ALL IT TAKES IS POSITIVE ENERGY
WHAT IS THE DOLPHIN GAS PROJECT?
Eight years in the making and now more than 10 years in operation, Dolphin Energy’s Dolphin Gas Project is a unique energy initiative that delivers natural gas from Qatar to customers throughout the UAE and Oman.

It is the region’s first and only international gas network that connects three countries in the Gulf region and is one of the largest energy related projects ever undertaken in the Middle East at a cost of US$6.2 billion.

A unique aspect of the Dolphin Gas Project is that the company is active in the three key stages of the value chain – ‘Upstream’ (drilling, extracting and processing), ‘Midstream’ (transport and supply) and ‘Downstream’ (distribution to customers).

Dolphin Energy produces and transports the world’s cleanest fossil fuel – a sweet high grade 97% methane gas from its 30 deep wells drilled in Qatar’s offshore North Field. This gas is then processed onshore at the company’s Gas Processing Plant in Qatar’s Ras Laffan Industrial City. The plant is the largest single build gas plant in the world and comprises the core element in the company’s operations.

Here, valuable by-products are extracted for sale in world markets; the processed methane gas is then transported through the 48 inch, 364 kilometer subsea export pipeline – the longest and largest high pressure subsea pipeline in the region – all the way to Dolphin Energy’s Taweelah Receiving Facilities in Abu Dhabi. From there, gas is heated, metered, monitored and delivered by a comprehensive gas pipeline network to customers throughout the UAE and Oman while some additional volumes are made available through 3rd party interruptible supply.

Today, 2 billion standard cubic feet of natural gas per day (scf/day) is being delivered in a safe, reliable and environmentally friendly manner to customers for power generation and water desalination.

Dolphin Energy Limited is owned 51 percent by Mubadala Investment Company – a wholly owned company by the Government of Abu Dhabi – and 24.5 percent each by Total of France and Occidental Petroleum of the USA.
EASTERN GAS DISTRIBUTION SYSTEM

The Eastern Gas Distribution System, designed and built by ADNOC, was refurbished, upgraded, and is now managed by Dolphin Energy.

AL AIN-FUJAIRAH PIPELINE (AFP)

Dolphin Energy entered the business of gas supply in January 2004, when the company commissioned the natural gas pipeline that connects Al Ain with the Emirate of Fujairah.

RAS LAFFAN

The Gas Processing Plant at Qatar’s Ras Laffan Industrial City, the largest single build plant in the world, is operated by Dolphin Energy.

THE GAS PROCESSING PLANT AT QATAR’S RAS LAFFAN INDUSTRIAL CITY

TAWEELAH

Dolphin Energy gas produced in Qatar arrives at the company’s Taweelah Receiving Facilities in Abu Dhabi, UAE.

FUJAIRAH PIPELINE (TFP)

The TFP is a 48 inch, 244 km gas pipeline that takes natural gas from Taweelah across the country to power and desalination plants in Fujairah.

EXISTING PIPELINES

DOLPHIN CONSTRUCTED PIPELINES

DOLPHIN GAS PROJECT

DOLPHIN ENERGY’S PROJECT MAP

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Everyone in the energy industry also knew that Abu Dhabi was selling substantial quantities of gas to world markets, with tankers arriving weekly to deliver its liquefied natural gas (LNG) bound for Southeast Asia and beyond.

When the full details of the project were duly unveiled, the flow of comment grew. Some 2 billion standard cubic feet of gas per day (scf/day) was to be imported from Qatar in eight years’ time. The main question in the market was: “Who will be the customers for all this gas?”

That 2 billion scf/day of gas from Qatar is now being delivered to customers – and all available supplies have long since been allocated.

Our vision

Dolphin Energy’s Dolphin Gas Project was greeted with astonishment when it was first announced by the Abu Dhabi Government in 1999. Why did the Emirate want, or need, to pay to import gas from another country? It was widely known that Abu Dhabi was rated fourth in world gas reserves at the time.
The vision behind Dolphin Energy – a vision jointly shared between the governments of Abu Dhabi and Qatar – has been unique in its scope, its farsightedness and ultimately in its impact on the people and industries in both countries.

