



Hydraeon Alkaline Water Electrolyser

Fuelling the future

From fossil fuels to future fuels, switch to green hydrogen with INEOS

Backed by decades of industrial expertise and project delivery in chlor-alkali electrolysis, INEOS is driving the hydrogen economy forward with Hydraeon technology, a safe, reliable and proven solution for large-scale green hydrogen production, engineered for power efficiency, scale-up, and sustainability.

High efficiency

- Ultra-low and class-leading energy consumption
- Proprietary, market leading electrode coatings
- Excellent gas qualities

Inherently safer low-pressure design

- Low-pressure safety case proven over decades of cellroom operation
- Reduced gas crossover, minimising flammability risk

Competitive CAPEX & OPEX

- Simple and cost-effective to operate and maintain, refurbish rather than replace elements
- Low-pressure design reduces maintenance costs

Flexible & Scalable

- Modular system designed to meet all project requirements
- Turndown to 10%
- Dynamic load following capability

Evolution of proven INEOS BICHLOR electrolyser

- Decades of experience in electrolyser design, manufacture & operation
- Single element electrolyser based on successful BICHLOR platform
- Installed globally

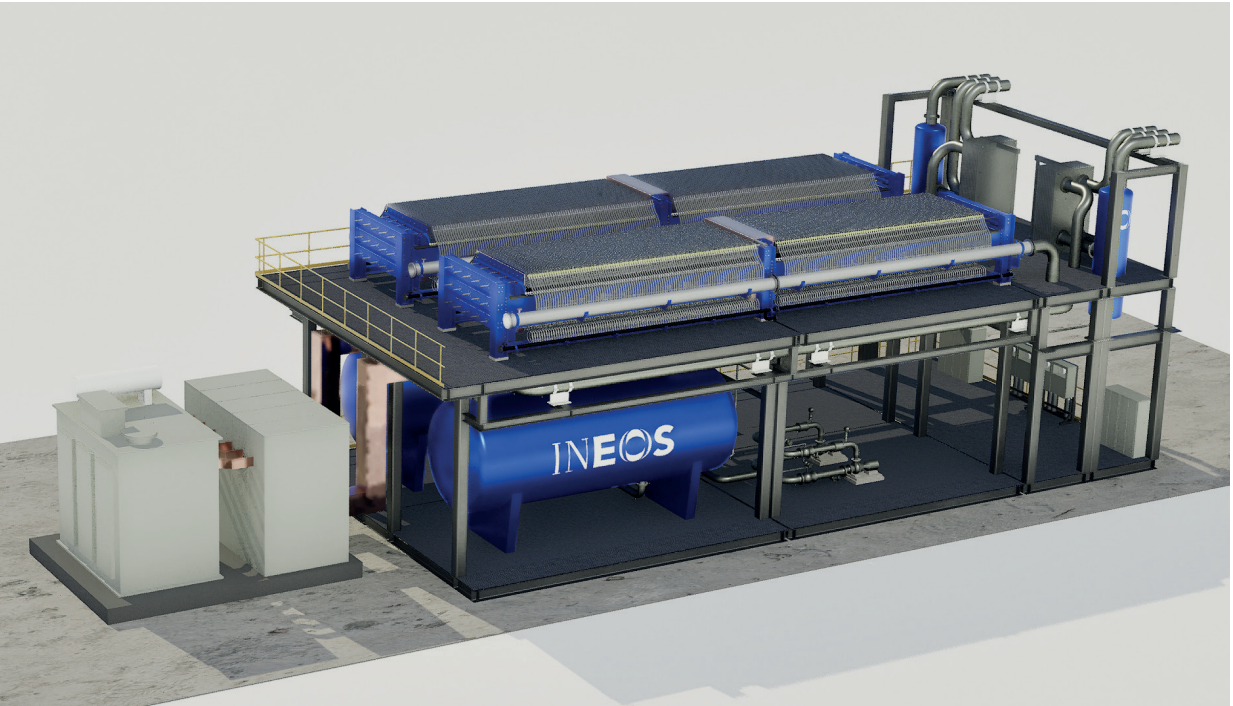
INEOS - A strong & bankable project partner

- Stable and industry leading chemical plant operator
- Europe's largest operator of electrolysis plants
- Existing supply chain and engineering resources for full solution delivery or electrolyser only
- INEOS assured engineering and safety standards
- Track record of delivering industrial scale projects

Trust the experts to help you transition to clean energy

INEOS combine deep engineering expertise with real-world operational insight, gained from designing, building, and running our own large-scale industrial chemical plants across the globe.

- Extensive engineering capabilities through our experienced, in-house multidisciplinary team for end-to-end project life-cycle support
- FEL studies, detailed design, dynamic modelling, construction supervision, and pre-commissioning through to commissioning
- Modular designs to reduce on-site construction time and overall costs, while remaining fully adaptable to align with customer or EPC strategies
- Plant design optimised for constructability, operability and maintainability, supporting long-term plant performance



Hydraeon 25MW Unit

System Capacity H ₂	5,700 Nm ³ /hr
Current density	10kA/m ²
Standard operating range	10% to 100%
H ₂ gas quality (ex-electrolyser, dry basis)	>99.9% purity <0.1%v/v O ₂ in H ₂
Cell area	3.48m ²



Hydraeon 100MW Unit

Who we are and how we help you

We research, develop, and manufacture world-class electrolyzers and electrode coatings that produce hydrogen or chlor-alkali derivatives such as chlorine and caustic soda.

As Europe's largest operator of electrolysis plants, we also understand chemical production from your point of view. With this first-hand experience of the challenges you face each day, our technologies are designed with safety, low-power consumption and ease of maintenance in mind.

INEOS Electrochemical Solutions engineering, manufacturing and headquarters are in the UK, but we operate globally, with over 4 million tonnes of installed capacity, the equivalent of 1.2 GW of hydrogen capacity.

We're operators designing for operators – and we support customers like you for life.

Find out more

For more information about Hydreaon electrolyzers, visit our website at: www.ineos.com/electrochemical

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