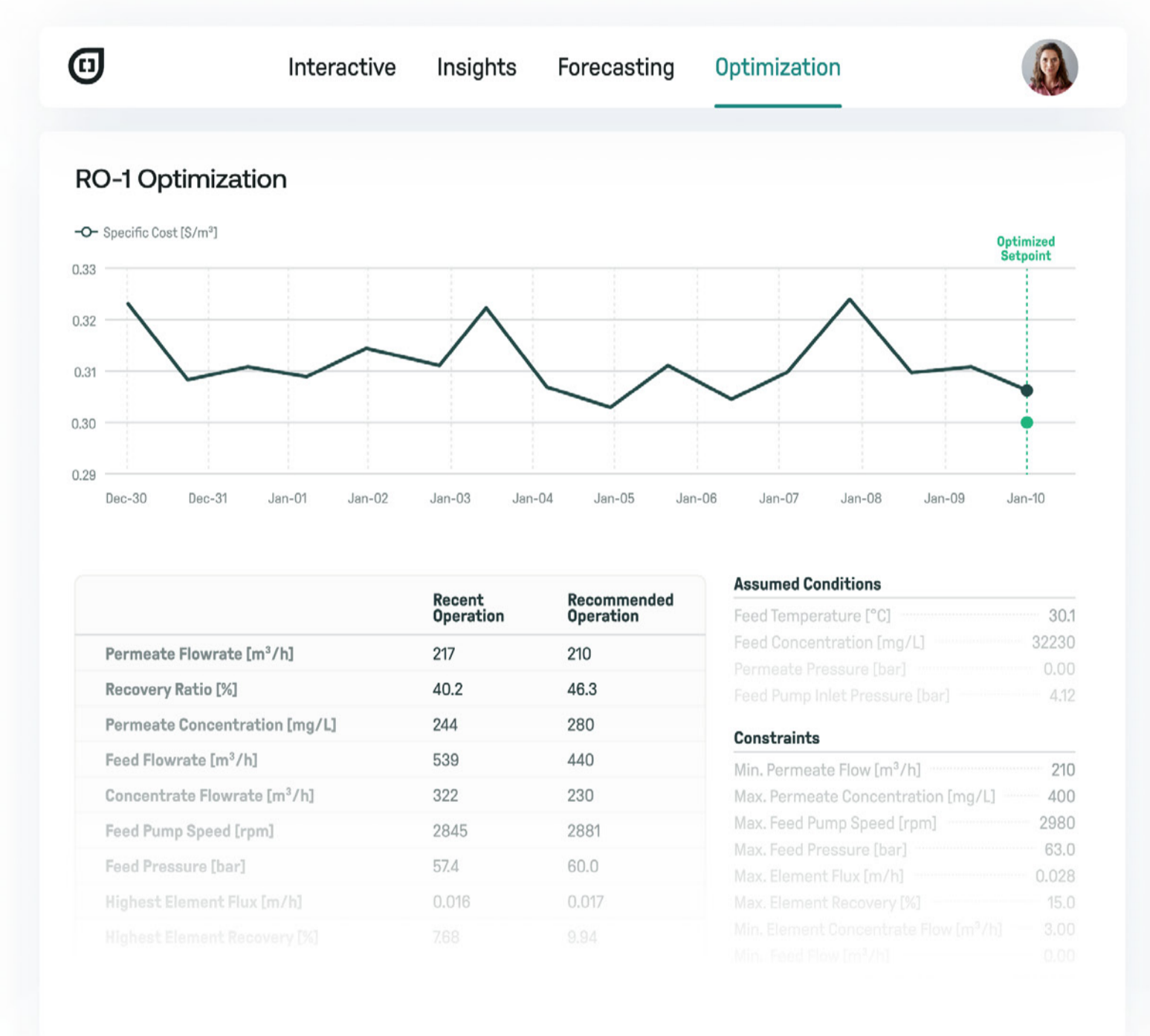


### Maximize your plant uptime.

Leave O&M firefighting behind. Protect your plant with real-time alerts that detect sensor/KPI deviations and underlying process deviations, preventing unplanned downtime.

