

Kurdistan Gas Project

Two Decades of Progress
A Decade of Opportunity

Impact Assessment Report 2026

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Executive Summary

Pearl Petroleum commissioned PwC to assess the impact of the Kurdistan Gas Project.

In 2007, Dana Gas and Crescent Petroleum signed an agreement with the Kurdistan Regional Government (KRG) granting exclusive rights to appraise, develop, produce, market, and sell petroleum products, including natural gas, domestically and for export, from the Khor Mor and Chemchemal fields in the Kurdistan Region of Iraq (KRI), marking the launch of the Kurdistan Gas Project (the "Project").

The aim was to supply cleaner fuel for more efficient, affordable, and reliable power generation. The Project would lay the foundation for a modern energy system and become a cornerstone in the development of the KRI's energy sector and broader economy.

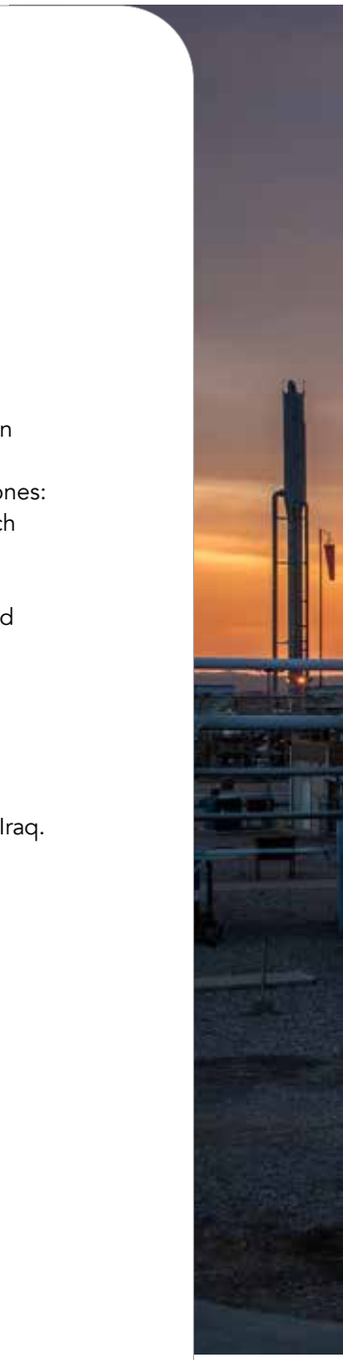
In 2009, Pearl Petroleum ("Pearl") was established as a consortium comprising Dana Gas and Crescent Petroleum as joint operator, each with a 35% share, joined by OMV, MOL, and RWE, each with a 10% share.

For nearly two decades, Pearl has supplied reliable, cleaner burning natural gas to power plants across the KRI, supporting the region's rapid growth. Today, more than 6.4 million people benefit from improved public services and modern infrastructure powered by the Project, including businesses, industrial facilities, schools, and community centres.

The Project contributes to the KRI in three principal ways: economy, society, and the environment.

Pearl commissioned PwC to assess the impact of the Kurdistan Gas Project since inception and forecast its impact over the coming decade. This review coincided with two major milestones: the commissioning of the KM250 plant in October 2025, which increased production capacity at Khor Mor by 50% to 750 million standard cubic feet per day (MMscfd), as well as the commencement of activities to appraise the Chemchemal field and initiate production from the field. Together, these plans underscore Pearl's commitment to expanding capacity and meeting growing energy demand in Iraq.

This report demonstrates how sustained investment, effective public–private partnership, and long-term strategic vision have generated substantial and enduring benefits for the people of Iraq.





The Khor Mor Plant at sunset

The Kurdistan Gas Project's primary areas of contribution



PwC assessed the Project's contribution to the KRI in three key areas: economy, society, and the environment, looking both historically and into the future, locally and globally. The study reviewed the Project's contribution from 2008 to 2025 and estimated its expected contribution over the next decade in light of the significant investments planned for field development.