By the end of the last century, the leadership in Abu Dhabi had realized that the emirate’s gas reserves would be more expensive to develop, and would require a longer timeline to meet the needs of the United Arab Emirates, 20 and more years into the future.

Much of Abu Dhabi’s natural gas was indeed being exported – but those exports could not be trimmed back, when long-term 25 year supply contracts were in place.

Growing quantities of available gas were also needed for injection into older crude and condensate reservoirs to maintain reservoir pressure in order to sustain crude and condensate production.

It was also known that several gas fields were sour: these contain a high percentage of hydrogen sulfide, which is highly toxic, dangerous to humans and pipelines alike and thus technically challenging.

The first approaches were duly made to Qatar, with the aim of securing a deal for gas export/import that would make economic and commercial sense to both parties.

After years of visionary planning, drilling, construction and engineering, the Dolphin Gas Project had finally come to fruition. First gas arrived in the UAE in July 2007 and in February 2008, Dolphin Energy achieved its full production and supply rate of 2 billion standard cubic feet of gas per day (scf/day) for the very first time.

Gas arrived in Oman in October 2008 while provision was made to expand throughput to 3.2 billion scf/day, subject to a future agreement between the Qatari and Abu Dhabi governments.

We have combined ambition with multinational capital and expertise to deliver energy security for the Southern Gulf region, safely and reliably – two billion scf/day every day since February 2008.
The impact of the Dolphin Gas Project on the communities, the people and industries in Qatar, the UAE and Oman is telling. In the time it has been operational, the Project has produced trillions of standard cubic feet of gas, and has met 30% of the UAE’s energy requirements every single day – driving economic growth, development and diversification.

Today, a new energy landscape is emerging

IMPACT TO DATE

More emphasis has been placed on developing renewable and nuclear energy resources, to meet the challenges of a growing population, manage the transition to a low carbon future and combat the effects of climate change. However, because it is the most environmental of fossil fuels, demand for natural gas continues to rise and Dolphin Energy’s gas will remain at the heart of the southern Gulf region’s energy mix – acting as a bridge between old and new forms of energy. Dolphin Energy’s responsibilities to the environment and climate change are also reflected in its founding membership of the Abu Dhabi Sustainability Group, support for Qatar’s sustainability commitments and the production of an annual sustainability report, which it has published every year since 2009. This has helped drive the sustainability agendas in both countries. Furthermore, it complements aspects of the company’s community outreach program, which in part, focuses on nationalization, providing opportunities for the next generation of Qataris and Emiratis to embrace their respective country’s development and success in the coming years.
OUR SUCCESS, OUR STORY.
**THE 3 STAGES OF THE VALUE CHAIN**

Dolphin Energy is best described as a vertically integrated energy company – from the production and processing of natural gas from Qatar’s North Field, via transportation through subsea pipeline, to distribution and supply across the UAE and to Oman.

UPSTREAM

Two purpose built, unmanned, production platforms (DOL-1 and DOL-2) extract quantities of ‘wet gas’ lying between 10,000 and 12,000 feet (3,000 – 3,600 meters) underground.

Using 30 wells located in the Khuff Zone in Qatar’s North Field, the ‘wet gas’ produced is piped more than 80 kilometers to shore at Qatar’s Ras Laffan, arriving at Dolphin Energy’s Gas Processing Plant.

Here, valuable commercial by-products (condensate, LPGs, ethane and sulfur) are stripped out, with the result that ‘lean and sweet’ processed natural gas is then ready for transport by subsea export pipeline to the UAE.

Meanwhile, the gas liquids and sulfur by-products are delivered from the Gas Processing Plant to various storage facilities, prior to export on a regular basis from exclusive loading berths.