### Optimize your performance.

Get rid of guesswork and waste. Pani Zed™ provides optimal setpoints, forecasts, and actionable process advice that enable operations teams to plan ahead, mitigate risks, and elevate performance.



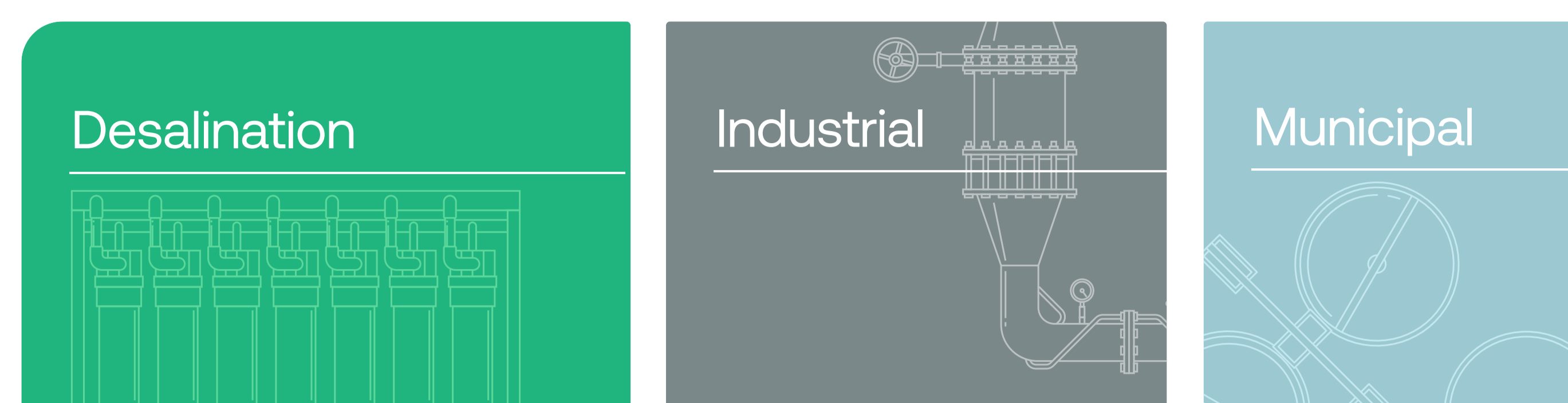
**Compliance**  
Saving time on monitoring, analysis, and reporting

