CIRIO

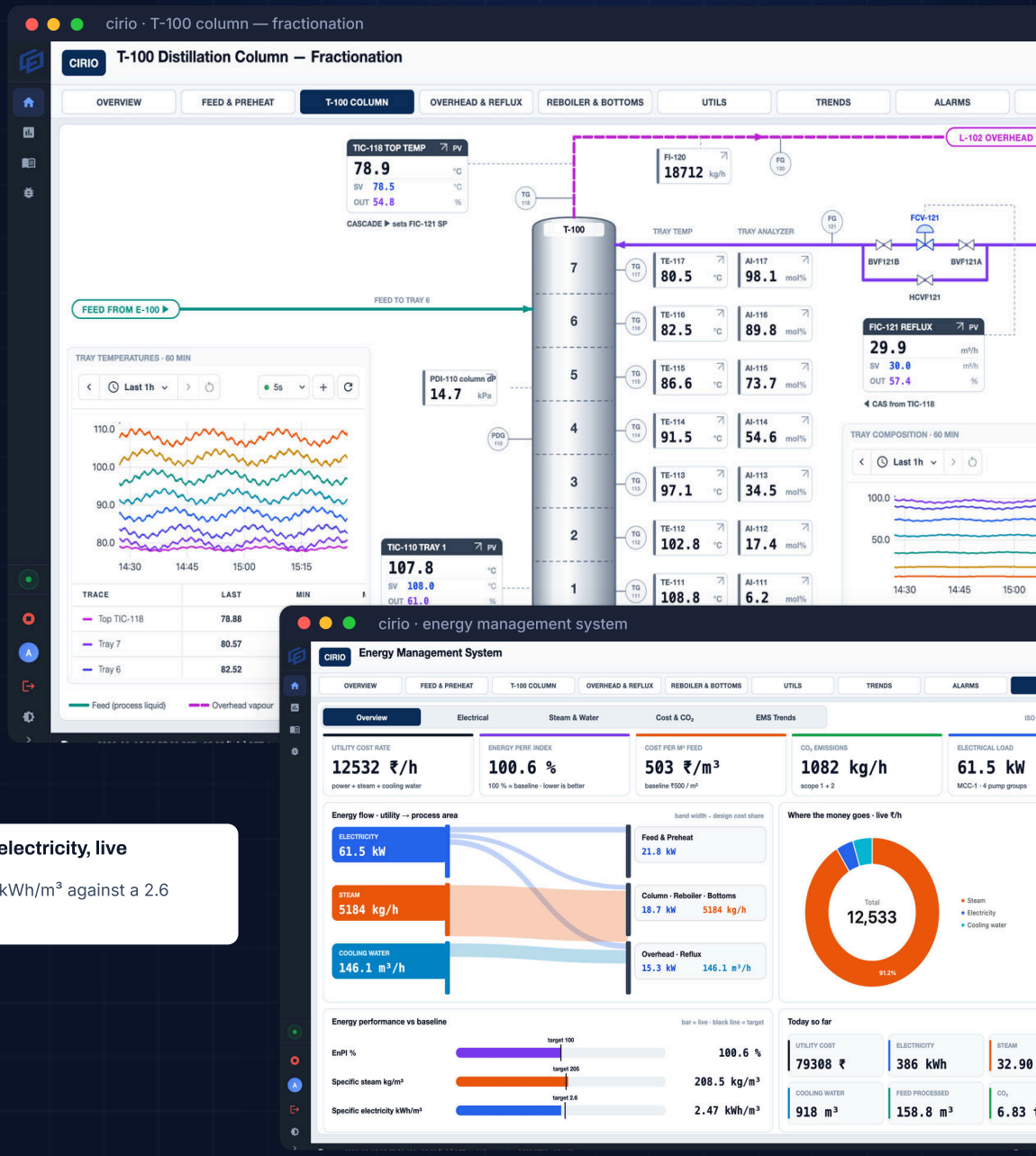
Product catalogue · 2026

SCADA · HMI · ENERGY MANAGEMENT

# See the whole plant. Act on every number.

One platform for operator screens, alarms, history, reports and energy management — that talks with the AI assistants you already use, like ChatGPT and Claude.

Process graphics · P&ID to screens · Energy management · Open protocols




**Specific electricity, live**

**2.47** kWh/m³ against a 2.6 target

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# One runtime. Every view of the plant.

CIRIO connects to PLCs, meters and analyzers and turns the data into live process graphics, alarms, trends, reports and energy KPIs — in the browser, on the desktop or at the edge.

SEE

### Screens like the plant

Tanks fill, pumps run, valves move — every value where the P&ID puts it.

BUILD

### P&ID to screens

Hand over your drawings. Get editable, live operator screens to review.

SAVE

### Energy management

Electricity, steam, water and gas traced to each area, with losses and data coverage.

ACT

### Alarms that help

Clear priorities, shelving on record, and e-mail or WhatsApp alerts.

CONNECT

### Works with what you have

PLCs, energy meters, building systems and IIoT devices on open protocols.

RECALL

### History & reports

Reconstruct any shift. Scheduled reports in Excel, CSV or HTML.

TRACE

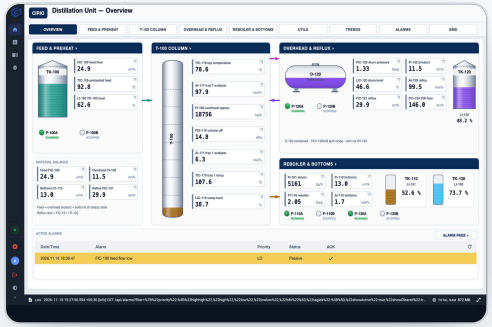
### Every change on record

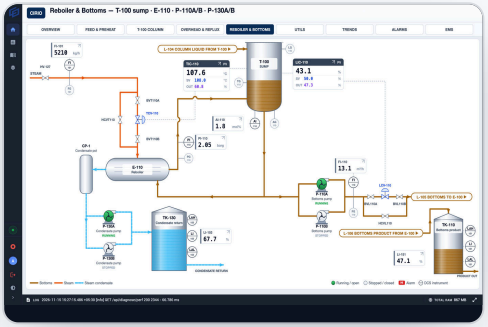
Who changed what and when — from a screen, an integration or an assistant.

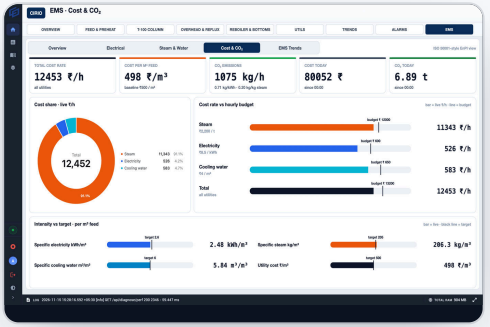
ASK

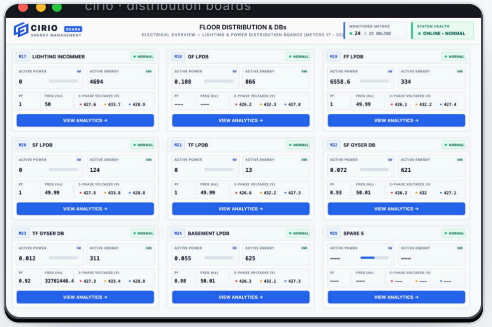
### Optional AI assistant

Ask in plain language; answers worked out from your own data.