<table>
<thead>
<tr>
<th>Natural Gas By-Products</th>
<th>Product Description</th>
<th>Production/Day</th>
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<tbody>
<tr>
<td>Low Sulfur Condensate</td>
<td>An ultra light form of oil used for feedstock in splitters, petrochemical industries or for blending with crude oil.</td>
<td>87,000 – 110,000 barrels</td>
</tr>
<tr>
<td>Propane</td>
<td>Both are used as fuels for industrial, domestic, automotive as well as petrochemicals production worldwide. Butane also has specialized uses in gasoline blending.</td>
<td>2,100 – 2,800 tons, 1,300 – 1,800 tons</td>
</tr>
<tr>
<td>Butane</td>
<td>Removed from natural gas at an early stage in processing, to comply with international health, safety, and environmental standards.</td>
<td>500 – 1,000 tons</td>
</tr>
<tr>
<td>Sulfur</td>
<td>Extracted at an early stage in gas processing and used as feedstock for the ethane cracker within Qatar.</td>
<td>3,500 – 4,000 tons</td>
</tr>
</tbody>
</table>
The key midstream element is Dolphin Energy’s 364 kilometer, subsea export pipeline that links Qatar to the UAE. Measuring 48 inches in diameter, the pipeline is designed to transport up to 3.2 billion standard cubic feet of natural gas per day.

Dolphin Energy’s receiving and monitoring facilities, located at Taweelah, lies at the heart of the Project’s downstream operations. Gas from Qatar arrives onshore before distribution to customers across the UAE and Oman.

Delivery of natural gas is made possible through the use of an extensive gas distribution network – the Eastern Gas Distribution System (EGDS) – which Dolphin Energy upgraded and now manages to ensure reliable, safe and efficient volumes of natural gas are delivered.

Other crucial elements of Dolphin Energy’s presence downstream are two additional pipelines – the 24 inch, 182 kilometer Al Ain to Fujairah Pipeline and the 48 inch, 244 kilometer Taweelah to Fujairah Pipeline.
From the beginning, its founders conceived Dolphin Energy Limited as a force for international energy cooperation that would unite the vision and resources of the region with multinational capital and expertise.

At the heart of the Project’s ambition lies the spirit of partnership that has enabled the national and international stakeholders in Dolphin Energy to assemble the technologies, skills and multidisciplinary teams essential to the success of the Project.

By supplying the UAE and Oman with clean natural gas from Qatar, the Dolphin Gas Project is a model for regional energy cooperation.
The Government of Qatar is the owner of the natural resource which enables Dolphin Energy to supply 2 billion standard cubic feet of natural gas per day (scf/day), every day, to the UAE and Oman for a period of 25 years.

From the early stages of the Project, close cooperation between Dolphin Energy and Qatar Petroleum (QP) led to joint research and planning, and thereafter to the signing of the Field Development Plan in December 2003 – the final investment decision for the Dolphin Gas Project that confirmed all its investment parameters.

Qatar’s role is instrumental.
Today, Dolphin Energy is consistently profitable, with delivery of financial results, ahead of target.

It reached profitability within nine years of completion of the overall investment covering platforms, sealines, processing plant, export pipeline, receiving facilities, and the distribution and supply network.

SHAREHOLDERS

Dolphin Energy’s shareholders – Mubadala Investment Company, Total of France and Occidental Petroleum of the USA – have brought their own strengths to the Project, building and undertaking planning and execution to help create a unique and prestigious energy venture.

Each shareholder has a long, valued association beginning with Mubadala Investment Company which launched the Project as UAE Offsets in 1999. During 2000, Total of France was invited to become a founding shareholder and Occidental Petroleum of the USA became the company’s second international partner in 2002.