**Reliability**  
Reducing risk of downtime with early fault detection

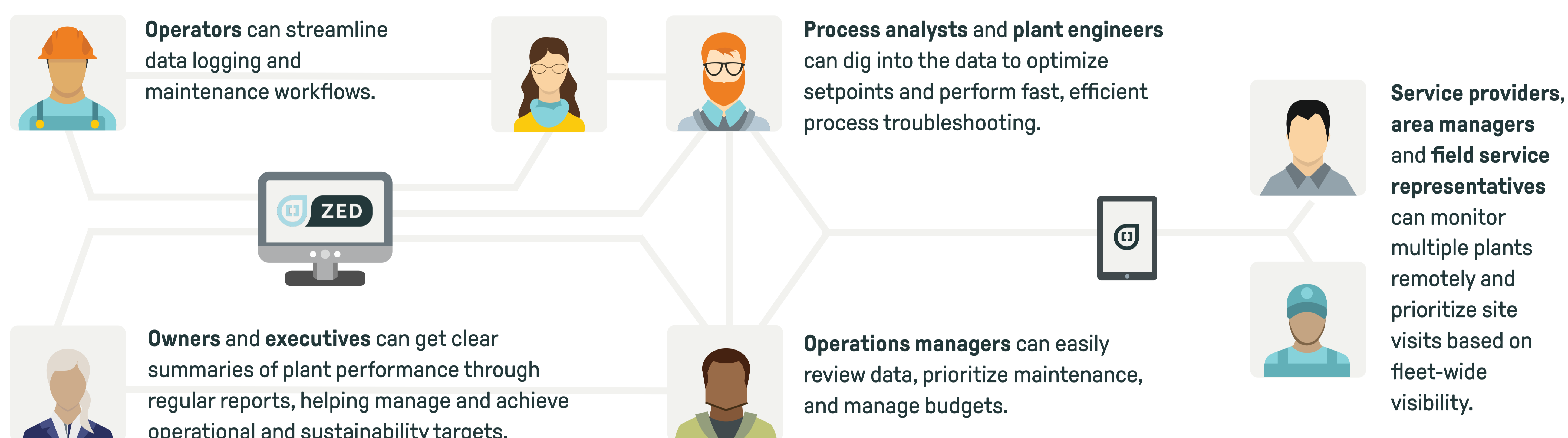


# Who is ZED for

Pani Zed™ is for operations teams working with industrial and city-scale desalination facilities, industrial water and wastewater treatment facilities, and municipal water and wastewater treatment facilities. Whether employed entirely by one facility, or providing contracted services to multiple facilities (i.e. as solutions providers), teams looking to make the best use of their limited resources use Pani Zed™ to do more with less. Pani Zed™ brings everyone on the team together in the same digital environment, facilitating easy access to information while enabling smoother knowledge-sharing and transfer across shifts, roles, and devices such as desktop workstations, tablets, and smartphones.



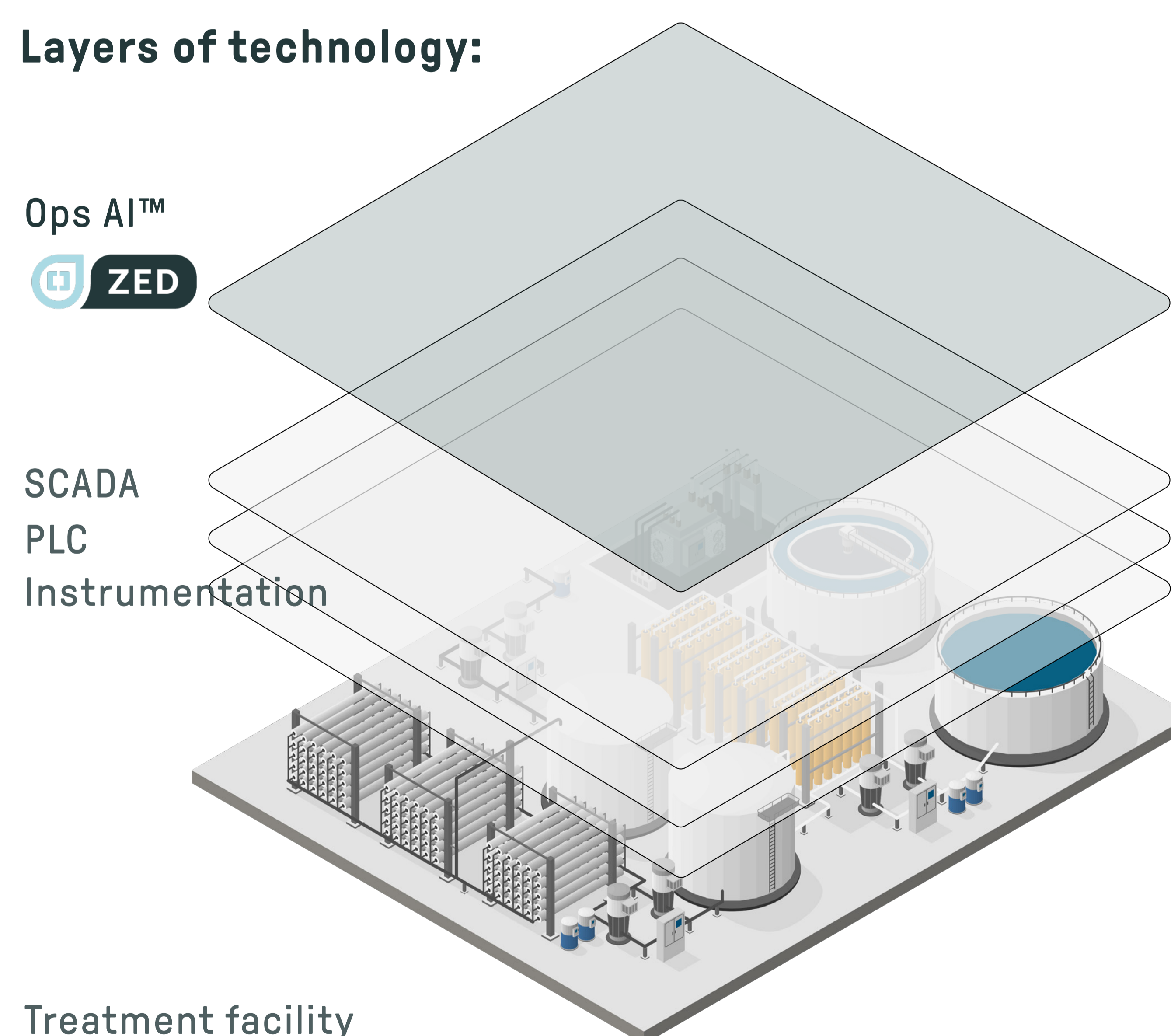
- ✔ **Membrane Systems**  
Microfiltration, Ultrafiltration, Nanofiltration, Reverse Osmosis
- ✔ **Biological Processes**  
Conventional Activated Sludge, Membrane Bioreactors
- ✔ **Chemical Processes**  
Flocculation, Coagulation, Dewatering, Scale & Corrosion Management
- ✔ **Rotary Equipment**  
Pumps, Blowers, Turbomachinery, Pressure Exchangers
- ✔ Thermal Treatment Processes
- ✔ Cooling Tower And Chiller Systems