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08 Alarms
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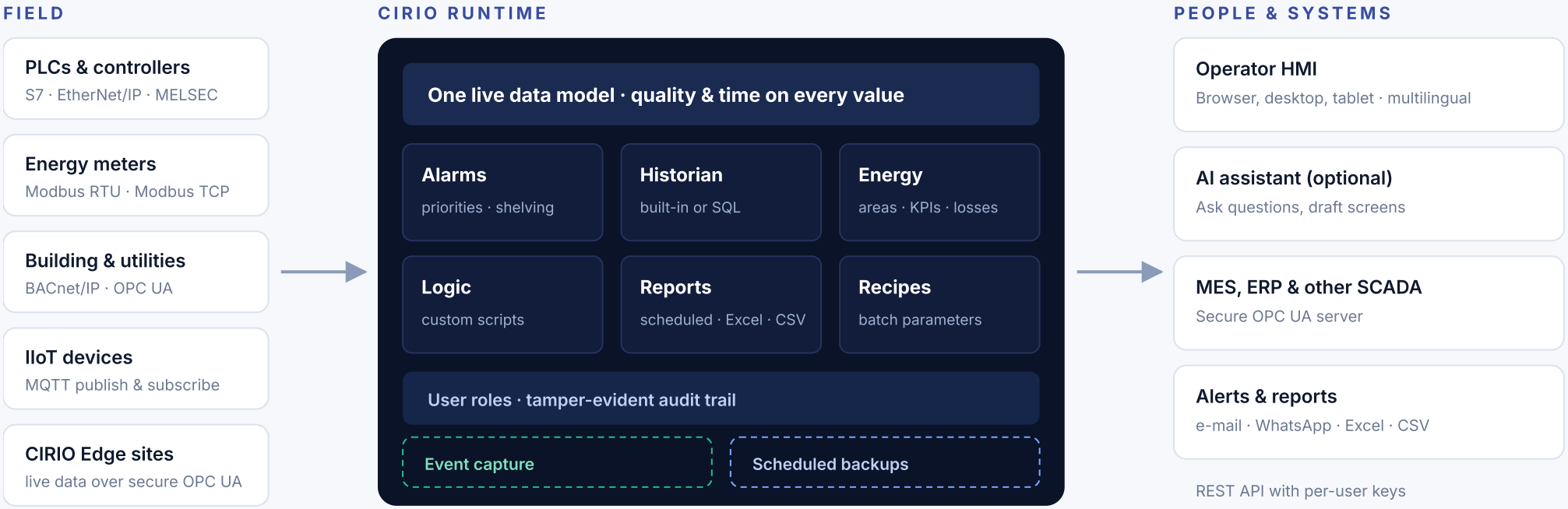
# From field signal to operator and report

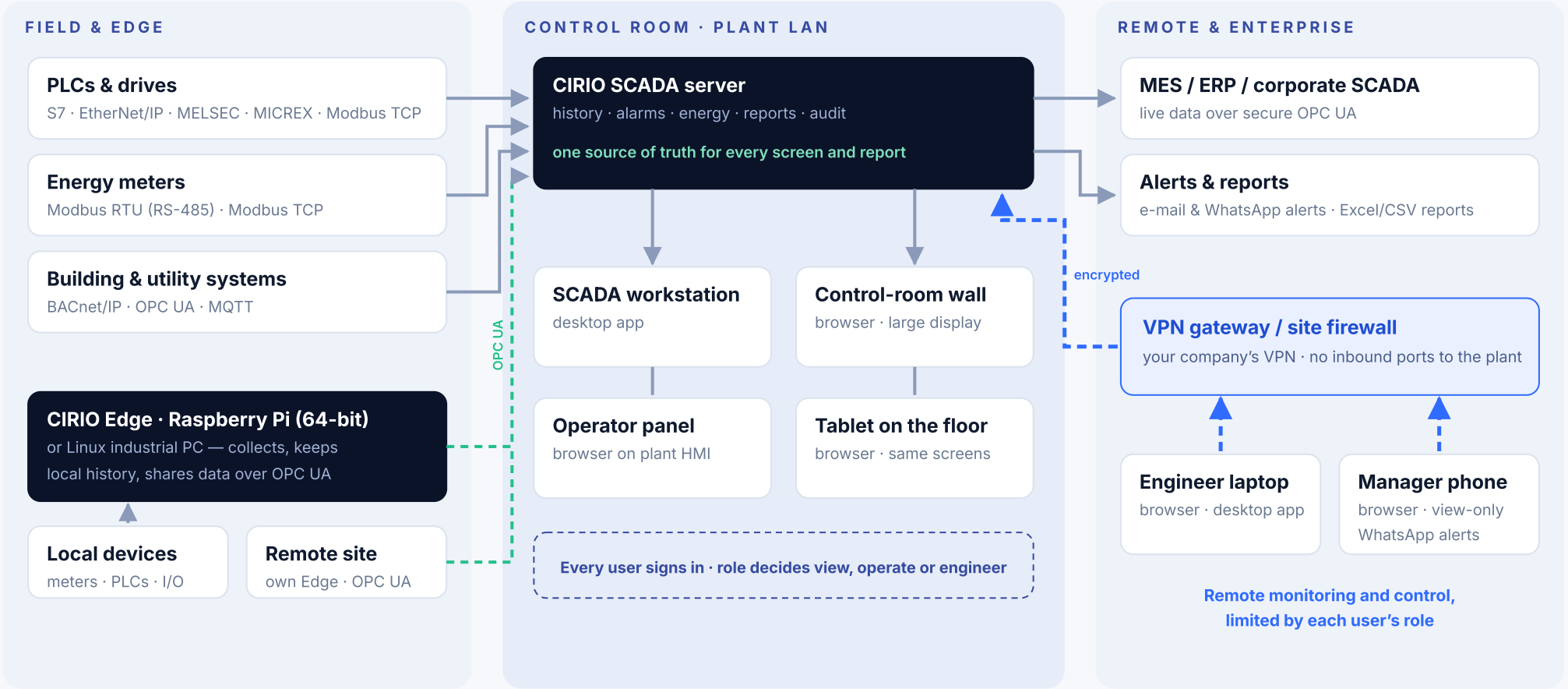
Every value enters once. Screens, alarms, history, energy and reports all read the same live value, so the number on the screen is the number in the report.




Runs on: your server or cloud VM · Windows / macOS / Linux workstation · industrial edge PC

# Edge to control room to anywhere

A typical plant: edge nodes on a Raspberry Pi or industrial PC, a SCADA server and workstations in the control room, and secure remote access over your company's VPN.




### Edge keeps running

If the link to the server drops, the edge keeps collecting into its own local history; live values resume over OPC UA when the link returns.

### Low-cost edge

A 64-bit Raspberry Pi or compact Linux industrial PC next to the equipment; the server reads it over secure OPC UA.