<table>
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<th>Shareholding</th>
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<tbody>
<tr>
<td>Mubadala</td>
<td>51%</td>
</tr>
<tr>
<td>Total</td>
<td>24.5%</td>
</tr>
<tr>
<td>Occidental</td>
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Each shareholder has brought their own strengths to the Project, building and undertaking planning and execution to help create a unique and prestigious energy venture.
The initial engineering mandate given to Dolphin Energy was to construct a 48 inch, 370 kilometer plus gas pipeline between Qatar and the UAE – and then to produce, process and transport through this pipeline up to 2 billion standard cubic feet (scf) of natural gas (approximately equivalent to 333,000 barrels of oil) per day.
And as the Project has evolved, further milestones have been passed that reflect Dolphin Energy’s unrelenting appetite to succeed: from delivering the maximum contracted amount of 730 billion scf per year, every year since 2008; undergoing annual shutdown programs; delivering enhancements to the compression facilities to increase availability and reliability of natural gas; to drilling new wells to maintain the production plateau and reservoir pressure.

The subsequent task was to establish a gas receiving and distribution system that would deliver the necessary quantities of gas, at the right pressure, to all customers in the UAE and Oman.
Dolphin Energy’s health, safety and environment (HSE) goals are simply stated: No accidents, no harm to people and no damage to the social and natural environment.
We always focus on the health and safety of our people, our environment and our assets. Our actions are constantly monitored and reviewed and we are committed to HSE excellence at all times.

The company endeavours to embody this in everything it does and measures performance and results to constantly improve in line with the best in the world.

Ensuring the highest levels of health and safety of its employees, the communities in which it operates and all of its assets is the single most important objective. Without this commitment, Dolphin Energy would not, could not operate.

Health and safety management systems, strategies and plans follow best practice and in some cases provide benchmarks for others to follow. The company’s actions and conduct – and those of its contractors and suppliers – are monitored and reviewed regularly.

Dolphin Energy’s commitment to HSE is integral to its business objectives. Striving for excellence is a primary management objective and the responsibility of every employee.

At the heart of this lies the firm belief that collaboration can only deliver the best results. It underpins Dolphin Energy’s conduct with all its stakeholders – from government ministries, communities, shareholders and strategic partners, to customers, contractors and employees alike.
MEETING THE REGION’S NEEDS
Our growth and success is linked directly with our customers and their evolving requirements. A strength has been our flexibility and our ability to adjust to their needs.
Between 2003-2005, Dolphin Energy signed three significant long term gas sales agreements with Emirates Water and Electricity Company (EWEC), the Dubai Supply Authority (DUSUP) and Oman Oil Company Exploration and Production (OOCEP).
Dolphin Energy’s Gas Processing Plant at Ras Laffan Industrial City, Qatar
The difference between this average total and the maximum throughput of 2 billion scf/day allows Dolphin Energy to offer flexibility for peak requirements of customers.
INTERRUPTIBLE AGREEMENTS

Short term Interruptible gas sales agreements are also currently in place with the Federal Electricity & Water Authority (FEWA), Emarat and Emirates Global Aluminium as well as EWEC, SEWA, and RAK GAS.
The Taweelah to Fujairah pipeline, constructed to meet the growing needs of its largest customer EWEC, was commissioned in 2010. The 48 inch, 244 kilometer pipeline stretches across the desert and mountains of the UAE supplying up to 1.6 billion scf/day.

The Eastern Gas Distribution System (EGDS) is the main delivery artery for Dolphin Energy’s gas across the UAE. The company manages the network – having reached an agreement with ADNOC to access its gas distribution network. Following some refurbishment and upgrades to the infrastructure, Dolphin Energy took over management of the system in 2008. Three main pipelines comprise the EGDS which ensures gas supplies are delivered efficiently and safely. To complement the EGDS, Dolphin Energy constructed two other major pipelines to enhance the gas grid.

The construction and commissioning of the 24 inch, 182 kilometer, Al Ain to Fujairah pipeline is significant because it meant gas began to flow from one GCC nation to another for the very first time. This pipeline was the first project of Dolphin Energy to come on stream and between 2004-2007, up to 135 million scf/day was being supplied by Oman to Dolphin Energy for power and desalination plants in Fujairah, supporting thousands of residents, hundreds of farmers and scores of inland communities. Once Dolphin Energy began receiving gas from Qatar, there was a reversal in roles and in October 2008, 200 million scf/day was sent to Oman to assist the Sultanate’s own industrialization plans in the country’s North West.