How the Kurdistan Gas Project contributes to the KRI

Our contribution to the KRI economy

Capital investment

Operations

Energy provision

Energy system cost savings from substitution of diesel with gas

Our impact on the KRI society

Creation of employment

Contribution to government revenues

Investment in community initiatives

Our stewardship of the environment

Improved operational efficiency

Avoidance of greenhouse gas emissions by displacing diesel and other liquid fuels

Enhanced air quality and positive benefits on health

Looking back at two decades of progress



Following the signing of agreements with the KRG, production at Khor Mor commenced in 2008, just 15 months after construction began. Rapid construction of an early production facility and dedicated 180 km pipeline network delivered natural gas to power plants in Erbil and Chemchemal, transforming the region's energy landscape.

Since 2007, Pearl Petroleum has invested more than US$3.9 billion to expand processing capacity and associated infrastructure, becoming the largest private investor in Iraq's natural gas sector. Today, more than 80% of production consists of natural gas, in addition to LPG and natural gas liquids.

In 2019, Pearl launched a major expansion project to add a new gas processing train, the KM250 Project, to meet rising domestic electricity demand. The US$1.1 billion development was supported by financing from the U.S. International Development Finance Corporation (DFC), UAE-based bank facilities, and a US$350 million senior secured bond issued in 2024 and listed on the Nordic Alternative Bond Market, making it one of the largest private-sector infrastructure developments undertaken in Iraq in recent years.

Commissioned in October 2025, the KM250 plant increased production from 500 MMscfd to 750 MMscfd, an increase of 50%. The expansion strengthens power generation across the KRI, supports industrial growth, underpins the KRG's Runaki initiative to deliver 24-hour electricity, and improves energy supply to other regions of Iraq.

Pearl also continues to advance the appraisal and development of both the Khor Mor and Chemchemal fields, increasing its long-term impact and underscoring its commitment to the region.

Over 18 years of operation (2008–2025), Pearl has delivered cumulative production in excess of 500 million barrels of oil equivalent (BOE) in gas and liquids to power plants, industries, and households. Gas from Pearl's operations fuels more than 80% of electricity generation in the KRI, playing a catalytic role in building the region's modern energy infrastructure.

The Project's economic contribution extends well beyond capital investment and production activity. PwC estimates that between 2008 and 2025, the Kurdistan Gas Project enabled approximately US$240 billion in cumulative KRI GDP contribution by delivering reliable and affordable electricity, highlighting its central role in economic growth and regional development.

Beyond economic impact, the transition to natural gas has delivered significant fiscal and environmental benefits. By displacing higher-cost, higher-emission fuels, the Project enabled an estimated US$38.3 billion in fuel cost savings for the KRG and avoided approximately 63.1 million tonnes of CO_2 equivalent (tCO_2e) emissions.

Another pillar of the Project's success has been the generation of substantial employment with local participation in the KRI, including a notable increase in employment of women in technical and oversight roles at the plant. Since 2008, the Project has supported approximately 38,100 temporary job years during the construction phases and sustained 47,000 operational job years cumulatively, through direct, indirect, and induced employment.

Two decades on, the Kurdistan Gas Project stands as a defining example of sustained investment, effective partnership, and long-term strategic vision, delivering enduring economic, fiscal, and environmental value to the KRI.

Impact since inception: 2008–2025

Total Pearl investment		**US$3.9 bn**
GDP impact	Enabled GDP contribution	**~US$240 bn**
Employment impact	Temporary during construction phase	**38,100 job years**
	Permanent during operational phase	**47,000 job years**
Localisation	Local staff employment	**~80%**
	Local procurement	**US$900 m**
Savings generated due to fuel substitution	Fuel cost savings to the KRG	**US$38.3 bn**
	Greenhouse gas emissions savings	**63.1m tCO_2e**

Source: Pearl Petroleum, PwC analysis

Looking ahead to the next decade



In the coming decade, the impact of the Kurdistan Gas Project is set to expand significantly, driven by accelerated field development and substantial new investment. The next phase of development envisions more than doubling total gas production from the current capacity of 750 MMscfd to 1,650 MMscfd.

The expansion also anticipates crude oil production of 100,000 barrels per day (bpd), condensate output of 47,000 bpd, and LPG production of approximately 5,500 tonnes per day (tpd). Approximately US$10.2 billion is expected to be invested between 2026 and 2035 for major appraisal activities in both the Khor Mor and Chemchemal fields, as well as the development of additional gas and oil processing facilities.

PwC estimates that the Kurdistan Gas Project would enable approximately US$420 billion in cumulative GDP contribution over the period 2026 to 2035.