### Remote without exposure

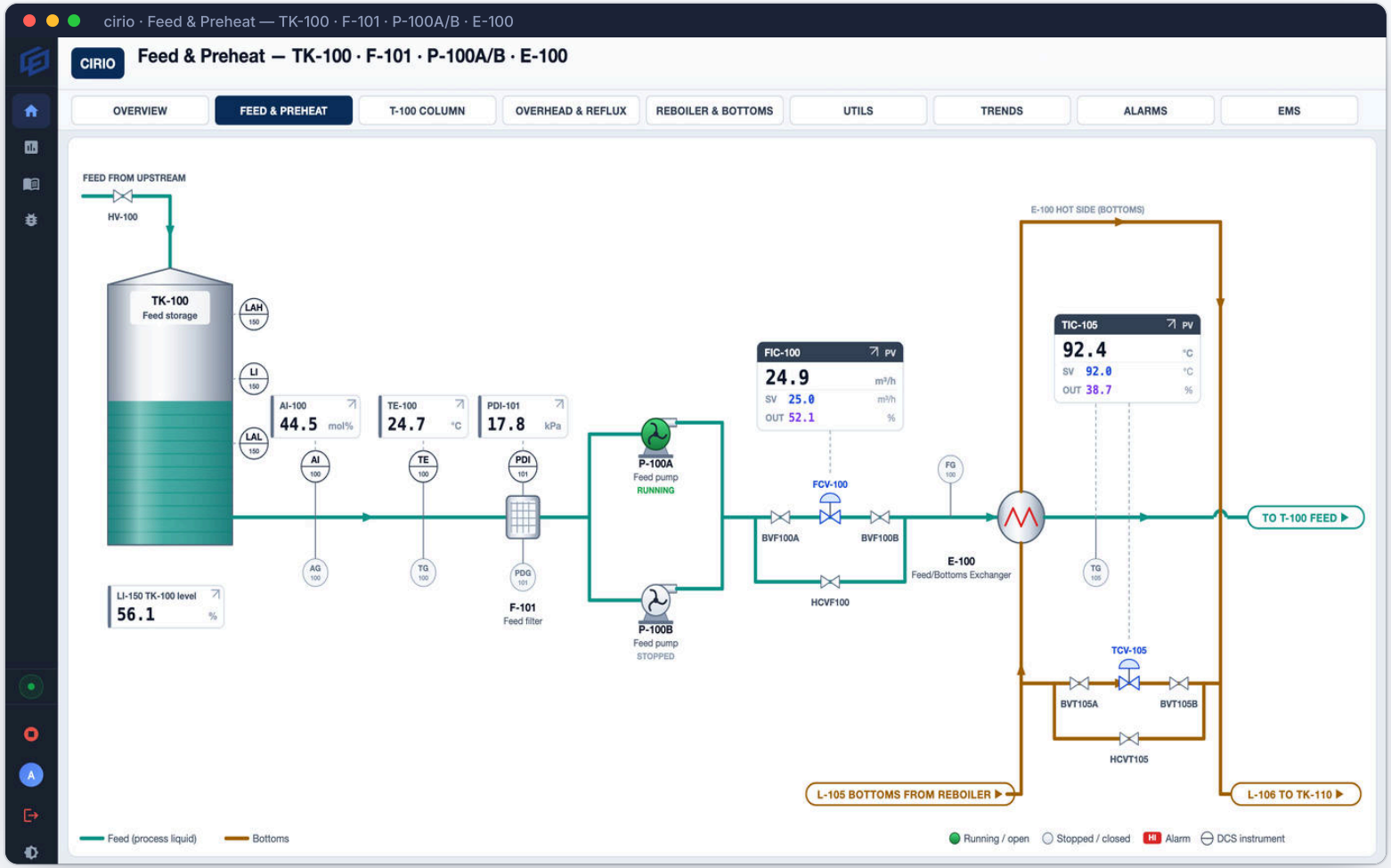
Remote users connect over your company's VPN — the plant network is never opened to the internet.

### One login, one role

The same role rules apply in the control room, on the floor and from home.

# Screens that look like the plant

Process graphics are drawn with native, live equipment — tanks fill, pumps turn green, valves report position, lines carry the medium colour. Every value sits at its measuring point, the way it does on the P&ID.




1 **Live equipment state**
Duty and standby pumps, run/stop colour, valve open feedback and tank level fill bound directly to tags.

2 **Control loops in place**
FIC-100 and TIC-105 show PV, SP and output where the loop sits on the line, not in a separate list.

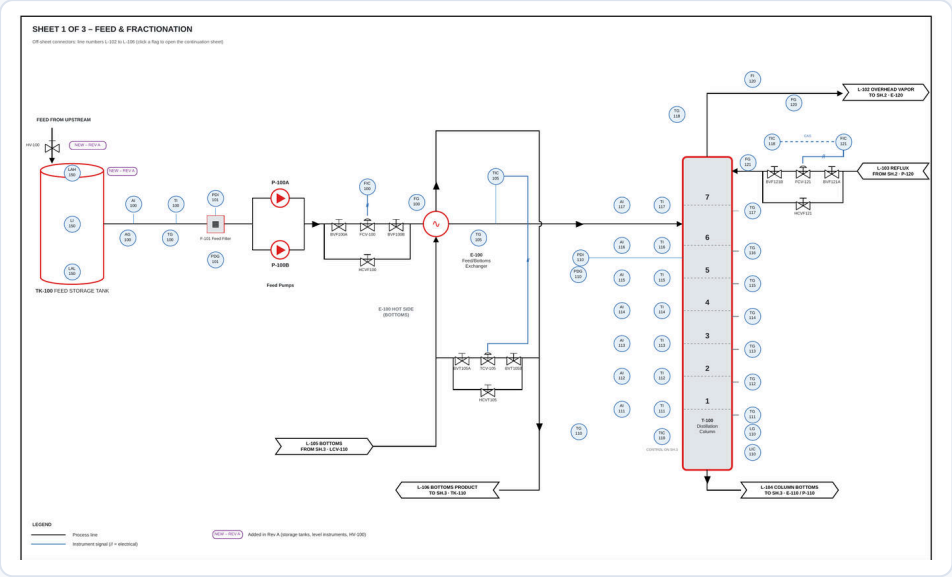
3 **Off-sheet connectors navigate**
L-105, L-106 and the T-100 feed flag open the continuation screen, exactly like the drawing.

4 **ISA instrument balloons**
Every transmitter, gauge and switch from the P&ID, with a one-click faceplate (page 07).