# How ZED works

Pani Zed™ leverages a proprietary, holistic technology that incorporates a variety of models (e.g. chemical, machine learning, first principle, and more). This technology, within the emerging category of Process Operations AI™ (Ops AI™ for short), acts as a new layer of information processing capability that builds on PLC and SCADA systems to bring water treatment data management into the 21st century. Interfacing with a plant's existing hardware and systems, Pani Zed™ integrates seamlessly into operational workflows and works around the clock to help teams aggregate, analyze, and interpret their operational data, providing timely decision support and actionable intelligence.

## Layers of technology:







# Plans that lay the digital foundations

Start the digital journey with data centralization and streamlined data management tools.

## View

Get connected, and get a clear, consolidated view of your data.

### Ideal for:

Stage in digital journey:

Early

Segments:

Desalination, Industrial, Municipal

Real-time data connection

Not required

Historical data

Not required

Instrumentation

Not required

### Key capabilities

- Data collection and centralization
- Customizable analytics and visualization
- Customizable workflows
- Customizable alerts
- Customizable reports
- Interactive data analysis

Digitize to save time, transforming physical log books into digital data inputs.

Gather data from sensors, lab tests, manual workflows, and more in the same place to stop working in silos and sifting through spreadsheets.\*

\*Popular with service/solution providers, OEMs, system integrators.

## Focus

Gain focus on what's most important to unlock value for your operations.

### Ideal for:

Stage in digital journey

Early to middle

Segments:

Desalination, Industrial, Municipal

Real-time data connection

Recommended

Historical data

Recommended

Instrumentation

Recommended

e.g. flow, pressure, temperature, pH, conductivity

### Key capabilities

Everything in View, plus:

- Data quality assurance
- **Zed's Forecast:** Straight-forward trend forecasting
  - CIP, chemical inventory, sludge health, membrane scaling, and more.
- **Zed's Advanced Analytics:** Curated, industry-specific analytics\*\*
  - Consolidated view of KPIs for system health monitoring.

Improve data collection accuracy, establishing team-wide best practices that inform trending forecasts and data interpretation. Make better decisions with Zed's Advanced Analytics, tailor-made for tough treatment challenges.

\*\*Available for the following industry applications:

Seawater RO, food & beverage RO, municipal wastewater

Contact us or visit our website to explore plans that best fit your operations

✓ \$0 CapEx

✓ No retrofits, disruption, or downtime

✓ Monthly or yearly subscription





# Plans that elevate operations

Continue on the digital journey with automated analysis, diagnostics, and optimization recommendations.