The Project will also generate substantial employment in the coming decade. Construction activities are projected to support approximately 53,000 temporary job years, while operations are expected to sustain a cumulative 193,000 job years through direct, indirect, and induced employment.

Central to the Project's long-term strategy is local employment, with over 90% of roles projected to be filled by local talent. The Project is also expected to contribute an estimated US$4.1 billion in local procurement, reinforcing domestic supply chains and private sector development.

Expanded fuel substitution will continue to deliver immense fiscal and environmental benefits. By displacing higher-cost, higher-emission fuels such as diesel, the Project is expected to generate approximately US$59.9 billion in fuel cost savings and avoid an estimated 128.9 million tCO_2e emissions over the next decade.

Collectively, these outcomes will further cement the Kurdistan Gas Project's role as a cornerstone of economic growth, fiscal resilience, job creation, and environmental progress, positioning the KRI for a decade of sustained development and opportunity.

Estimated future impact: 2026–2035

Total Pearl investment		**US$10.2 bn**
GDP impact	Enabled GDP contribution	**~US$420 bn**
Employment impact	Temporary during construction phase	**53,000 job years**
	Permanent during operational phase	**193,000 job years**
Localisation	Local staff employment	**~90%**
	Local procurement	**US$4.1 bn**
Savings generated due to fuel substitution	Fuel cost savings to the KRG	**US$59.9 bn**
	Greenhouse gas emissions savings	**128.9m tCO_2e**

Source: Pearl Petroleum, PwC analysis



ABOUT THIS REPORT



Residents of Sulaymaniyah enjoy the evening lights on an autumn night

About This Report

Pearl Petroleum commissioned PwC to assess the impact of the Kurdistan Gas Project over nearly two decades since its inception in 2008, and to forecast its expected impact over the coming decade.



This assessment builds on a previous study conducted in 2018, which evaluated the Project's overall economic, social, and environmental impact on the Kurdistan Region of Iraq after its first 10 years of operation.

Nearly a decade later, PwC has updated its analysis to reflect two major milestones: the commissioning of the KM250 plant in October 2025, which increased production from the Khor Mor field by 50% to 750 MMscfd, and the commencement of activities to appraise and develop the Chemchemal field.

PwC's assessment adopts both a retrospective and forward-looking perspective. It evaluates the Project's contribution during its first 18 years of operations (2008–2025) and estimates its potential impact over the next decade (2026–2035). The analysis examines the Project's impact across three key dimensions – economic, social, and environmental – considering Pearl's capital investments, direct operations, supplier activities, and the downstream impact of natural gas consumption across the region.

The assessment retains the core dimensions of PwC's earlier study while introducing expanded valuation methodologies to further quantify the Project's impact in the KRI. It also incorporates how the Project's Corporate Social Responsibility (CSR) initiatives and social performance investments have supported local communities.

Beyond measuring the monetary impact of Pearl's activities, PwC also evaluated the Project's contributions in the context of the United Nations Sustainable Development Goals (SDGs), assessing how it supports the KRI's development priorities aligned with these goals, in addition to assessing the overall avoided Social Cost of Carbon.

Future Expansion Scenario

Gas capacity	Crude oil	LPG	Condensate
1,650 MMscfd	100,000 bpd	5,500 tpd	47,000 bpd

Overarching view of the study

Pearl Petroleum activities

INVESTMENT | OPERATIONS | SUPPLY CHAIN | PRODUCT | CSR

Contribution to the KRI economy

Impact on the KRI society

Stewardship of the environment



Assessed historically over the period 2008–2025

…and anticipated future impacts from 2026–2035



ABOUT THE KURDISTAN REGION OF IRAQ



Central Erbil: The Kurdistan Gas Project plays a central role in strengthening energy security and enabling more reliable power for households and industry

About the Kurdistan Region of Iraq

The KRI is a constitutionally recognised autonomous region governed by the Kurdistan Regional Government (KRG) within the Republic of Iraq. It comprises four governorates - Dohuk, Erbil, Halabja, and Sulaymaniyah - which are home to approximately 6.4 million people.

For more than two decades, the KRI economy has relied heavily on oil revenues and the public sector. Energy, services, and public administration account for roughly 90% of GDP, while agriculture contributes about 4%, and construction and manufacturing approximately 2% each. This narrow economic base has left the region highly exposed to external shocks in energy markets.