The Tawelalh to Fujairah pipeline, constructed to meet the growing needs of its largest customer EWEC, was commissioned in 2010. The 48 inch, 244 kilometer pipeline stretches across the desert and mountains of the UAE supplying up to 1.6 billion scf/day.
52 KM 149 KM 112 KM

Taweelah to Maqta

Maqta to Jebel Ali

Maqta to Al Ain
Featuring unique diverless subsea technology, Dolphin Energy’s state of the art Advanced Subsea Intervention Support & Technology (ASSIST) pipeline repair system can restore pipelines to their original condition in just months, rather than years.

The ASSIST system has been designed to minimize disruption from any accidental damage sustained to the company’s offshore pipelines – the 36 inch twin sealines and the 48 inch subsea export pipeline. To ensure this, Dolphin Energy collaborated with international specialized companies to develop the latest proven designs for subsea repair.
This is first-of-its-kind technology for the region. ASSIST offers economic and strategic value by protecting asset integrity, driving technical innovation and ensuring skills and competencies continue to develop.

This includes large bespoke subsea repair equipment to handle the pipeline on the seabed and carry out several repair welds in a hyperbaric condition, allowing the pipeline to be welded back to its original condition.

While the ASSIST system covers Dolphin Energy’s pipeline system, it can be utilized on other pipelines ranging from 8-48 inches. Furthermore, the equipment can be used for a wide range of subsea works carried out by contractors and other pipeline operators, such as pipeline repair, subsea tie-ins and tie-backs, hot tap and major inspections. Most equipment is designed to work remotely without the use of divers, helping maximize safety and minimize cost.

To support the ASSIST system, Dolphin Energy has entered into a strategic agreement with KIZAD Industrial Zone and Khalifa Port and constructed a custom made 45,000m² Marine Base at KIZAD’s facilities that will serve as a hub for the subsea repair equipment and offshore mobilization.
TO THE FUTURE
Dolphin Energy is committed to hiring and investing in the best people available and to offering them the necessary training and support they require for long term career development.
The company is an employer of choice, as a result of programs that focus on national recruitment and retention as well as by offering equal opportunities for all.

As a result, Dolphin Energy enjoys high employee satisfaction, achieved through human resource policies that combine the best practices from Qatar and the UAE.
Dolphin Energy’s sustainability story has been a challenging journey. Starting as a commitment to comply with legal and regulatory requirements, the company enhanced its position as it engaged in themes such as corporate social responsibility and stakeholder dialogue.
Our corporate and sustainability objectives are one and the same. We manage our business in a way that will lead to long term growth while managing the needs of present and future generations.

Sustainability reporting and responsibility has been fully integrated into Dolphin Energy’s corporate strategy and the company’s Sustainability Management Policy. This formalized the company’s Sustainability Management Program, providing clear and specific guidelines for developing, maintaining and exercising sustainability management within Dolphin Energy.

The company’s sustainability governance structure assigns responsibility for planning and review to all tiers of management. Goals and KPIs are continually added to the business plan and monitored to ensure that sustainability is managed on a day-to-day basis, by everyone within the organization.

Sustainability performance against year-to-year goals is published in an annual sustainability report which is made available to all. The report, which adopts an effective and unique framework to communicate company performance on sustainability issues that are material to its internal and external stakeholders, illustrates Dolphin Energy’s commitment to drive and deliver positive social, environmental and economic impacts.
In the oil and gas industry, the digital era is bringing unprecedented opportunities to unlock higher efficiencies, while providing increased value to all stakeholders.
Dolphin Energy’s digital transformation program, strategy and roadmap was developed in 2018. Since then, more than 20 separate projects have been launched to embrace change and deliver tangible business outcomes across three pillars - operational safety and security, asset reliability and efficiency and productivity across the supply chain.

Many more projects are planned and by adopting new transformative technologies, the company will change the way it works. Put simply, the future is digital.