



P E R E N C O



Project Value

CO₂ Intensity Ratio reduction from 165.6 to 63.3te of CO₂ per million cubic metre in 7 years

Projects

Phased reduction of aviation support in favour of more efficient walk to work options (2015 to date)

The reduction in aviation dependence in favour of high reliability/ efficiency walk to work options.

RADICLE Compression Rationalisation (2017)

Cessation of offshore gas compression associated with Cleeton and Ravenspurn field hubs and consolidation of onshore compression at Dimlington Terminal.

Inde Gas Compression Rationalisation (2018)

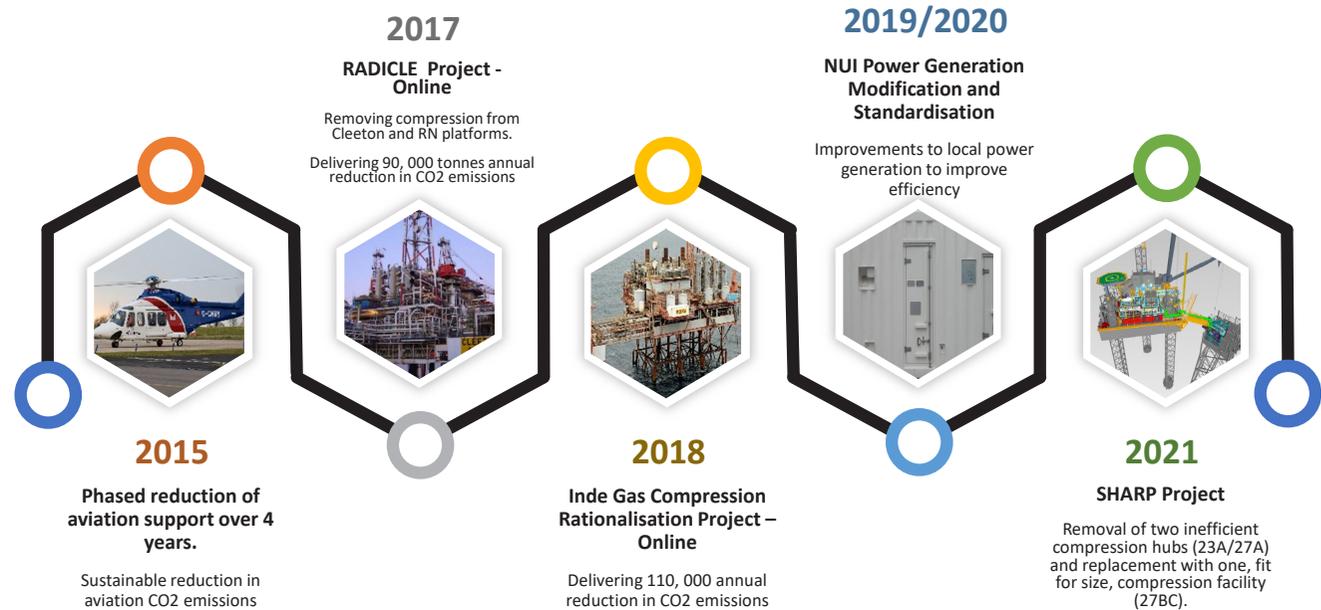
Rationalisation of fuel gas facilities for Inde 23A field compression facilities.

NUI Rationalisation (2019/2020)

Delivering replacement of older, less efficient, stand alone generation in favour of standardised modern, lean units. The combining with platform loading reviews is leading to downsizing of power generation requirements across the fleet.

Decommissioning (2019 to date)

The adoption of new decommissioning techniques and right sized equipment, allowing operations to be executed in the most efficient manner and with emissions reduction benefits.



Good Practice:

Since 2015, Perenco UK (PUK) has progressed an area-wide strategy of CO₂ reduction across our Southern North Sea (SNS) Ageing Assets, the strategy is built upon the following good practice:

- **Compression Facilities Management** – One of the major contributors to high CO₂ emissions, for aged infrastructure, are older, inefficient, over-sized, compression facilities. The ability to tackle this issue head on has been the key to PUK reductions in CO₂ emissions. Over the past five years we have delivered three strategic projects addressing the key goals of improved operational efficiency and emissions reduction.
- **Power Generation** – In common with compression management, aged assets also typically utilise inefficient, dated, local power generation. PUK has undertaken a rolling program of standardising, manufacturing and replacement of its NUI generation fleet, in favour of modern, right-sized units. In combination with platform loading reviews, PUK has been able to significantly reduce its power generation footprint.
- **Aviation Support Reduction** – As improved platform access options (Walk to Work) have become available, PUK has shifted its dependence from aviation to modern marine access vessels. W2W provides far greater efficiencies in respect of time on platforms, substantially decreasing the number of visits required and associated CO₂ emissions.
- **Decommissioning** – The adoption of novel decommissioning techniques (top-sides skidding) and fit for purpose equipment (repurposed jack-ups) has allowed for the use of higher efficiency, appropriately sized, equipment, commensurate with PUK NUI decommissioning operations. This has enabled a significant reduction of rig moves and heavy lift vessel deployment.



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Projects cont.

Southern Hub Area Rationalisation Project (SHARP) (2021)

Project Value

CAPEX £140M
CO₂ Reduction 125,000te/yr

Project Scope

The SNS (South) asset base, of the PUK portfolio, consists of two very large heritage fields, Indefatigable and Leman, with connected feeder fields.

Both fields are served by Nodal compression platforms and fed by a large number of Normally Unattended Installations (NUI).

The current infrastructure is significantly oversized and excessively complex, both in terms of process and plant integrity operations, leading to increased cost and higher carbon emissions to support its future operations.

The SHARP project seeks to reduce process complexity and integrity overburden by introducing a new, fit for purpose, compression jacket, whilst removing from service, aged and inefficient existing compression facilities and decommissioning large areas of plant and infrastructure.

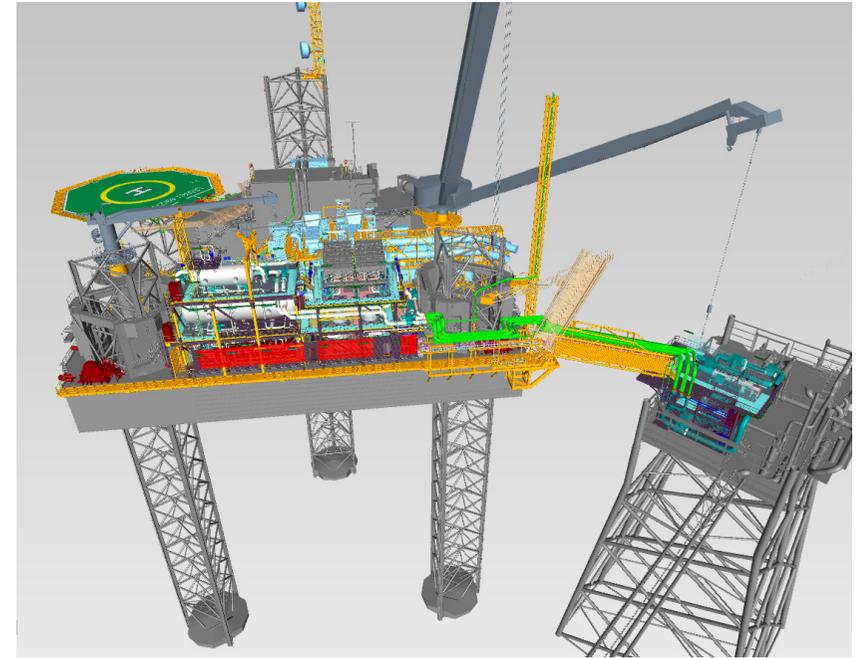
On completion of the project PUK will have achieved significant reductions in CO₂ emissions due to improved compression efficiency, reduced flying commitments, reuse of existing capabilities to introduce a new jacket etc.



Decommission 23A Compression



Decommission 27A Compression



New 27B Compression Jacket

SHARP Learnings

- Recognition that good business and emissions reduction are not mutually exclusive, inherent to the ultimate value of SHARP.
- Recognition that effective interventions, on the largest assets, offers the most significant emission reduction potential, along with additional important, measurable, risk reduction factors.
- Creative, strategic, thinking is essential in delivering a SHARP type solution. Organisations must start from a 'nothing is off the table' position and avoid being constrained by orthodoxy.
- Creative repurposing of strategic resources (decommissioned jack-up) is both inherently a green approach and an opportunity for CAPEX reduction.
- CO₂ reduction benefits are multi-faceted. SHARP benefits included decreased venting, decreased fuel gas usage and reduction in emissions associated with flying and power consumption.
- Regulators are not necessarily an obstacle to radical solutions, provided engagement is early and proposed solutions are technically capable of navigating regulatory hurdles.