Economic pressures and a demanding social backdrop
Between 2014 and 2020, volatility in global oil prices, compounded by the COVID-19 pandemic, placed severe fiscal pressure on the region. Salary payments were delayed, public investment slowed, and broader economic activity weakened. Although higher hydrocarbon prices after 2021 and increased domestic gas production helped stabilise the fiscal outlook, a new challenge emerged in 2023 when Turkey shut down the Ceyhan pipeline following an International Chamber of Commerce ruling. The closure sharply reduced KRG oil exports, cutting billions in revenues. Oil production fell to approximately 250,000–270,000 barrels per day (bpd), well below pre-shutdown levels of around 400,000 bpd, while international oil companies reduced investment and drilling activity.

These economic pressures have unfolded against a demanding social backdrop. The KRI has long hosted large numbers of internally displaced Iraqis and Syrian refugees, peaking at around 900,000 people. Despite the strain on public services and infrastructure, the region has largely maintained social stability.

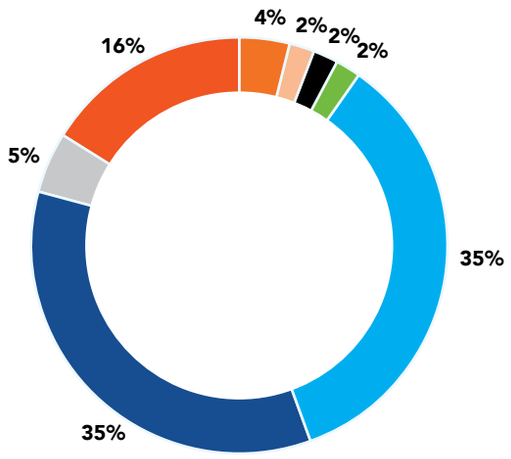
Pathways to diversification
In response, the KRG has renewed efforts to diversify the economy. The Vision 2030 reform agenda prioritises stronger public financial management, private sector development, and more sustainable resource use. The government aims to improve the investment climate, promote entrepreneurship, and expand the role of small- and medium-sized enterprises (SMEs) to drive non-oil growth. A complementary investment strategy identifies priority sectors and outlines regulatory reforms to attract domestic and foreign capital, positioning the region to compete more effectively in regional and global markets.

The Project plays a central role in enabling this transition by strengthening energy security and enabling more reliable power for households and industry. In the mid-2000s, residents often received as little as two hours of grid electricity per day and relied heavily on private diesel generators. Investment in domestic gas production marked a turning point. Between 2018 and 2024, daily electricity access increased to at least 12 hours. By 2025, more than 4.5 million people were receiving 24-hour public electricity under major gas investments and reforms known as Project Runaki.

Achieving round-the-clock electricity for all by the end of 2026 remains a key priority, not only to improve living standards, but to support sustained and diversified economic growth beyond oil and gas.

Distribution of non-oil GDP

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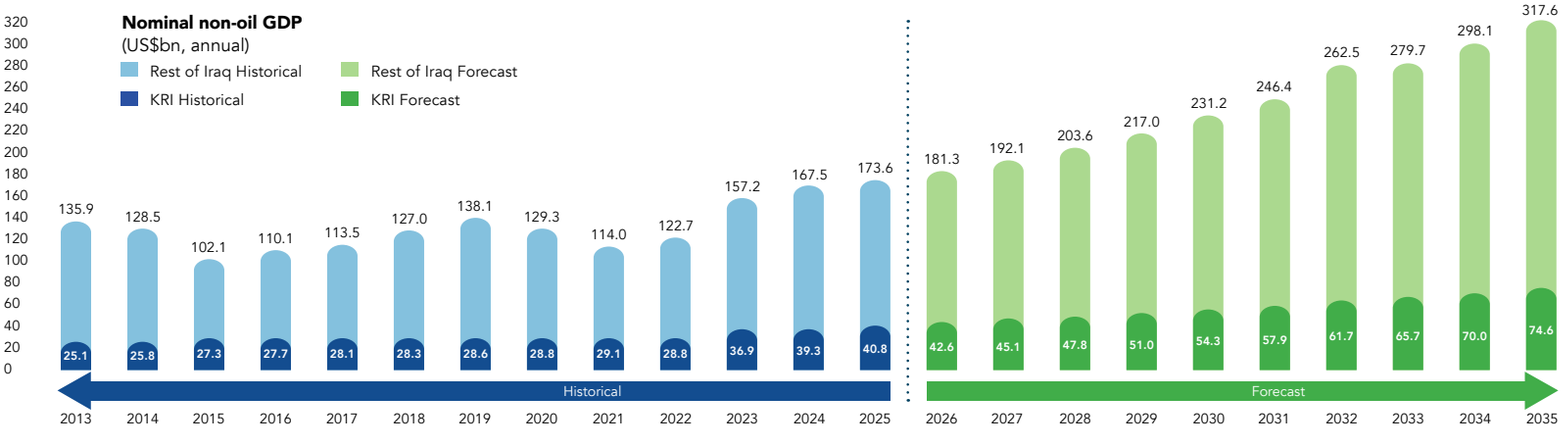


