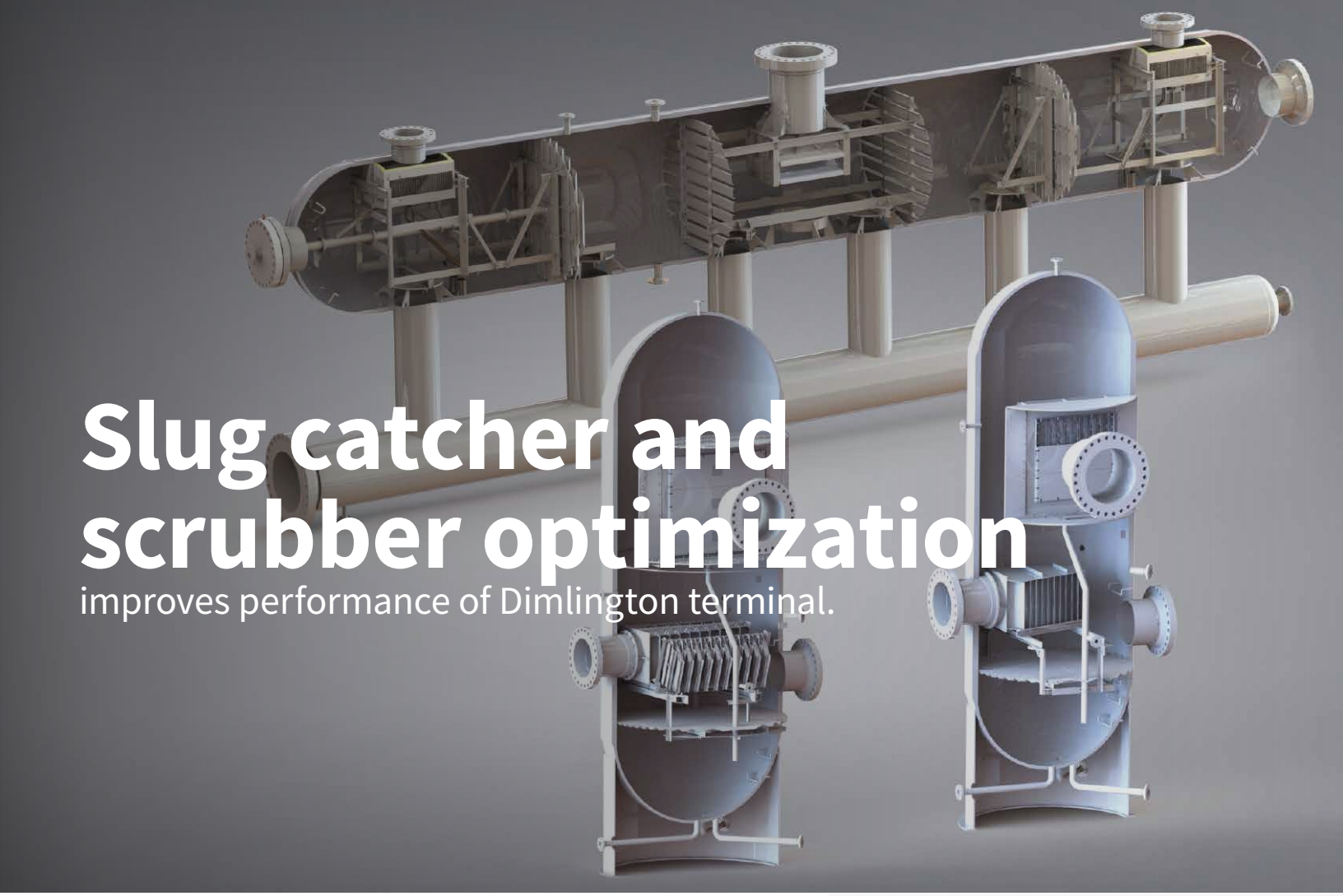

Slug catcher and scrubber optimization

improves performance of Dimlington terminal.

Dimlington, situated on the Yorkshire coast, is one of the main gas terminals in the UK. Our client, Perenco, had a dual objective to improve performance and to extend the life of this critical part of the UK's National Transmission System.

Our developer-level knowledge of fluids separation technologies was employed to understand the active and extreme case challenges whilst forecasting bottlenecks. We utilized our in-house experience and expertise to perform a detailed system-wide process review, with performance of the slug catchers and scrubbers being accurately predicted using our proprietary performance modelling tools.

Based on a deep understanding of the challenges and existing constraints, we optimized the internals arrangement to enhance ability to maintain the required level of gas/liquid separation for optimal onward processing, whilst suppressing the liquid slugs expected during pigging operations. The internal arrangement of the vessels was further verified using our in-house CFD capability across the most arduous conditions.

We delivered comprehensive, optimized and verified upgrades for both slug catchers, plus 1st and 2nd stage scrubbers on both the A and B compression trains. On start-up the performance was monitored through pigging operations. The new arrangement was verified to safely and effectively contain the most challenging slugs of liquid within the slug catcher system.

Project details

Operating system

- Operating pressure = 32 barg

Optimized system

- Operating pressure = 6.5 barg
- Our proprietary internal arrangement in slug catchers and scrubbers
- Achieving export specification

Scope of work

- Desktop process optimisation review and CFD performance verification
- Detailed process and mechanical design by our engineers
- Our installation team conducted the construction of the complex internals upgrade:
- 11,459 kg of internals
- 1,048 individual items
- 2,996 fixings