Industrial Refrigeration

& Energy Management Control Systems

airixa
by PROCESS SOLUTIONS

Designed by Process Solutions, Inc.

Powered by Non-Proprietary Technologies

Technology Platform for Industrial Refrigeration & Energy Management

Delivering ripe, ready-to-eat fruits and vegetables to consumers requires a carefully calibrated refrigerated supply chain with numerous moving parts working together to create the right environmental conditions. Airixa is a technology platform for monitoring and controlling the entire industrial refrigeration process, with integrated energy and demand management features to help food processors run their operations more efficiently.

Refrigeration Controls

Airixa integrates with refrigeration equipment and instrumentation to monitor, control, and optimize your entire refrigeration process.

Demand Management

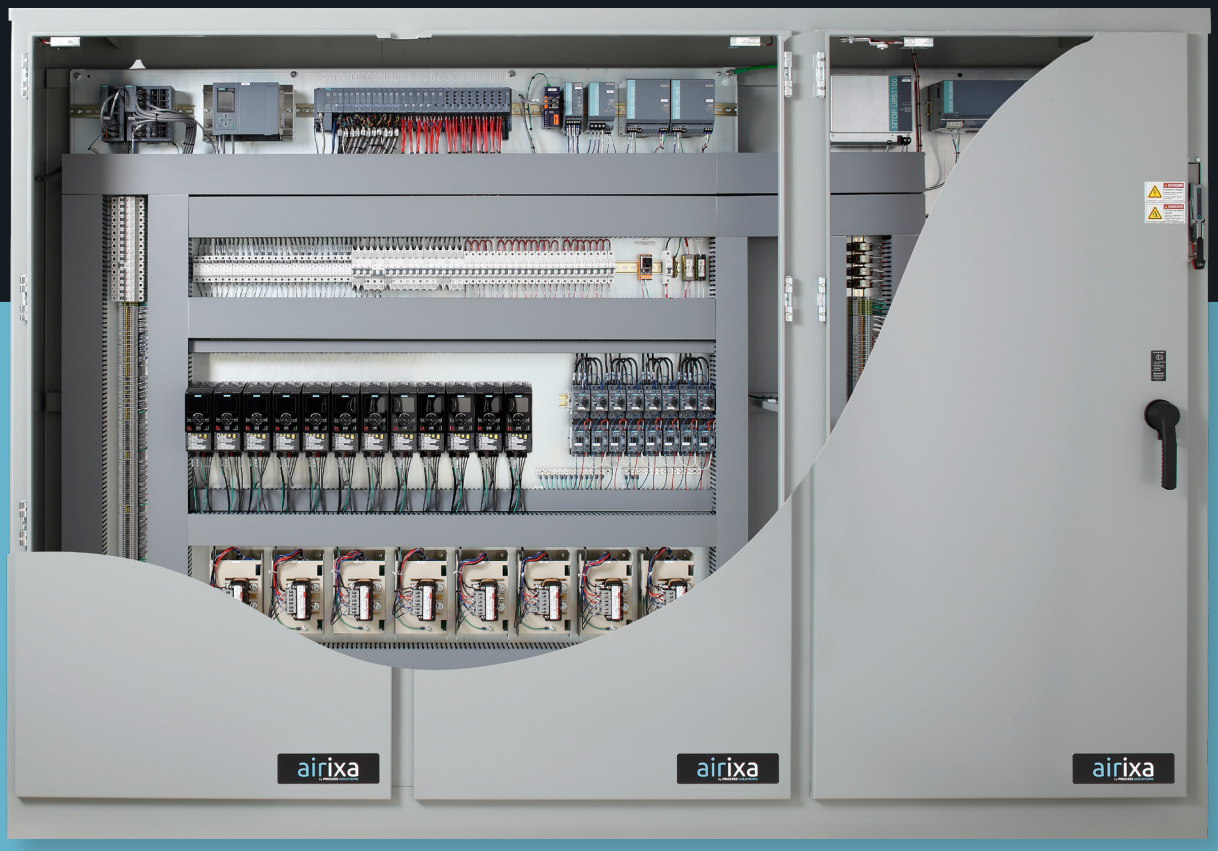
Limit demand spikes during peak utility rate periods and generate additional revenue with demand response rebates and incentives.