- Agriculture forestry and Fishing
- Manufacturing
- Electricity and Water
- Construction
- Transport, Communication, and Storage
- Wholesale, Retail trade, Hotels, and others
- Finance, Insurance, Real estate, and Business services
- Social and Personal services

Source: Kurdistan Regional Statistics Office, PwC analysis
(Numbers may not sum to 100% due to rounding)



KRI's nominal non-oil GDP growth contributes to the broader expansion of Iraq's non-oil economy, with both projected to rise through 2035



Source: Kurdistan Regional Statistics Office, World Bank, International Monetary Fund, Iraq's Central Statistical Organization, PwC analysis

About the Kurdistan Region of Iraq

KRI nominal non-oil GDP in 2025

~US$40.8 bn

(24% of Iraq's total nominal non-oil GDP)

Source: PwC analysis

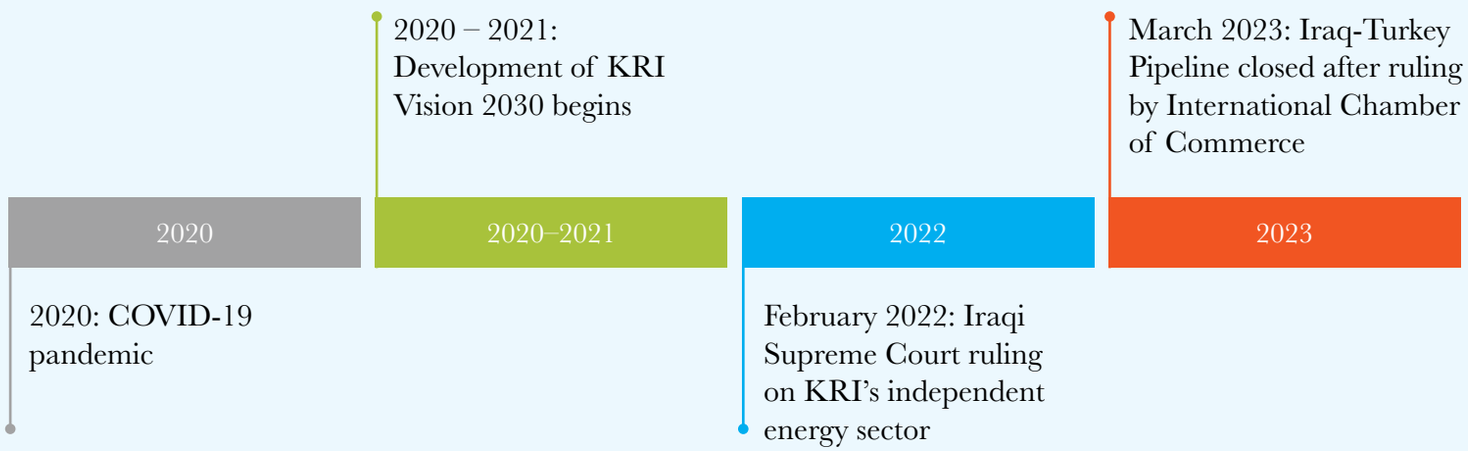
KRI nominal non-oil GDP in 2035

~US$74.6 bn

(24% of Iraq's total nominal non-oil GDP)