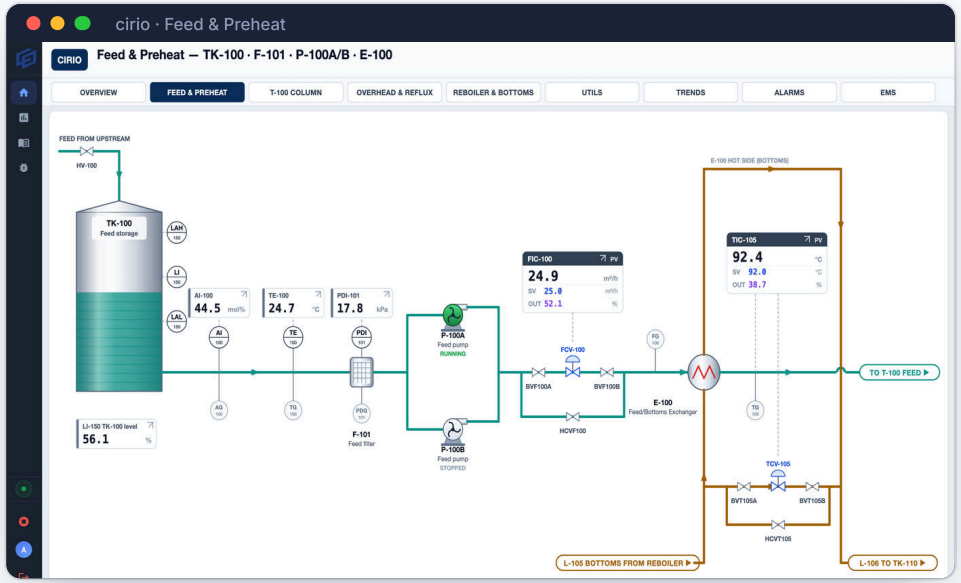
5 **Legend and media colours**
Process liquid, bottoms, steam and cooling water are colour-coded across every screen.

# Hand over the P&ID. Get the operator screen.

An AI assistant connected to CIRIO reads your drawing, traces equipment, lines and instruments, and draws native, editable CIRIO screens with live equipment. Your engineer reviews and fine-tunes — no drawing from scratch.




Input · Distillation P&ID, sheet 1 of 3, “Feed & Fractionation”




Output · live, editable CIRIO screen with bound tags and navigation

### 01 · READ
**Trace the drawing**

Equipment, routes, flow direction, loops and every instrument balloon are listed before anything is drawn.

### 02 · MODEL
**Set up the data**

The assistant creates tags, devices and alarm limits, and lists anything still needing a PLC address for your engineer.

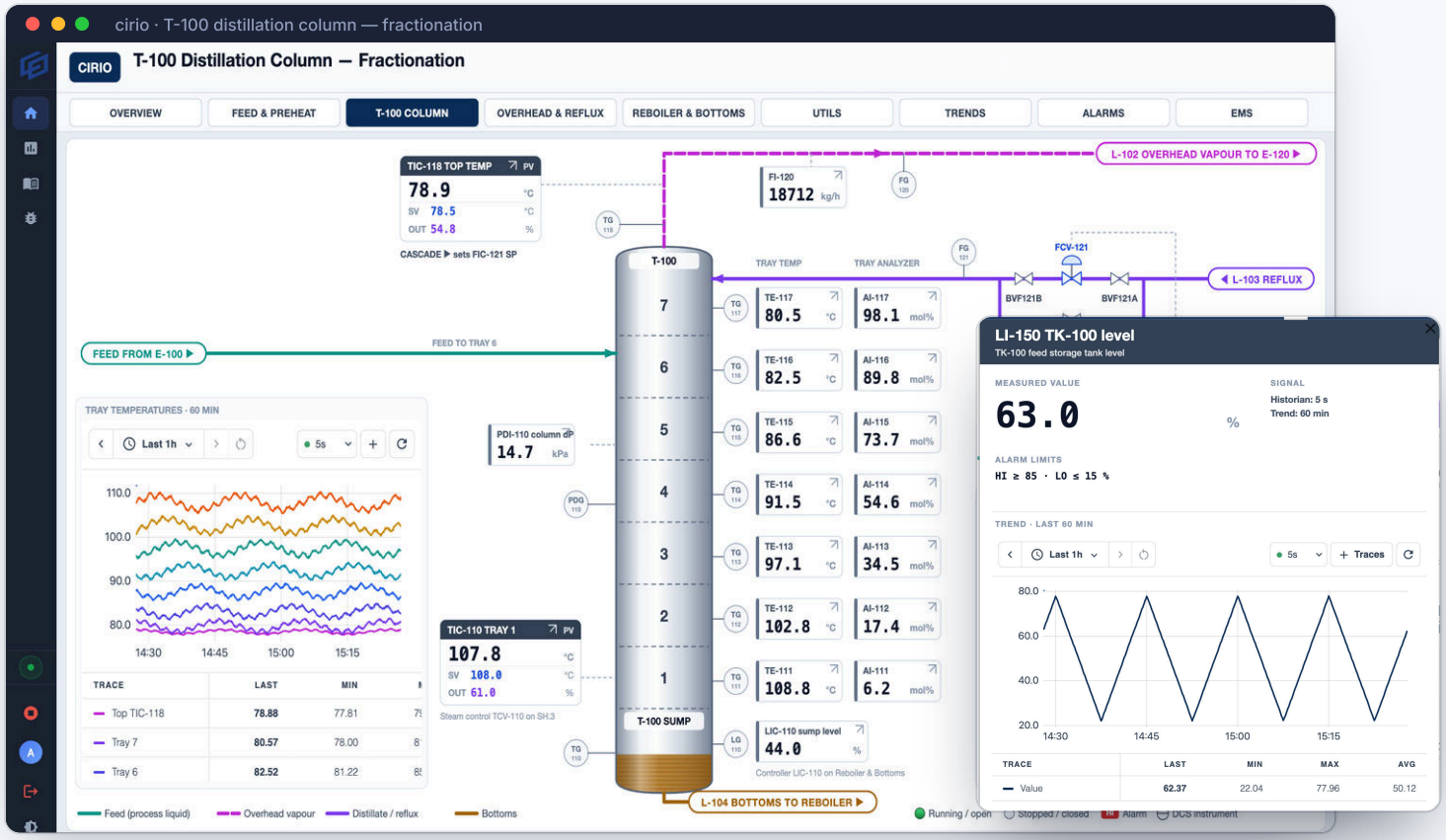
### 03 · COMPOSE
**Draw native graphics**

Tanks, pumps, motors, valves, instruments and process lines keep the P&ID layout; off-sheet flags become page buttons.

### 04 · VERIFY
**Checked before save**

Every screen is checked for overlapping controls and text that doesn’t fit, so it opens clean on the first run.

# Every instrument, one click deep




Seven-tray column with live tray temperatures and composition, cascade TIC-118 → FIC-121, embedded 60-minute trends.

### One-click faceplates

Faceplates you design open with one click — here LI-150 with value, limits and trend.

### Live equipment library

Tanks, reactors, pumps, motors, valves and process lines that animate with live data — plus trends and energy widgets on any screen.

