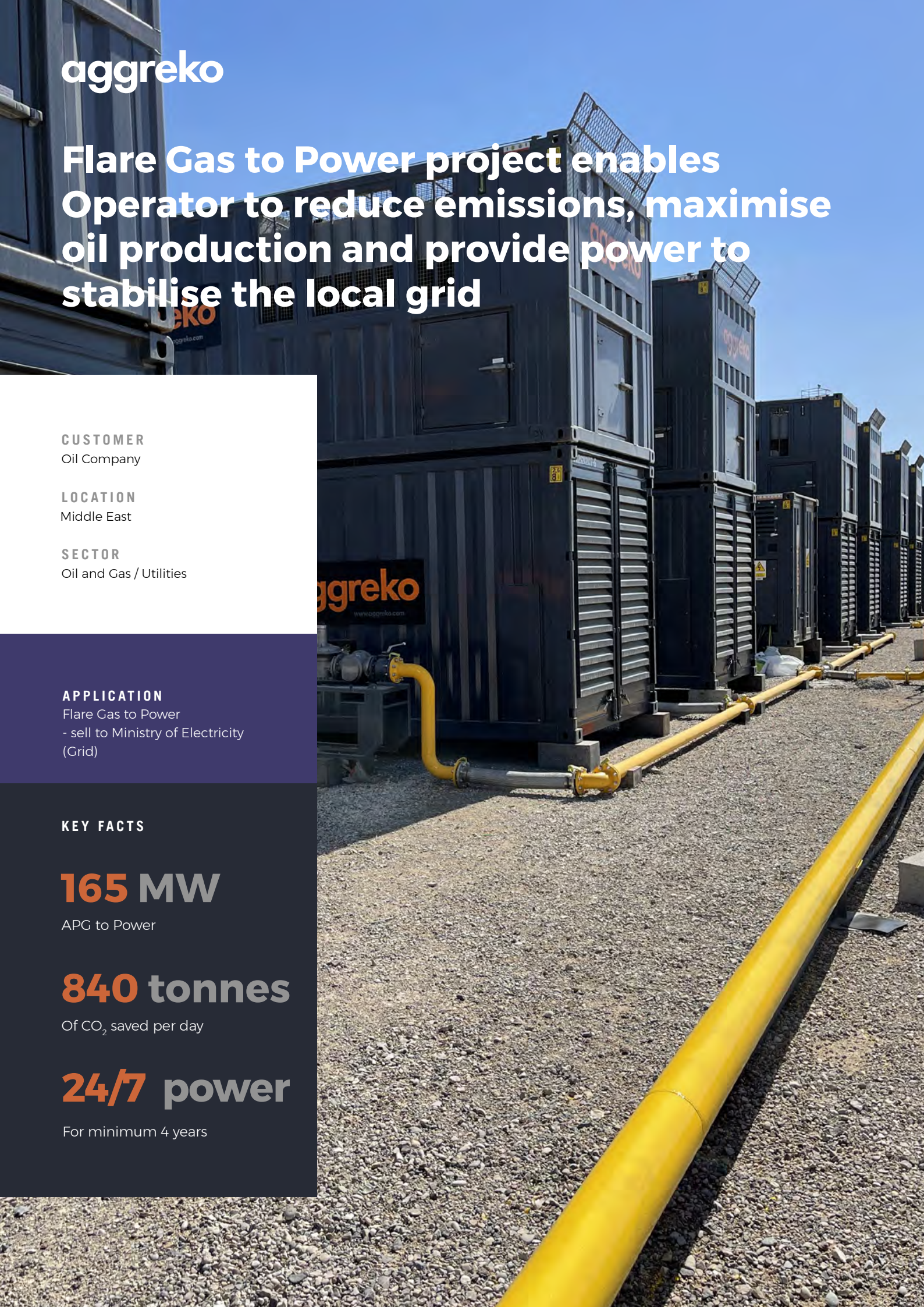
aggreko

Flare Gas to Power project enables Operator to reduce emissions, maximise oil production and provide power to stabilise the local grid