Source: PwC analysis

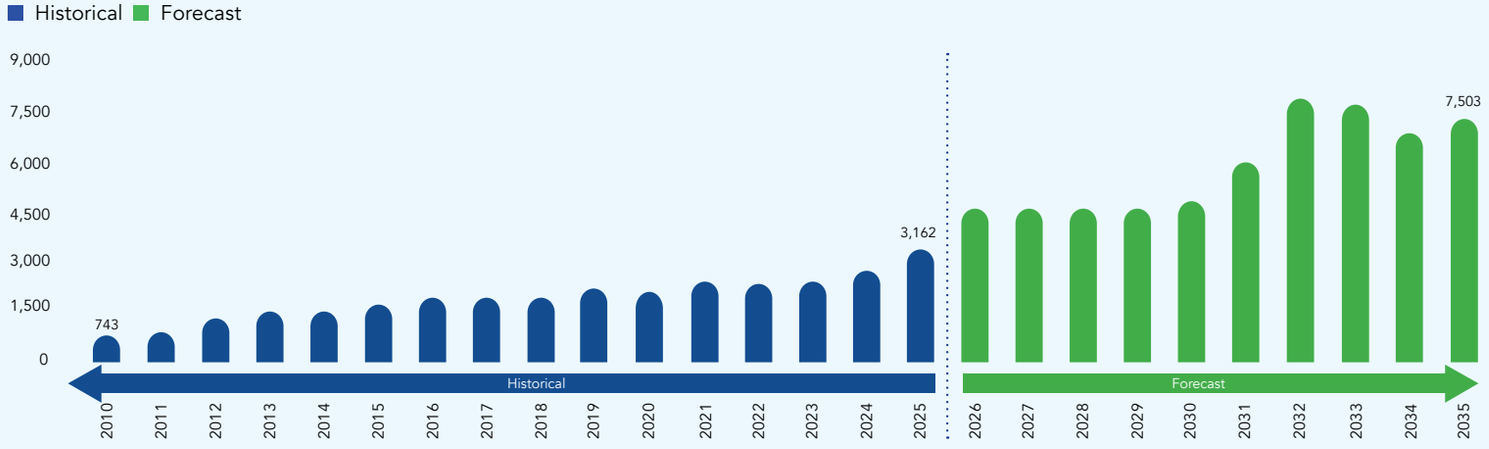
Timeline of recent notable events





Pearl Gas Powered Electricity Generation

(MW, monthly average)