Efficiency Measures

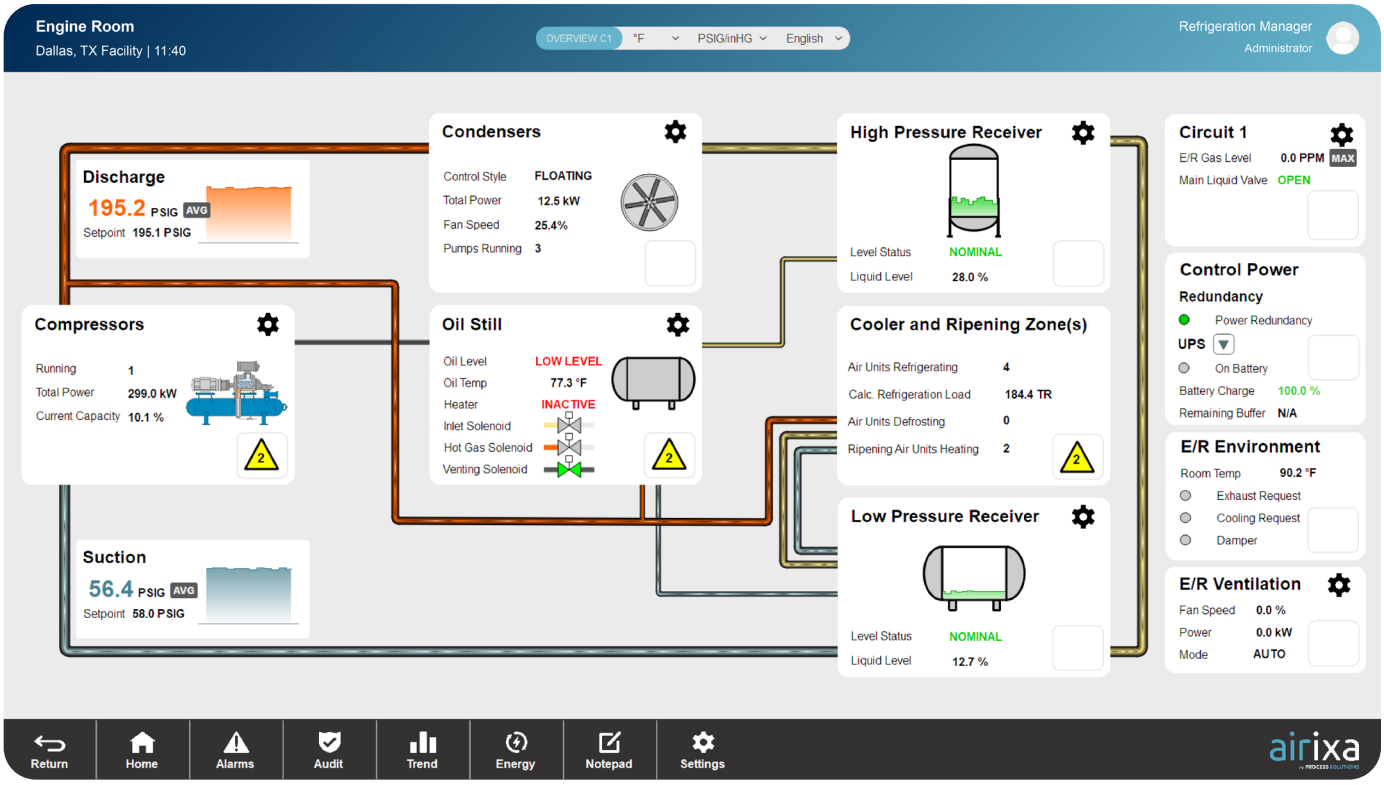
Efficiency measures, such as VFD speed control for evaporator fans, improve system efficiency without compromising performance.

Scalable

Object-oriented software design enables the ability to quickly add new equipment to Airixa without re-engineering the entire system.