### Symbols + your own artwork

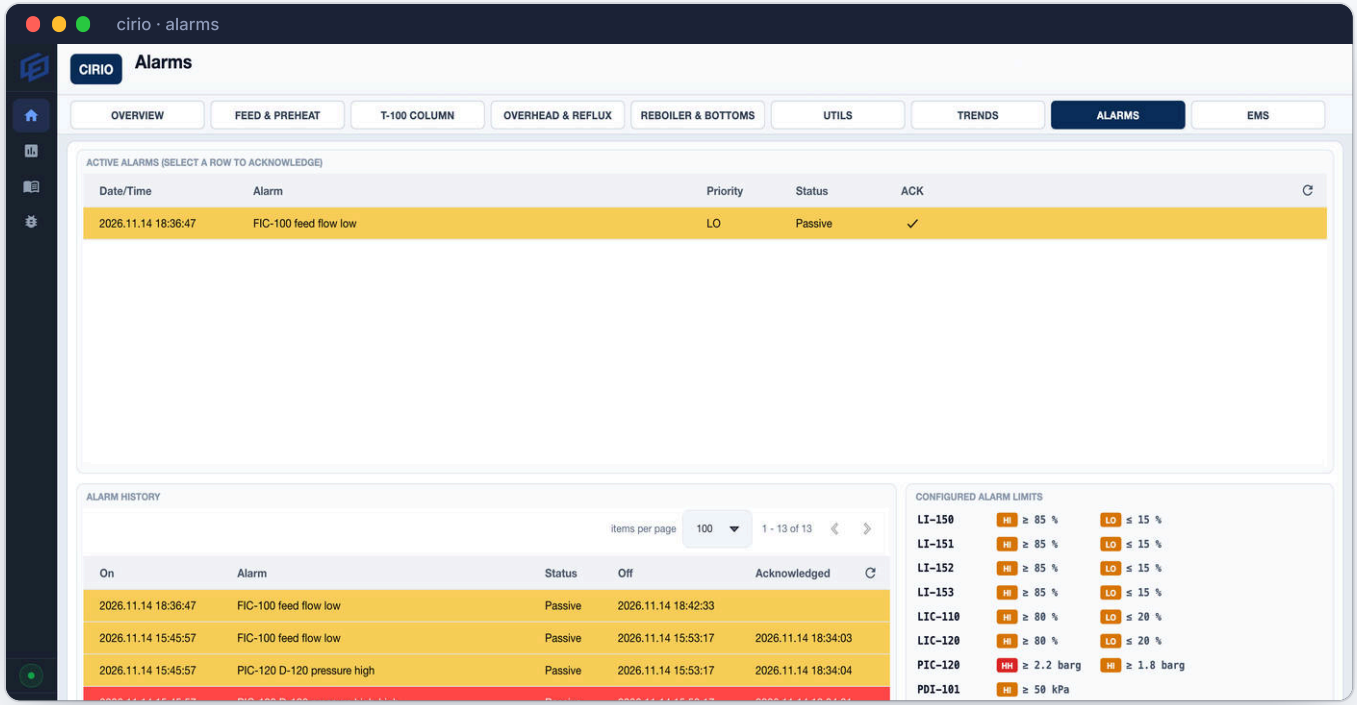
Agitators, exchangers, compressors and more. Add your plant's own graphics and reuse them across projects.

### Reusable faceplates

Build a smart symbol once and reuse it on every pump, meter or tank.

# Alarms with context

Operators see what matters first, with the full history behind every alarm one click away.




Alarm screen: active alarms and full history with on, off and acknowledge times, beside a panel of alarm limits.

### Clear priorities

High-High to Low-Low, with on/off delays and latching to cut nuisance alarms.

### Shelving on record

Shelve a nuisance alarm for an hour; it returns by itself. Who shelved it is recorded, and why when your policy asks.

### Alarms that act

Pop up a screen, switch screens, write a value, run logic or send an e-mail or WhatsApp alert.

### Full history

Every activation, acknowledgement and clear, time-stamped, with the user and value.

### Acknowledge your way

Choose per alarm how it must be acknowledged, and who may acknowledge it.

ALERTS THAT FIND PEOPLE

## E-mail and WhatsApp alarm alerts

Send the right alarms to the right people, wherever they are — tag, value, priority and time in every message.

E-MAIL 15:45

**[HH] PIC-120 D-120 pressure high-high**

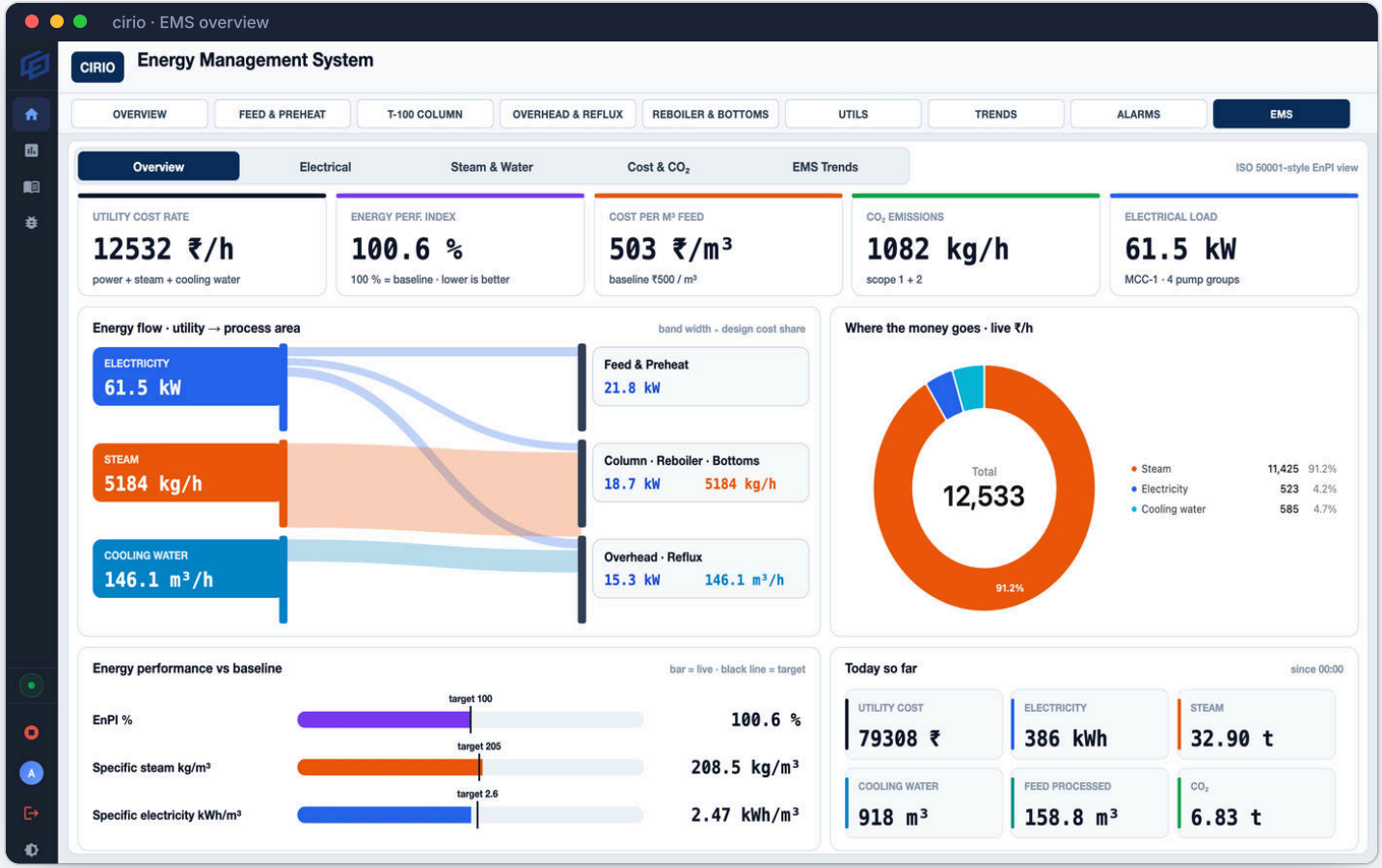
2.31 barg (limit 2.2) · Reboiler & bottoms · raised 14 Nov 15:45:57

WHATSAPP 15:46

**CIRIO · HH alarm**

PIC-120 D-120 pressure 2.31 barg — above 2.2 limit. Shift supervisor notified.