Source: Pearl Petroleum, PwC analysis

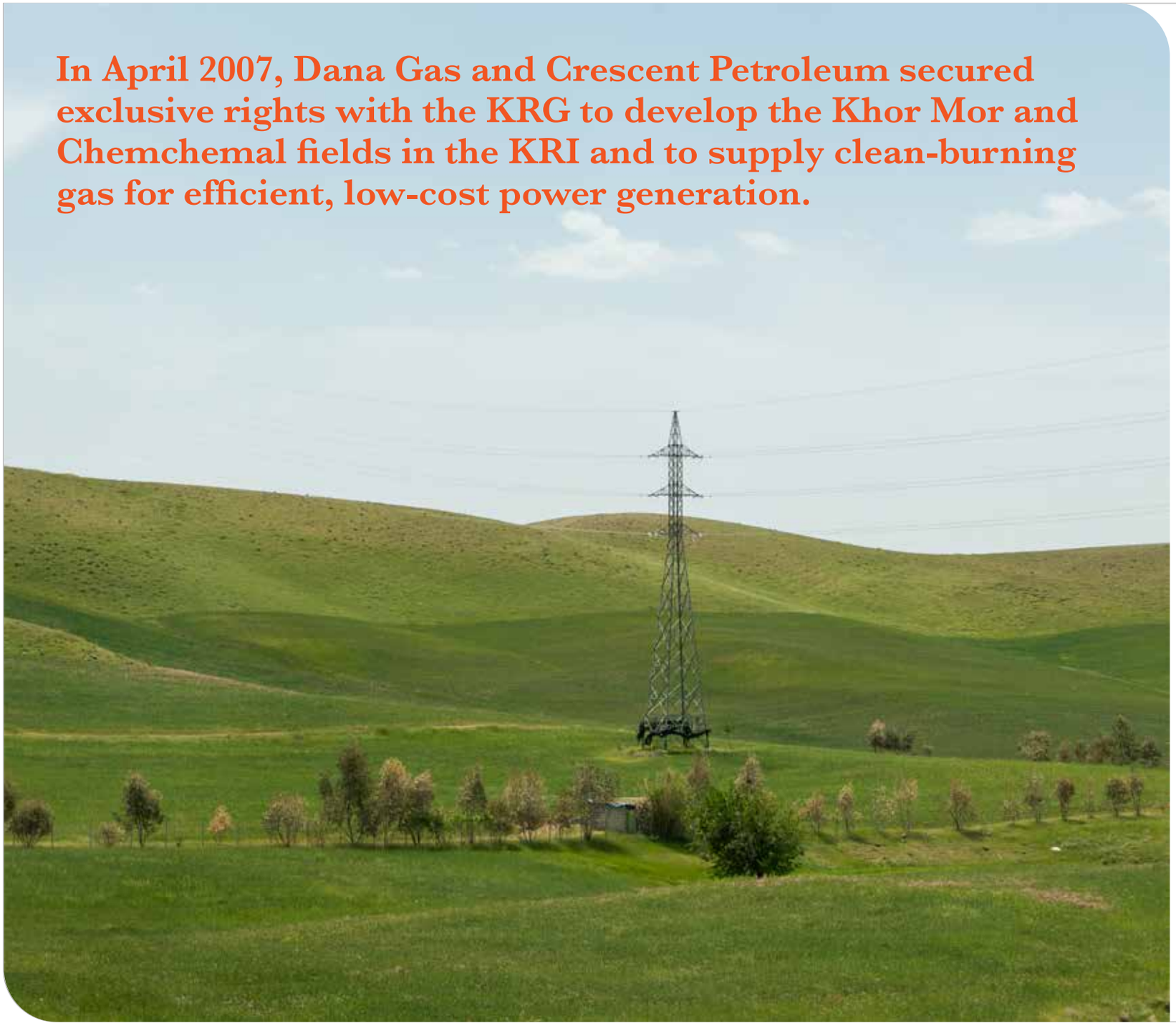
THE PROJECT'S PRESENCE IN THE KRI





Khor Mor: Pearl embraces a culture of continuous, incremental improvement to enhance operational efficiency and reduce emissions

The Project's Presence in the KRI



By October 2008, just 15 months from the start of construction, the Kurdistan Gas Project commenced production from Khor Mor, setting another industry benchmark and solidifying a legacy of pioneering social and economic impact in the region. Gas from the Khor Mor field began flowing to power plants in Erbil and Chemchemal, supporting the transformation of the KRI into one of the Middle East's most dynamic regions.

In late 2017, the project launched its expansion phase, ultimately increasing production capacity at Khor Mor from 500 MMscfd to 750 MMscfd. Despite global supply chain disruptions, delays caused by the COVID-19 pandemic, and security incidents, drilling, construction, and commissioning of the KM250 plant were successfully completed in October 2025. The new production train required more than 6,000 tonnes of steel and 6.2 million man-hours, making it one of the largest private-sector energy infrastructure projects undertaken in Iraq in recent years.

Between 2008 and 2025, Pearl Petroleum invested US$3.9 billion and delivered cumulative production exceeding 500 million barrels of oil equivalent (BOE) in gas and liquids to power plants, industry, and households.

Pearl Petroleum has maintained a continuous and expanding presence in the KRI since then, reinforcing the region's energy security and supporting its economic growth. Since its inception, the Project has delivered substantial and visible benefits to the region and Iraq as a whole.

By supplying reliable gas to power plants, the partnership has supported the prosperity of more than 6.4 million people, helping improve public services and enabling modern infrastructure and commercial development across the region.

Looking ahead, the Kurdistan Gas Project is expected to undergo significant further investment, with planned capital and operating expenditure between 2026 and 2035 projected at approximately US$10.2 billion.

Today, the Project underpins regional electricity generation across the KRI, accelerating the KRG's Runaki initiative, which aims to deliver 24-hour power to homes and businesses, while enabling gas supply to other parts of Iraq.



Case Study:

Reinforcing flora and fauna in the KRI with tree planting

Preserving and enhancing biodiversity in and around our operations is not just critical to our sustainability efforts, it is important for community wellbeing. In 2024, Pearl launched a tree planting initiative at Khor Mor to enhance biodiversity, support wildlife, and create sustainable habitats.