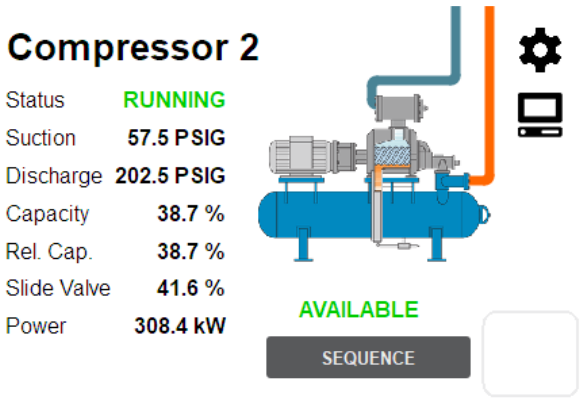


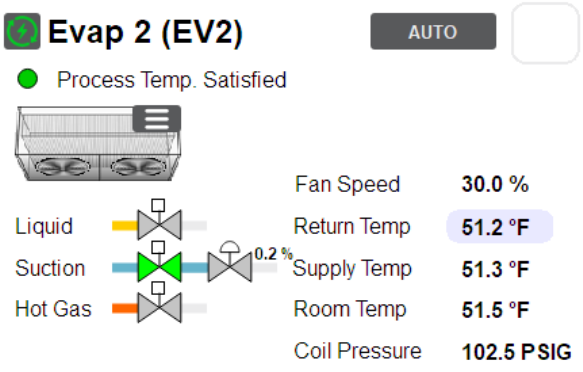
SCADA Software for System Monitoring, Control & Analysis



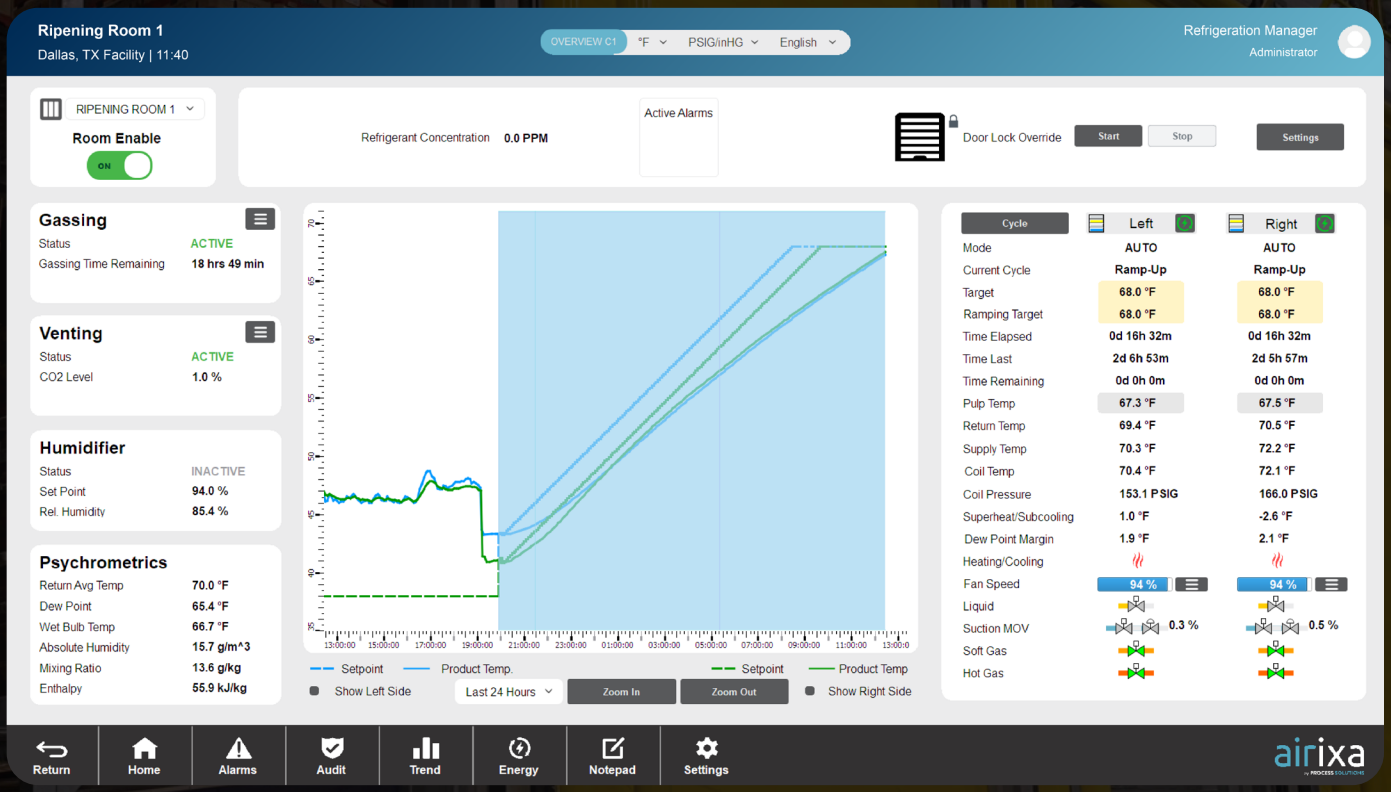
Refrigeration systems need to reliably operate 24/7 to prevent the loss of perishable food products. With Airixa's included supervisory control and data acquisition (SCADA) software, companies can monitor the status, health and performance of their entire refrigeration system from both the plant and enterprise level.

