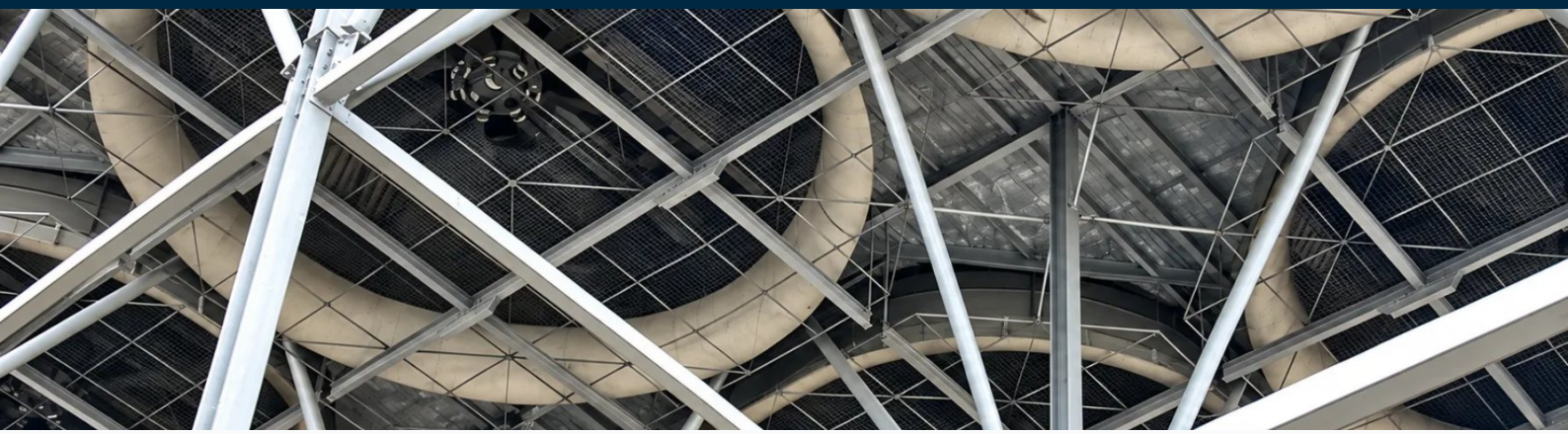
POWER GENERATION

Commissioning an air-cooled condenser on a zero-discharge site

A new CCGT station in France had to commission its air-cooled condenser without discharging a drop. Ecolutia cooled, settled and polished the contaminated condensate back to demineralised quality — and back into the boiler loop.



CLIENT
EPC – new Gas (CCGT) power station

LOCATION
France

SERVICE
Commissioning: ACC condensate polishing

DURATION
3 months

150 m³/h	0.06 µS/cm	250 m³/h	24/7/365
PRODUCTION FLOW	PRODUCT CONDUCTIVITY	CONDENSATE RECOVERY	SPECIALIST SUPPORT

THE CHALLENGE

Strict ZLD rules, dirty condensate, lost time to recover

To protect the local habitat, the new station was built as a zero liquid discharge site — so contaminated condensate from commissioning the air-cooled condenser could not simply be discharged, and removing it by tanker convoy was uneconomic and merely displaced the problem.

The condensate ran high in turbidity, silicate and iron particulate, yet had to reach demineralised quality for reuse in the high-pressure boiler — economically, compliantly, and while regaining time lost to construction delays.

PROJECT SNAPSHOT

Feed source
ACC condensate (20 µS/cm, 50 NTU)

Output quality
0.06 µS/cm · <10 ppb SiO_2 & Fe

Flow delivered
Up to 150 m³/h

Technologies
Filtration, ion-exchange + mixed-bed

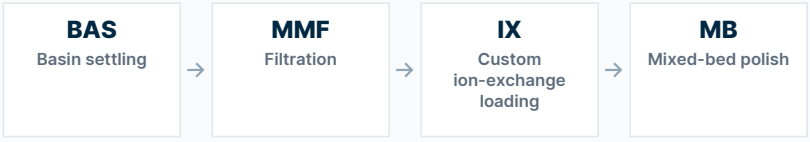
THE SOLUTION

Settle, filter, exchange — without chemicals

Condensate was aerated and blended with cold demineralised water in the site's largest basin, settling particulates and cutting turbidity below 10 NTU without chemical use. Proteus systems in multiple configurations then filtered and polished it through proprietary media, custom loaded ion-exchange and mixed-bed resin.

- ✓ 100-micron basket filters and multimedia units removing solid iron oxides
- ✓ Duty/standby custom loaded ion-exchange vessels — resin regeneration without interrupting production
- ✓ Mixed-bed resin polish delivering 0.06 µS/cm, <10 ppb Fe and <10 ppb SiO_2

TREATMENT FLOW PATH



THE RESULTS

Cleaner than spec, faster than planned

High flow through the Proteus systems cleaned the ACC thoroughly and ahead of schedule — achieving 0.5 ppm Fe against a 1 ppm customer spec — with a single field service engineer running the automated plant. The commissioning manager extended the contract to polish condensate through steam-turbine commissioning, and the developer has since named Ecolutia preferred supplier of condensate polishing for all its global projects.

COMMISSIONING UNDER ZLD RULES?

Polish it, reuse it, stay compliant.

info@ecolutia.com

Talk to us about a similar project
info@ecolutia.com
www.ecolutia.com

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