# Trace every unit of energy to the process




EMS overview: utility → process-area flow, cost share and today's totals for a distillation unit.

### Energy trees with exact allocation

Model site → area → line, to any depth. Share a meter across areas by percentage — totals always add up, nothing double-counted.

### Every utility, your units

Electricity, gas, steam, compressed air, water and heat in common units, converted to kWh-equivalent where you want one total.

### Virtual meters

Combine existing meters with formulas — sums, differences, scaling and like-for-like ratios — without new hardware.

### Honest numbers

See how much of each total is measured or estimated, and which meter caused a gap.

### Works with any meter

Energy counters, power readings or interval data, rolled up to 15-minute, hourly, daily, monthly and yearly totals.

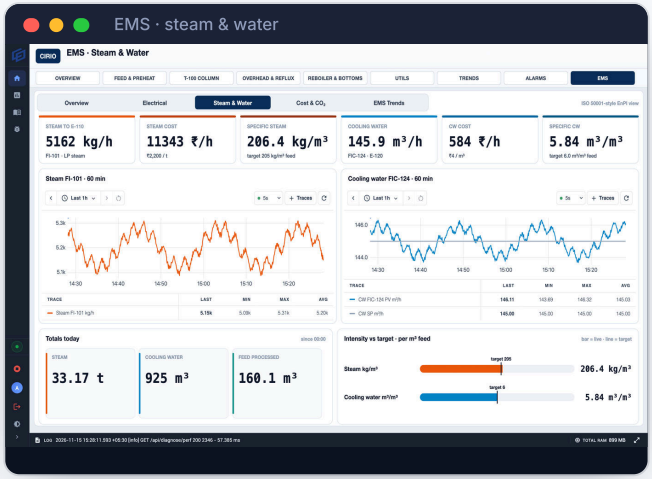
# Electricity, steam, water — and what they cost

Each utility gets its own view with live rate, intensity against target and the totals since midnight. Cost and $CO_2$ views use your own tariffs and emission factors, on the same tags as the process.



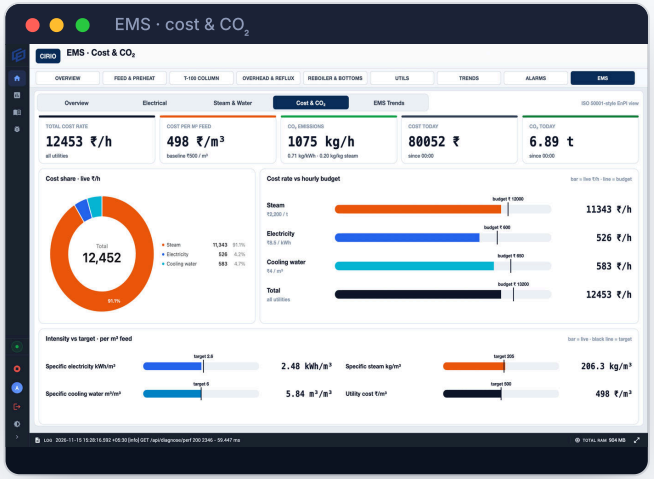

## Electrical

Load by pump group, share of MCC load and motor loading against rating: 61.8 kW across four groups, 2.48 kWh/m³.




## Steam & cooling water

Reboiler steam, condenser cooling water and intensity per m³ feed: 206 kg/m³ steam against a 205 target.




## Cost & $CO_2$

Cost rate against hourly budget, cost share by utility and $CO_2$ per hour and per day: ₹498 per m³ feed.

**61.8** kW
pump load, four groups

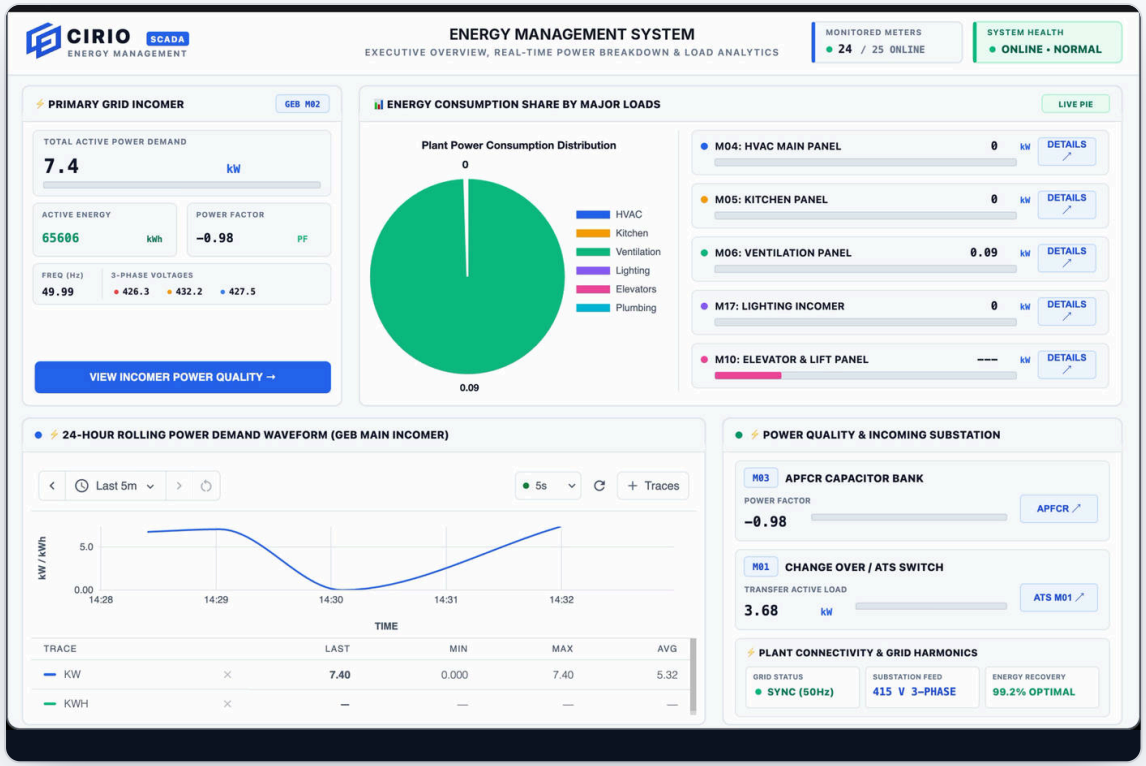
**206** kg/m³
steam intensity vs 205 target