Through direct integration with PLCs and connected instrumentation, Airixa can collect real-time system data to generate informative displays, such as the engine room overview screen, which provides a graphic visualization of all the equipment comprising the refrigeration system. Clicking on an equipment tile, such as the compressors or evaporators tile, drills down to display various operational controls, live trends, data feeds, active alarms, and the current operating status for all connected equipment of that type.





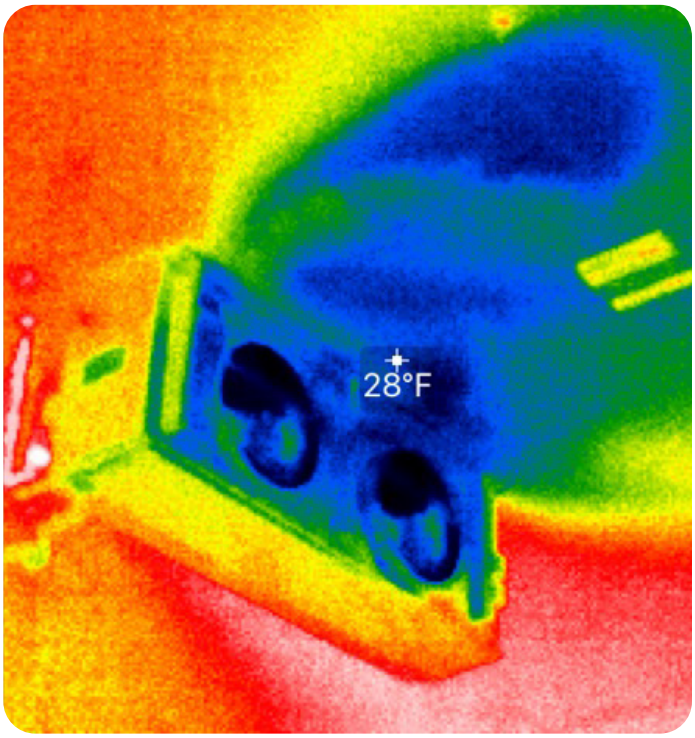
Produce Ripening Room Monitoring & Controls



Some fruits have specific environmental requirements for ripening to the desired taste and appearance. Through Airixa's ripening room dashboards, producers can monitor each ripening room and fine-tune the environmental conditions to control the ripening process and achieve their desired results. Each ripening room's dashboard displays information about the current environmental conditions within the room, such as the temperature, CO2 levels, humidity levels, and psychrometrics data, as well as refrigeration cycle data, active alarms, and live product temperature trending.