## Guide

Get guidance on addressing detected issues and see where maintenance is needed to plan ahead.

### Ideal for:

Stage in digital journey:

Middle

Segments:

Desal, Industrial, Muni DW\* & WR\*\*

Real-time data connection

Required

Historical data

Required, 3 months minimum

Instrumentation

Required, digitized/automated

e.g. system state, feed, concentrate, permeate, pumps

\*DW = Drinking Water \*\*WR = Water Reclamation

### Key capabilities

Everything in View and Focus, plus:

- **Zed's Insights:** Automated fault detection, diagnostics, and prescriptions
  - Use Insights to identify fouling types, membrane condition warnings, water chemistry issues and more, preventing unnecessary downtime.
- **Enhanced capabilities within Zed's Forecast and Zed's Advanced Analytics:** Deeper system health monitoring for RO assets
  - More advanced model-driven forecasting for membrane servicing.
  - RO pressure vessel analytics identify potential hotspots in the skid
  - Membrane cleaning efficacy tools to track performance recovery after cleanings, and optimize cleaning conditions for desired membrane lifecycle management.

## Consult

Gain a 24/7 expert to consult on optimization opportunities and take your plant to peak performance.

### Ideal for:

Stage in digital journey:

Advanced

Segments:

Desal, Industrial, Muni DW\* & WR\*\*

Real-time data connection

Required

Historical data

Required, 1 year minimum

Instrumentation

Required, digitized/automated

e.g. system state, feed, concentrate, permeate, pumps

\*DW = Drinking Water \*\*WR = Water Reclamation

### Key capabilities

Everything in View, Focus, and Guide, plus:

- **Zed's Advice:** Real-time dynamic scenario optimization for energy, recovery, chemical usage, and total cost of ownership
  - Combine past and present operational data to predict future performance and identify optimization opportunities that drive down plant costs, risks, and process emissions.
- Further enhanced capabilities within **Zed's Forecast, Zed's Insights, and Zed's Advanced Analytics**
  - Most advanced forecasts for predictive RO membrane servicing.
  - Supporting pump maintenance, ultrafiltration, and microfiltration.

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✔ \$0 CapEx

✔ No retrofits, disruption, or downtime

✔ Monthly or yearly subscription



<b>Plans</b> Each plan builds and expands upon the last. As more data accumulates, capabilities evolve.	View	Focus	Guide	Consult
<b>Process Types</b> E.g. in seawater and brackish water RO applications like: ingredient water for food & beverage, manufacturing of semiconductors, pharmaceuticals, chemicals, and more.	Any/all	SWRO BWRO CAS MBR	SWRO BWRO CAS MBR	SWRO BWRO CAS MBR
Data collection and centralization	✓	✓	✓	✓
Customizable analytics and visualization	✓	✓	✓	✓
Customizable workflows	✓	✓	✓	✓
Customizable alerts	✓	✓	✓	✓
Customizable reports	✓	✓	✓	✓
Exploratory data analysis	✓	✓	✓	✓
Security measures	✓	✓	✓	✓
Data quality assurance		✓	✓	✓
<b>Zed's Forecast</b> Forecasting capabilities from straight-forward trend forecasts to membrane servicing and replacement forecasts aid in planning maintenance, managing resources, and preventing downtime.		✓	✓	✓
<b>Zed's Advanced Analytics</b> System health monitoring and curated, industry-specific analytics like RO normalization, solubility limits, F/M ratio, chemical inventory, and more.		✓	✓	✓
<b>Zed's Insights</b> Automated fault detection, diagnosis, and prescriptions featuring anomaly detection and a plant specific knowledge base that grows with the plant's historical operation.			✓	✓
<b>Zed's Advice</b> Real-time dynamic scenario optimization for energy, recovery, water quality, and total cost of ownership powered by advanced RO system modeling.				✓

Optimize your plant, without the guesswork.

Explore plan details at [pani.global](https://pani.global) ↗