**5.84** m³/m³
cooling water per m³ feed

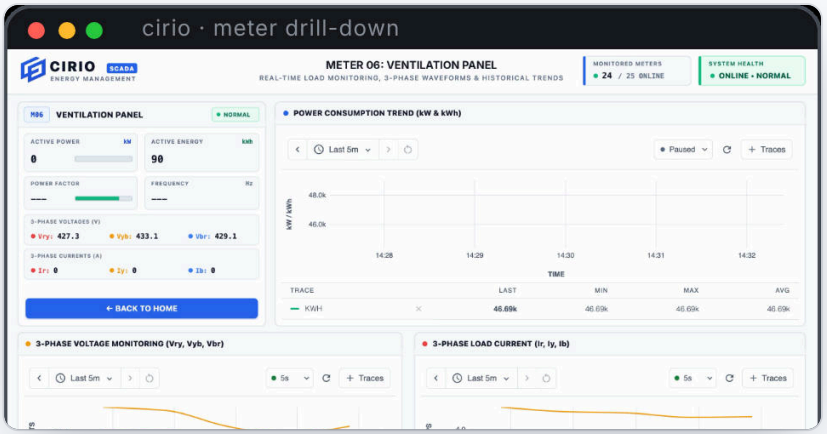
**₹498** /m³
utility cost per m³ feed

Energy widgets & energy tables on any screen · CSV export · Daily, monthly, yearly totals · Audited changes

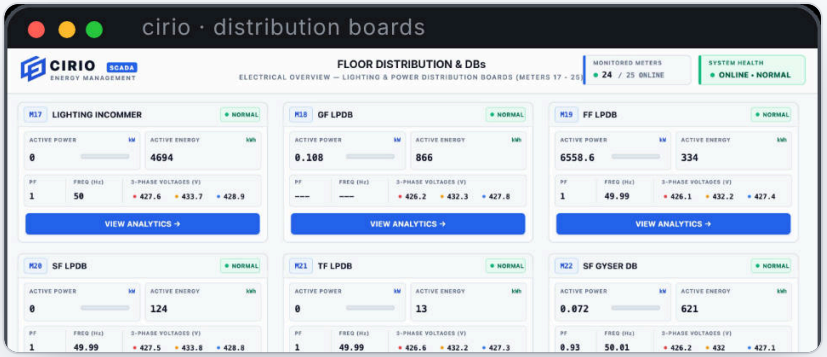
# Feeder-level visibility for the whole facility




Executive overview: grid incomer, load share by panel, 24-hour demand, power quality and ATS.




Meter drill-down: kW, kWh, PF, 3-phase V and I trends.




Distribution boards: every LPDB at a glance.

### 25 meters, one screen

Health status for every meter; gaps shown as missing — never as zero.

### Power quality

Voltage balance, frequency, power factor and APFC bank, drawn from your meter tags.

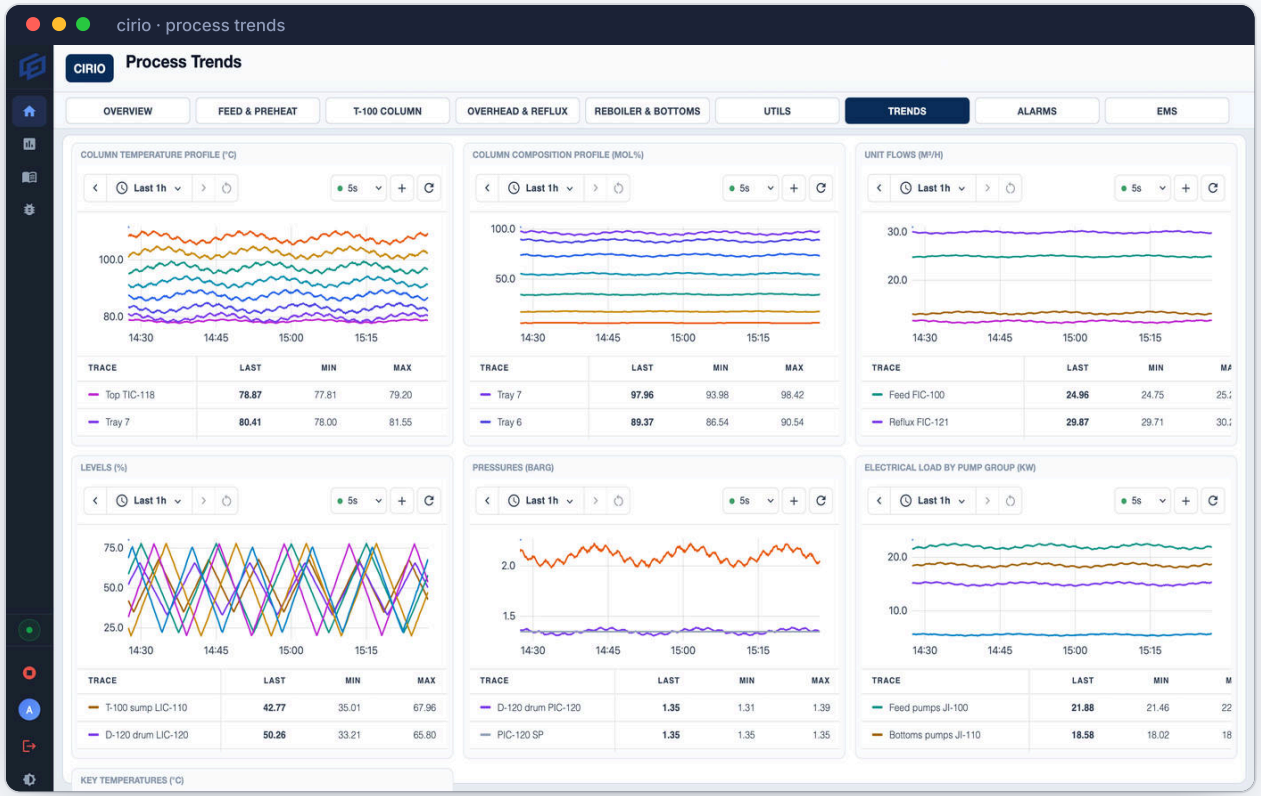
### Gaps handled honestly

Counter-based totals recover consumption across a gap and mark it as estimated.

### Losses made visible

Incoming meter minus everything measured below it, with negative losses flagged.

# Reconstruct any shift in seconds




Column temperature and composition profiles, flows, levels, pressures and electrical load on one shared time window.

## HISTORIAN

### Keep data as long as you need

Built-in storage for small sites, or an external PostgreSQL or QuestDB server for large ones.

### Nothing lost in outages

If the history database is unreachable, samples queue on local disk and are written in order when it returns.

### Trust what you see

Bad readings show as gaps and uncertain ones are marked — never drawn as zero.

## REPORTS

### Daily, weekly and monthly reports

Averages, totals, min/max and more — in Excel, CSV or HTML, saved to a local or network folder.

### Event capture

Record a fast window around a trip or threshold and get the report automatically.