System Auditing and Traceability for Compliance

To ensure product quality and improve traceability, Airixa's SCADA package also provides the ability to perform system audits compliant with food safety requirements of the FDA CFR 21 part 11. Through the auditing dashboard, users can view all changes made to system parameters with a timestamp and log of who made the changes and from which location.



Instrumentation Integration & Data Monitoring

Refrigeration systems that contain Ammonia, Freon, and other refrigerants require constant monitoring for leaks to ensure the safety of workers and the environment. Airixa integrates with a variety of system instrumentation, such as Freon and Ammonia detectors, alarming strobes, and horns to provide immediate alerts in the event of a leak. Airixa also integrates with CO2, humidity, pressure, and temperature sensors to provide real-time information about the environmental conditions in and outside of your facility and ripening rooms.

Additional Refrigeration System Control & Monitoring Features:

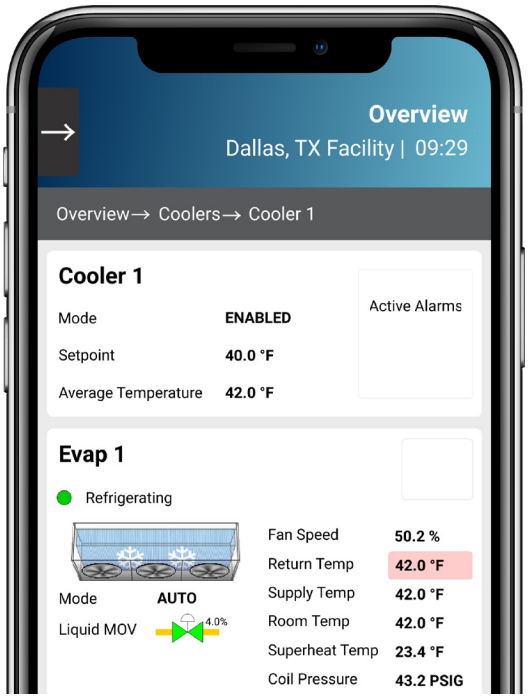
+ All common defrost cycles: hot gas, air, electric, water.
+ Evaporative condenser floating head pressure control based on wet bulb temperature.
+ Modulated control of evaporator suction valves for precise supply air temperature control.
+ Communication with common compressor controllers: GEA-FES, Frick, Mycom, and more.
+ Control of screw and reciprocating compressors, including diagnostics of all common safeties.
+ Evaporator fan speed control based on zone setpoints and temperature conditions.
+ Communication with common VFDs: Siemens, Rockwell, Schneider Electric, Yaskawa.
+ Compressor interlock features: high level, engine room Freon/Ammonia concentration, E-stop.
+ Refrigerant vessel monitoring and modulated level control.
+ Recirculator pump runtime-based sequencing and differential pressure data (cavitation prevention).

Remote Access & Multi-User Authentication

As many production facilities have multiple locations that operate around the clock, Airixa needs to be accessible from anywhere and at all times. To ensure a high level of availability, Airixa provides remote access to live data through native iOS and Android applications. Airixa is also accessible via web browser from any internet-capable device and includes simultaneous multi-user login with authentication for permissions-based operation.

Download on the App Store

GET IT ON Google Play



Improve Efficiency & Reduce Energy Consumption

Airixa includes a range of efficiency features, such as evaporator fan VFD speed control, compressor optimization, and condenser floating discharge pressure, to help companies operate their refrigeration systems more efficiently and reduce energy consumption without sacrificing production performance.

