

The Nel After Sales Operations Centre:

Revolutionising Hydrogen Plant Monitoring and Optimisation

Nel is redefining Hydrogen Plant operations through the Nel After Sales Operations Centre (NASOC), an innovative solution developed in Norway.

The NASOC provides a live, global view of plant operations, instantly detecting alerts and anomalies at customer sites. Nel's advanced system allows service technicians to drill down to individual plants and components, such as the transformer/rectifier (power in) and ES modules (H₂ & O₂ output), enabling precise diagnostics and proactive interventions.

No matter the complexity of a service case, the NASOC enables a rapid response with expert support and:

- Remote Assistance from our multi-disciplinary specialists,
- On-site Technicians when needed,
- Performance Benchmarking to assess system stability, and
- **Preventative Maintenance** (an optional extra) to optimise production and efficiency.

The NASOC can simultaneously monitor:

- Energy Consumption (including Stack Voltage)
- H₂ Production
- Temperature and Performance Stability
- H₂ Purity

The NASOC can even **remotely control** your plant, facilitating optimal operations whilst safeguarding your data through **rigorous cybersecurity** protocols.

By investing in a Nel Service Agreement, you gain:

- Rapid Troubleshooting (same day acknowledgement)
- Plant Health Monitoring and Tuning (early detection to proactively reduce downtime)
- Time Bank (free hours to spend on remote support)
- Comprehensive Reports (site alarm alerts, resolution summaries and performance insights)
- Latest Software Updates (verified control system upgrades and service bulletins)

At your Hydrogen plant, stay ahead of the unexpected with real time intelligence, proactive service and expert support.





Additional Service Agreement Features:

In addition to the suite of NASOC features, customers gain:

- Energy Consumption Performance Guarantees. Nel guarantees that, over the lifespan of the stacks, the Energy Consumption will not exceed an agreed level. If the stacks underperform, Nel will award a discount on replacement cell materials or stacks.
- Service Rates Discount. A 15% discount on all Service Rates.
- Spare Parts Shipping. A five-day shipping target for Spare Parts.

Optional Extras:

These elements can be added to your Service Agreement, based on your requirements:

Training. Remote or in-person training progressively covering electrolysis fundamentals, safety principles, lye handling, site-specific operations, P&ID, troubleshooting, the Human-Machine Interface and Preventative Maintenance.

Spare Parts Pack. Spares for the lifetime (7 years plus) of components, that may be purchased to hold on-site for immediate access.

- **Inspection**. A physical assessment and report of the condition, functionality and safety of components.
- **Corrective Maintenance.** Repair of components after an issue, to return them to proper working condition. This may be delivered in person or remotely.
- **Preventative Maintenance.** In-person servicing of equipment to prevent unexpected failures and aid optimal performance.
- Stack Replacement. Depending on water quality, utilisation and other factors, the typical lifetime of a Nel stack is eight to ten years. The performance degrades each year, which increases the power consumption of the plant. Once the performance reaches a level agreed with the customer, a replacement will be recommended.

- Cell Materials Replacement. If the whole stack doesn't need to be replaced, specific cells may be targeted, based on their condition, stack performance or the plant's gas quality. The frequency is based on cell performance, but cells may benefit from replacement from four years of use.

For more details about our Alkaline service offer, or a quote, please email alkaline.service@nelHydrogen.com.