CUSTOMER
Oil Company

LOCATION
Middle East

SECTOR
Oil and Gas / Utilities

APPLICATION
Flare Gas to Power
- sell to Ministry of Electricity (Grid)

KEY FACTS

165 MW
APG to Power

840 tonnes
Of CO_2 saved per day

24/7 power
For minimum 4 years

THE CHALLENGE

Complex project needs specialised engineering partner to design and finance the conversion and distribution of 40 Million SCF a day of Associated Petroleum Gas (APG)

A Middle East Operator's oil production capacity was limited to no more than 30,000 bopd, otherwise gas would be depleted too quickly and the Operator would have to flare above the emissions limits. .

They identified an opportunity to lower their emissions and impact on the environment while simultaneously maximising oil production by utilising the gas for power generation instead.

The local area had a power capacity shortfall, and was heavily dependent on liquid fuels in many places.

Converting this gas for power instead of flaring it would add material power capacity for the local area and north of the country at an extremely competitive rate, which was welcomed by the local government.

The project required significant capital expenditure, including distribution construction and upgrades such as; new 6km pipeline to take the gas produced from the flare stack to where the power plant could be situated, a new 33kV 7km overhead line, and the upgrade of a 33km 132kv overhead line to the nearest town.

Flexibility is essential as the volume and specification of gas is rarely know at project design phase, it can change over the life of the field with the addition of new wells, or the depletion of the field. The customer needed the ability to increase or decrease capacity to match as best as possible the gas volume available and the power demand of the Operator or third party power off taker.

This complex project needed a specialised engineering partner with a proven track record in both technical and commercial expertise, as well as the financial capacity to design, engineer and in invest in the required infrastructure. They likewise needed the ability to manage multiple stakeholders, including the Operator and Local Government as they will also manage the onward sale of power to third party where appropriate.

165-MW-Flare-gas-to-power-project-site

THE SOLUTION

Turn-key project to treat and separate gas to produce power, including the construction and upgrade of power infrastructure to provide to the local grid

To maximise efficiency and ensure project success the customer outsourced this non-core activity project to Aggreko, market leader in complex flare to power projects. We developed and financed the project from concept to mobilisation, commissioning, and operation.

Gas availability was unconfirmed after year two, so our ability to provide a flexible solution that could be scaled up or down, and ultimately demobilise at project conclusion or in stages as gas volumes deplete was ideal.

Working closely with the Operator to determine the gas specification, the gas itself also presented some technical challenges and needed pre-treatment, and Natural Gas Liquid (NGL) stripping. As a rich, wet gas delivered below dew point, it was also above the engine inlet maximum temperature with a low methane number meaning generators would receive a slight derate.

Utilising the 40 Million SCF a day of Associated Petroleum Gas (APG) we are providing; full gas treatment including a NGL production plant, 180 MW of our modular 1.1 MW Gas Generators to form the Aggreko power plant, four 50MVA transformers, and a switchgear, as well as the associated required transmission and distribution infrastructure construction and upgrades.

With around 47-57 Aggreko technicians needed to work on the operation and maintenance of this project, we will recruit and train around 30 locals for this once the project is live.

The mobilisation and commissioning phases were initially expected to take nine months, this has been impacted by the COVID-19 pandemic where we have faced extreme logistical challenges with not only moving equipment, but more importantly our expert people. Despite this, project commissioning is expected in 2021.

THE AGGREKO DIFFERENCE

A proven track record in delivering and financing complex technical projects

THE IMPACT

Flaring eliminated, oil production maximised and reliable cost effective power to stabilise the local grid

This OPEX turn-key solution for the operator and customer has enabled this significant project to be realised.

The operator will eliminate flaring giving them the ability to maximise their oil production.

Meanwhile, the power produced from the flare gas and power infrastructure upgrades will supply 165 MW to the local grid 24/7, for a minimum of 4 years. This will reduce power outages, delivering more stable power network to the local area, and reduce power costs.

This project offsets the need for additional capacity and delivers an estimated saving of 840 tonnes of CO_2 per day.