

## Start-Up and Commissioning Service

### Mobile Water Service

Ecolutia Services operates the world's newest and most efficient fleet of mobile water and wastewater treatment systems. Industrial and municipal customers trust our 24-hour, 365 days per year service for emergency, short-term or long-term use.

As your outsourced water treatment partner, we provide a rapid response service that ensures you benefit from the latest technologies and operating techniques. This critical service is available for worldwide deployment, incorporating customised solutions to match your requirements.

### Typical On-site Challenges

- Total water supply during project construction
- Supplemental water supply during construction of water treatment plant
- Supply of water to commission new plant
  - Boiler chemical clean
  - Hydrostatic test
  - Steam blow
- Rapid supply of water for return from outage

### Impact

During construction of a new facility and as it enters its final commissioning phase a large volume of treated water is required. Much of the treated water is required for steam

production for hot cleaning during steam blows, but also for ancillary equipment on-site which requires a sufficient volume of treated water for commissioning. The volume and flow of the treated water usually exceeds the capacity of the on-site water treatment plant. The difference can be up to ten times the daily requirement of a new facility.

Although commissioning of various components of the power station occurs in parallel with other site activity, the timeframe for completion is often tight and has a direct impact on the handover deadline to the owners. Therefore, any shortage of treated water can result in needless delays, major construction cost overruns and financial penalties.

### Service Solution

Treated water is needed for specific tasks but the timing can change at short notice. Therefore, the service and equipment flexibility of Ecolutia Services works in tandem with your operational changes, in line with on the ground realities.

Based on feedwater data from the site, a customised solution is deployed to meet your needs when you need it. The exact parameters of the project determine the volume of water required and the likely duration of the project. The amount of equipment required during a project may change to accommodate peaking requirements and additional treatment if feedwater quality alters or a higher volume is desired.

Our engineering team is on stand-by to provide you with suitable solutions for each project. Although, exact

operational specifications vary, the knowledge and experience of our team ensures we are ready for all potential outcomes.

## Example: Project A

**Challenge:** Unexpected construction delays to the permanent on-site water treatment plant compromises the commissioning schedule of a petrochemical facility. Further delays mean missing key milestones and result in difficulties downstream with other phases of the construction timetable.

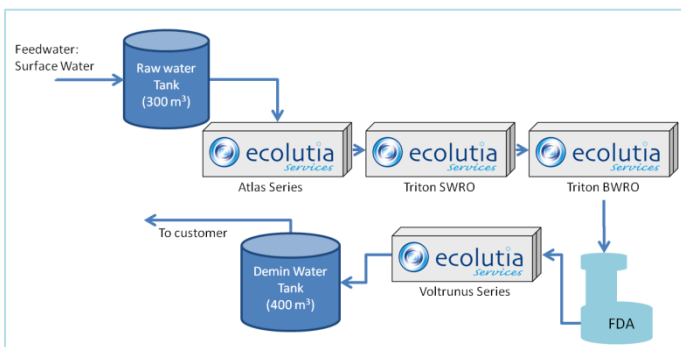
With the facility being in close proximity to a national park, tough environmental regulations mean extra effort is required to ensure environmental compliance. Additionally, failure to commence operations by the deadline could result in delays with delivery of large contacts for refined products.

**Response:** The mobile water treatment systems respond to treat open intake seawater with variable Total Dissolved Solid levels. The use of a total membrane solution for this project provides an absolute treatment barrier.

The Atlas Series micro-filtration system is setup as pre-treatment to a Triton Series seawater water reverse osmosis system. The product water from here then passes through to a Triton Series brackish water reverse osmosis which provides its permeate water to an Volturnus Electro-deionisation system.

The produced demineralised water fills a 400 m<sup>3</sup> holding tank, which is sufficient to allow commissioning and other construction works to continue. The mobile water treatment systems continue to supply water into the holding tank throughout the project to ensure adequate availability of pure water.

**Benefit:** An assured provision of demineralised water allows the commissioning to take place without any further delay and avoid delays in meeting project milestones. Additionally, construction of the on-site water treatment plant is completed without distraction and is tested. The whole process permits the power station hand-over to take place ahead of the original construction deadline.



## Typical Capacity of Systems\*

Proteus Series Media Loadings:

Softening	300 m <sup>3</sup> /h (1320 GPM)
Filtration	150 m <sup>3</sup> /h (660 GPM)
Demineralisation	300 m <sup>3</sup> /h (1320 GPM)
Condensate Polishing	250 m <sup>3</sup> /h (1100 GPM)
De-oxygenation	200 m <sup>3</sup> /h (880 GPM)

Atlas Series Micro-filtration 150 m<sup>3</sup>/h (660 GPM)

Triton Series Reverse Osmosis:

Seawater RO	60 m <sup>3</sup> /h (265 GPM)
Brackish Water RO	65 m <sup>3</sup> /h (286 GPM)

Volturnus Series 60 m<sup>3</sup>/h (265 GPM)

Electro-deionisation:

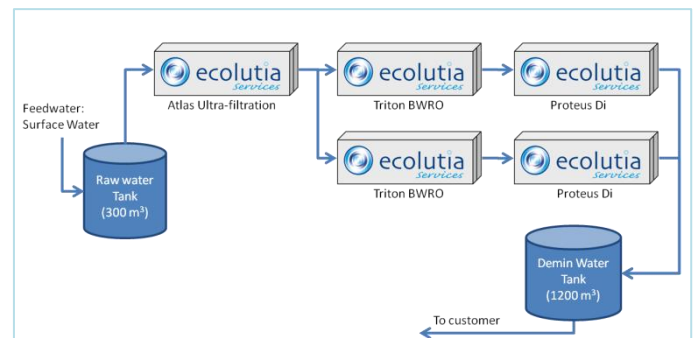
*\* Total product water flow is subject to feedwater quality*

## Example: Project B

**Challenge:** A permanent water treatment plant is unable to provide sufficient treated water to speed up the return of a power station from an outage. An additional volume of demineralised water is required to allow generation to start almost two weeks earlier than originally scheduled.

**Response:** To increase the volume of treated water two trains of Triton Series brackish water reverse osmosis systems are pre-treated by an single Atlas Series micro-filtration system. Permeate from the Triton Series units is then fed through a Proteus Series demineraliser system. The setup of the temporary system mirrors the permanent water treatment plant but provides a much larger volumes of product water.

**Benefits:** The power station restarts earlier and can generate additional revenue not previously possible when returning from an outage. The temporary water treatment plant proves its versatility for the rapid production of water. With no civil works, the temporary service is easily taken away once the project ends. The customer puts a new procedure in place to use the temporary systems for future use as this aids rapid restarts and revenue generation following an outage.



For a secure treated water supply contact Ecolutia Services