# Talk to the equipment you already have

Connect PLCs, meters and building systems on their native protocols. Import device and tag lists straight from Excel.

| FAMILY | DRIVERS | NOTES |
|---|---|---|
| **Fieldbus & metering** | Modbus RTU, Modbus TCP | RS-485 serial or Ethernet; address profiles for Schneider and Delta PLCs |
| **Controllers** | S7, EtherNet/IP, MELSEC, MICREX | Read and write controller data directly |
| **Open standards** | OPC UA client, BACnet/IP | Browse and pick points from the device |
| **IIoT** | MQTT client | Subscribe and publish to IIoT brokers |
| **Edge sites** | OPC UA client | Read each CIRIO Edge site live over secure OPC UA |

NORTHBOUND

### Built-in OPC UA server

Share live plant data with MES, ERP or another SCADA — no extra gateway.

Signed & encrypted · Certificate control · Read-only or read-write · Off until enabled

### Also available

A REST API with per-user API keys, AI assistants over MCP, and custom scripts for your own logic.

### Excel import

Bring hundreds of devices and tags in at once, with a review step before anything changes.

### Multi-site

Head office reads every CIRIO Edge site live over secure OPC UA.

### Browse, don’t type

Pick OPC UA, BACnet and MQTT points by browsing the device.

Supported controller models are confirmed for each project.

# Questions a dashboard can’t answer

Connect an AI assistant through the open Model Context Protocol (MCP) and ask about your plant in plain language. It finds the data and does the arithmetic — no extra screen, report or spreadsheet.

**How much energy are we using per m³ of feed, and which area drives it?**

`energy meters` `feed flow totals`

**2.77** kWh / m³ feed

**241** kg steam / m³

92.3 m³ of feed used 255.1 kWh of pump power and 22,264 kg of reboiler steam. Column, reboiler & bottoms takes 38.8 % of the electricity and all of the steam.



Column 38.8 % Feed 36.9 % Overhead 24.3 %

**Are we running more efficiently today than yesterday?**

`energy meters` `day-by-day`

**−16.6%** electricity per m³

**−19.4%** steam per m³

Today 2.44 kWh and 208 kg steam per m³, against 2.93 kWh and 258 kg yesterday. The assistant flags that yesterday includes the start-up, so part of the gain is start-up penalty.

| | KWH/M³ | KG/M³ |
|---|---|---|
| **14 Nov** | 2.93 | 258 |
| **15 Nov** | 2.44 | 208 |

**Does the column balance close, and what does a m³ of distillate cost us in cooling water?**

`feed · distillate · bottoms totals`

**+0.22%** balance closure

**14.0** m³ CW / m³ distillate

Distillate 42.82 m³ + bottoms 49.66 m³ against 92.27 m³ feed. 46.4 % of the feed goes overhead; reboiler steam is 520 kg per m³ of distillate.

```
(D + B - F) / F = (42.82 + 49.66 - 92.27) / 92.27
```

Off until you switch it on · Read-only or read-and-write · Works within the user’s own permissions · Every action in the audit trail · Can draft screens from a P&ID

Example answers from an AI assistant connected to CIRIO on a distillation unit. Figures are illustrative.

# Accountable, recoverable, ready to run

## Tamper-evident audit

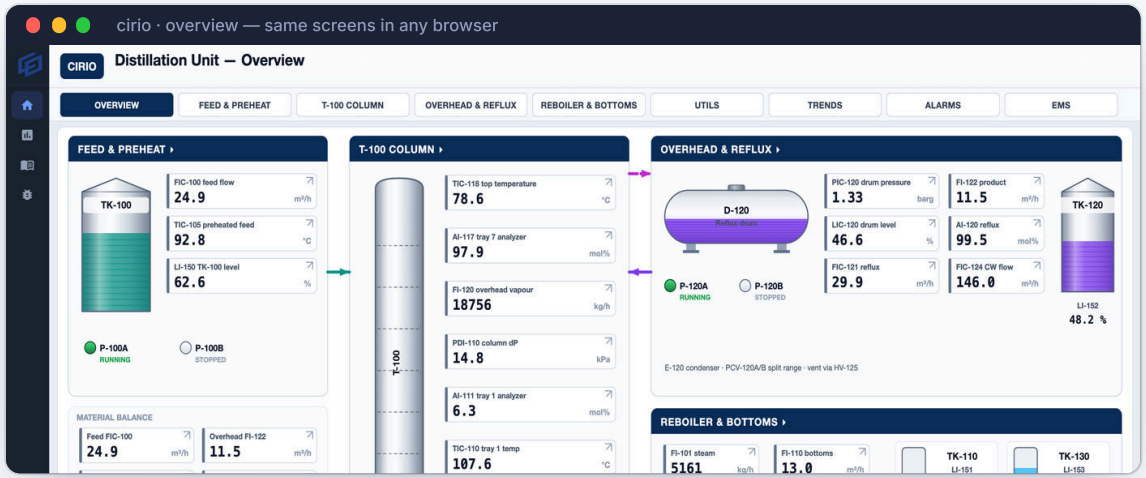
Every change is recorded — who, what, when, old and new value, and where it came from. Records are sealed so any tampering is detected.

## Access control

Roles decide who can view, operate or engineer each part of the system. Configurable password rules, lockout after failed sign-ins and one live session per user.

## Backup & restore

Scheduled, optionally encrypted backups. Verify any archive and restore it in one step, with a safety backup taken first.




## Same screens everywhere

Build once. Operators open the same live screens in a browser, the desktop app or on a tablet, scaled to fit — no per-device engineering.

### RUN IT WHERE THE PLANT RUNS

SERVER

#### Web server

Runs on your server or a cloud VM. Operators connect from any browser — nothing to install.

WORKSTATION

#### Desktop app

A control-room application for Windows, macOS and Linux.

EDGE

#### Edge device

Runs unattended on a Linux industrial PC or 64-bit Raspberry Pi next to the equipment, with local history; shares data over OPC UA.

# Right people, right controls

Define roles that match your organisation. Each role gets view or change rights per area of the system, and every user signs in with their own account.

| RIGHT | VIEWER | OPERATOR | SUPERVISOR | ENGINEER | ADMIN |
|---|---|---|---|---|---|
| **View screens & trends** | VIEW | VIEW | VIEW | VIEW | VIEW |
| **Operate: setpoints, start/stop** | — | CHANGE | CHANGE | CHANGE | CHANGE |
| **Acknowledge & shelve alarms** | — | CHANGE | CHANGE | CHANGE | CHANGE |
| **Load recipes** | — | CHANGE | CHANGE | CHANGE | CHANGE |
| **Run reports** | VIEW | VIEW | CHANGE | CHANGE | CHANGE |
| **Export data** | — | — | CHANGE | CHANGE | CHANGE |
| **Edit screens, devices, scripts** | — | — | — | CHANGE | CHANGE |
| **Read the audit trail** | — | — | VIEW | VIEW | VIEW |
| **Manage users & roles** | — | — | — | — | CHANGE |
| **Backups & system settings** | — | — | — | VIEW | CHANGE |

Example roles. Names and rights are yours to define.

### View or change, area by area

From screens, alarms and recipes to devices, scripts, users, audit, backups and settings.

### Seeing is not exporting

Downloading data is a separate right — a role can watch history without taking it off the system.

### Same rules everywhere

Control room, plant floor, remote VPN users, integrations and the AI assistant all go through the same roles.

### Accounts you can trust

Personal sign-in, configurable password rules, lockout after failed attempts, one live session per user and per-user API keys.

### Every change attributed

The audit trail records who did what, from where.