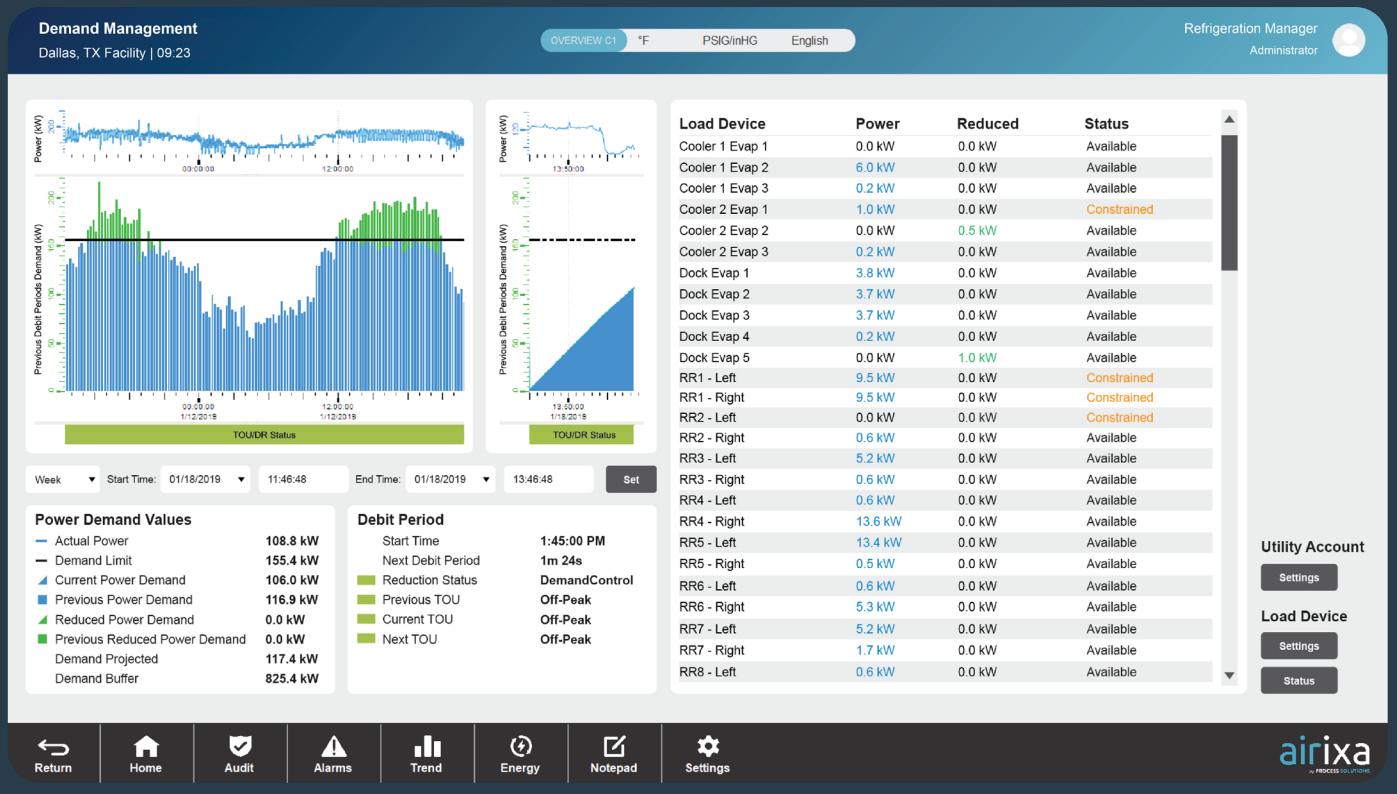
Efficiency Features:

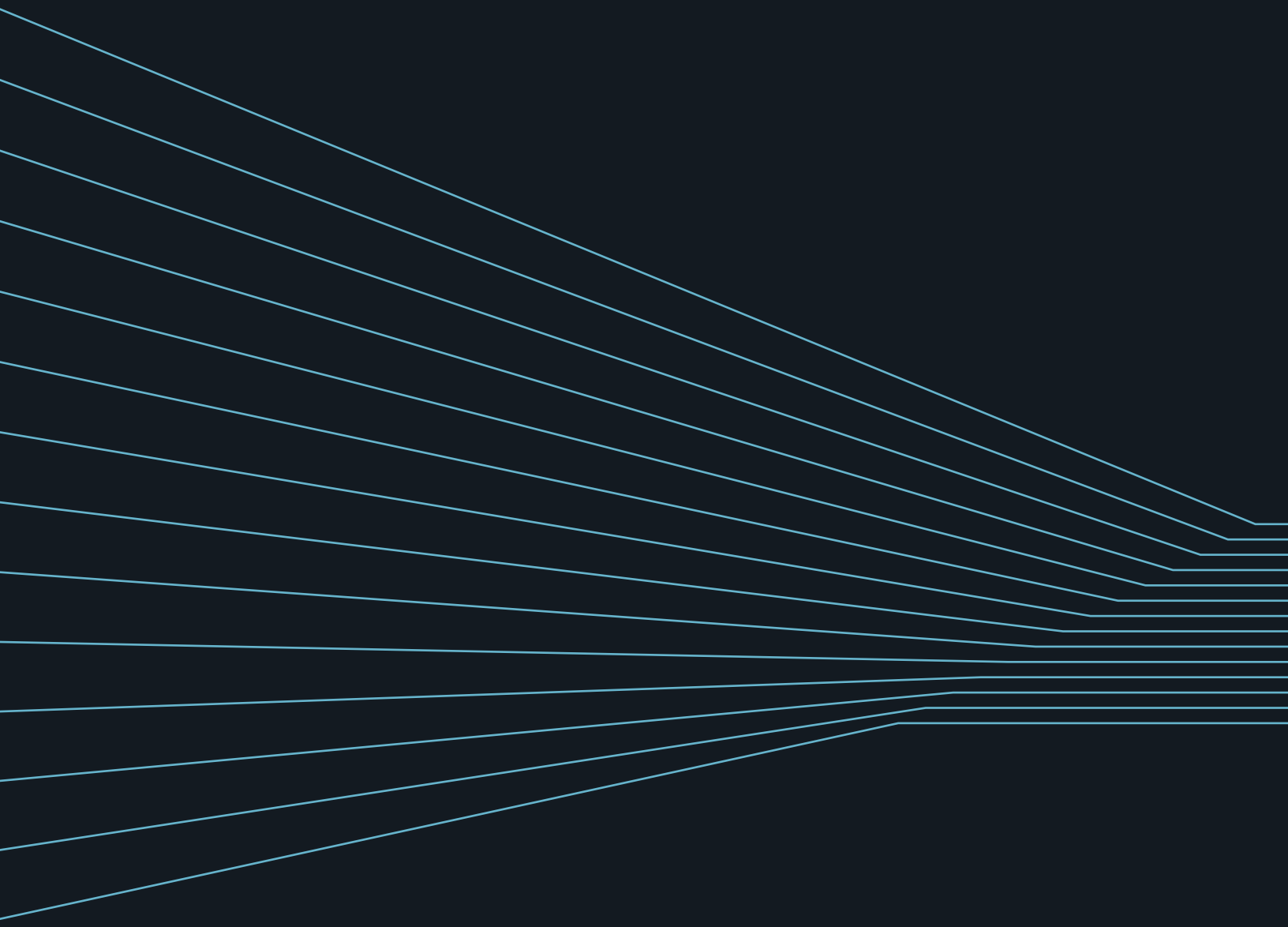
+ Demand Control and Demand Response.
+ Adaptive demand limits (setpoint learning).
+ User-selected load reduction priorities.
+ Dynamic operation priorities based on production metrics and constraints.
+ Condenser floating discharge pressure control.
+ Equipment start-up sequencing.
+ Available load sub-metering.
+ Support for multiple utility accounts within one facility.
+ Detailed energy, demand, and reduction monitoring of individual loads.
+ Solar and wind generation tracking.
+ Compressor optimization with staging, sequencing, and floating suction pressure control based on zone temperature feed-back and other factors.

Significant Energy Savings & ROI with Demand Management

Electricity bills include demand charges measured in kilowatts (kW) based on the peak demand within a billing period. Typically, the demand charge is determined by the highest average kW during a set time period and can account for up to 10-40% of a business's utility bill. Through sophisticated load reduction capabilities, such as equipment start-up sequencing, user-selected load reduction priorities, adaptive power demand limits, and load shifting algorithms, Airixa can significantly reduce your energy bill by limiting energy demand spikes during peak periods when utility rates are highest. Many US companies that implement demand response can even generate additional revenue through rebates and incentives offered by utility providers.

Airixa can help companies reduce their utility bill & associated demand charges by **10-40%**





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