SULZER

High sea – low emission:
Carbon capture offshore

Carbon dioxide emissions from offshore production facilities (e.g., FPSOs and FLNGs), floating oil and gas production facilities and ships (e.g., LNG carriers, ammonia carriers, cargo and cruise ships/vessels) can be reduced with onboard carbon capture and storage (OCCS). The dominant OCCS technology is post-combustion carbon capture (PCCC) using liquid absorbents like amines. PCCC has been proven industrially in power, steel, cement, refinery and petrochemicals industries. Sulzer's MellapakCC™ product solution is applied in these onshore facilities.
(link to MellapakCC™ flyer)

However, offshore environments pose unique challenges: onboard equipment is subjected to tilt and motion conditions, causing liquid maldistribution in absorption and stripping columns, resulting in efficiency and capacity losses. These "moving columns" require special design considerations to ensure column performance.

Recipe for successful moving columns

Sulzer brings decades of expertise in designing "moving columns" in offshore environments, with **over 200 installations** – many operating successfully for more than 10 years.

The successful marinization of columns includes two main aspects:

1 Assessment of column maldistribution.

Sulzer's proprietary design method quantifies the impact of tilt and motion on liquid and gas maldistribution, which affects column efficiency and capacity. Appropriate margins on process, hydraulic and mechanical designs are consequently applied.

2 Customized mass transfer equipment.

The **MellapakCC™-M** structured packing line has been developed to mitigate the adverse impact caused by tilt and motion. Together with dedicated **MellaTech™** column internals, the integrated solution effectively minimizes maldistribution to ensure robust column performance.

Key benefits compared to conventional structured and random packings solutions:

- Higher capacity hence reduced column weight and footprint.
- Lower pressure drop with similar efficiency.
- Enhanced operational flexibility and robust offshore performance.

**How can we help you?
Contact us today to find your best solution.**

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