

Basrah Gas Company

Oil and Gas

The Challenge

Basrah Gas Company (BGC), established in 2013, is a leading Iraqi energy company focused on addressing the country's environmental and energy challenges. Aligned with the Government of Iraq's strategic vision, BGC aims to capture associated gas, reduce flaring, and diversify revenue streams. The company operates 24 compressor stations in remote and rural areas across Southern Iraq, processing sour gas to convert it into cleaner energy.

These operations faced significant challenges, including unreliable power generation, the need to minimize gas flaring and its environmental impact, and operational difficulties with diesel generators, which had high maintenance demands and negative environmental effects. BGC required a sustainable, efficient power solution capable of withstanding extreme temperatures of up to 55°C (131°F) and harsh environmental conditions, including frequent dusty winds.

The Solution

To address its operational challenges, BGC partnered with Technical Solutions to Industry (TSI), Capstone's authorized distributor for Iraq and the UAE, to design and implement a sustainable power solution. Commissioned in August 2024, the project at BGC's Hammar Permanent TEG Dehydration Facility

Power Profile

Customer

Basrah Gas Company (BGC)

Location

Hammar Permanent TEG Dehydration Facility, Basrah, Iraq

Commissioned

August 2024

Fuel

Raw Natural Gas

Technologies

- (2) C600S Microturbines

Capstone Green Energy Partner

Technical Solutions to Industry FZE



The solution provided by Capstone and TSI, has been transformative for our operations. By utilizing flare gas to generate reliable, clean energy, we have significantly reduced emissions and improved efficiency, all while aligning with our sustainability goals.

— Aqeel Hamzah
Project Engineer, Basrah Gas Company





Two Capstone C600S microturbines power Basrah Gas Company's operations, utilizing waste flare gas to generate 1.2MW of clean energy. This efficient solution reduces emissions, eliminates diesel costs, and minimizes maintenance, enhancing operational efficiency and sustainability.

features two Capstone C600 Signature Series microturbines with a fuel gas skid, fire and gas detection systems and a customized high-efficiency filtration system.

Fueled by high-pressure flare gas, which was previously wasted through flaring, the system provides 1.2MWs of reliable power while significantly reducing emissions. The microturbines operate in weatherproof enclosures with high-efficiency dust filters designed to withstand extreme temperatures of up to 55°C (131°F) and frequent dusty winds.

The project was executed in collaboration with Optimal Group Australia, Capstone's authorized distributor for the Oceania region, which designed and manufactured the fuel skid system, and Solas Marine Services in the UAE, which developed the fire suppression and gas detection systems. Covered under Capstone's 6-Year Factory Protection Plan (FPP), the system ensures reliable operations through proactive monitoring, scheduled and unscheduled maintenance, and 24/7 support from Capstone-certified engineers.

The Results

The Capstone system has delivered measurable environmental and economic benefits. By utilizing flare gas as fuel, BGC has achieved a significant reduction in emissions, aligning with Iraq's new environmental goals. The microturbines eliminate the need for lubricants or consumables, further reducing harmful byproducts.

Economically, the system has eliminated diesel fuel costs and associated logistical challenges. The microturbines' innovative design, with a single moving part, requires only 4-6 maintenance hours per year, reducing operational costs and enhancing uptime.

The project exemplifies the successful integration of clean, green energy solutions in challenging environments. BGC has set a benchmark for Iraq's oil and gas industry, achieving its power generation goals while supporting a sustainable future.

Capstone C600S Microturbine



The C600S provides up to 600kW of electric power and contains three air bearing microturbines