

ecoCPTR[®]

Integrated Carbon Capture & Liquefaction

Babcock's LGE business is a world-leading provider of cargo handling and fuel gas supply systems for the liquefied gas markets. Our environmentally-focused technologies improve efficiency and enhance performance; delivering value to customers throughout the vessel's lifetime.

ecoCPTR[®] is a flexible, scalable carbon capture and storage solution that integrates membrane separation with liquefaction for efficient CO₂ management.

Net-Zero Transition:

Accelerates decarbonisation with integrated membrane carbon capture and liquefaction, enabling compliance with global emissions targets.

Flexible Design:

Modular system allows the technology to be tailored depending on fuel type, vessel type, and suitable for both new-builds and retrofits.

Flexible Storage:

Applicable for low pressure or medium pressure storage vessels supports varying operational profiles and infrastructure capabilities.

Scalable:

Modular membrane units designed for flexible installation across a wide range of vessel sizes and emission profiles, adapting easily to available space and layout constraints.

Operability:

Advanced automation enables smooth system performance, continuous monitoring, and seamless integration with onboard systems.

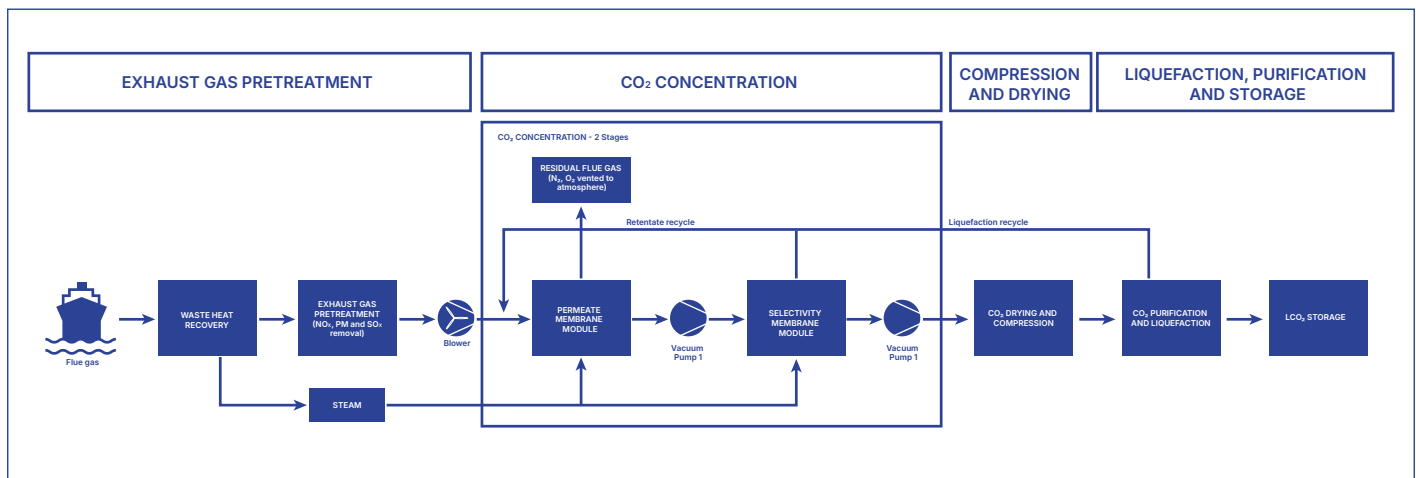
Low Maintenance:

Minimal servicing required, with a 5-year membrane replacement cycle that helps reduce downtime and operational costs.

How it works

ecoCPTR® captures and liquefies CO₂ through a streamlined, multi-stage process designed for efficiency and reliability:

- **Exhaust gas pretreatment** – the flue gas is treated to remove SO_x, NO_x and particulate matter prior to entering the membrane carbon capture stage.
- **Membrane system** – a two-stage membrane system with multiple modules operating in parallel ensure CO₂ capture rates up to 90% with a minimum purity of 95% CO₂ can be achieved.
- **Dehydration** – The captured CO₂ is compressed and dried to ensure optimal conditions for stable and efficient liquefaction.
- **Liquefaction & purification** – The purified CO₂ is cooled and condensed into liquid form, ready for onboard storage or transfer – leveraging Babcock LGE's expertise in liquefaction and cargo handling systems.



Delivering value

ecoCPTR® combines advanced membrane carbon capture technology with Babcock LGE's extensive experience in liquefaction and cargo handling systems to deliver a fully integrated solution. This flexible and scalable system offers efficient CO₂ management that reduces emissions, lowers lifecycle costs, and supports seamless integration into both new-builds and retrofits – delivering real value on the journey to net-zero.

Contact us:

Babcock International Group, Rosyth Business Park, Rosyth, Dunfermline, Fife, KY11 2YD

E: lge.sales@babcockinternational.com

W: www.babcockinternational.com/lge