A 580 m² commercial-grade vegetation nursery was constructed to foster the growth of tree saplings and shrubs suited to local conditions. The nursery provides optimal conditions for seeds to germinate and seedlings to thrive, with a capacity to produce 2,000–3,000 saplings annually, supporting ongoing tree planting efforts.

After consulting local agricultural experts, fifteen species of trees and shrubs, chosen for their appropriateness to the region's climate and water resources, were introduced. In all, our teams planted 1,250 trees and 500 shrubs on-site during 2024, watered by a groundwater irrigation system.

The Project's Presence in the KRI

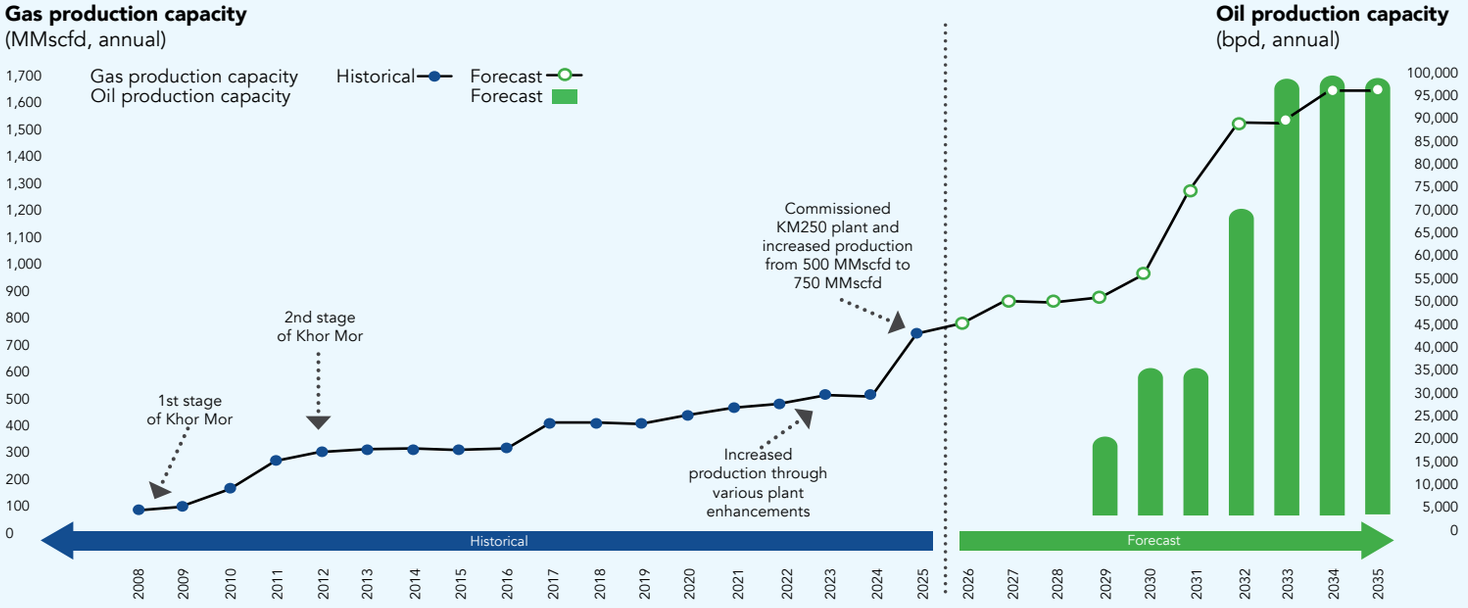
Pearl's next strategic priorities are to continue the advancement of the Khor Mor field and the appraisal and development of the Chemchemal gas field, one of Iraq's largest undeveloped reserves. This future phase is expected to unlock significant additional volumes of natural gas, oil, and other liquids.

The company has signed long-term supply agreements with industrial cement and steel makers in the region to collectively supply up to 142 MMscfd of gas. Activities to appraise the Chemchemal field and initiate production have begun and new pipelines are to be built by private-sector companies to supply gas to industrial users in Erbil and Bazian, including a dedicated 40-kilometre pipeline linking the Chemchemal field directly to industrial consumers in the Bazian area.

Ultimately, the Project is a symbol of long-term collaboration and shared vision to create lasting value for the people of the KRI and beyond.

Our contribution to the economy: Gas and oil production

Gas production capacity is expected to more than double by 2035 compared to the 750 MMscfd today; oil production is planned to begin in 2029.

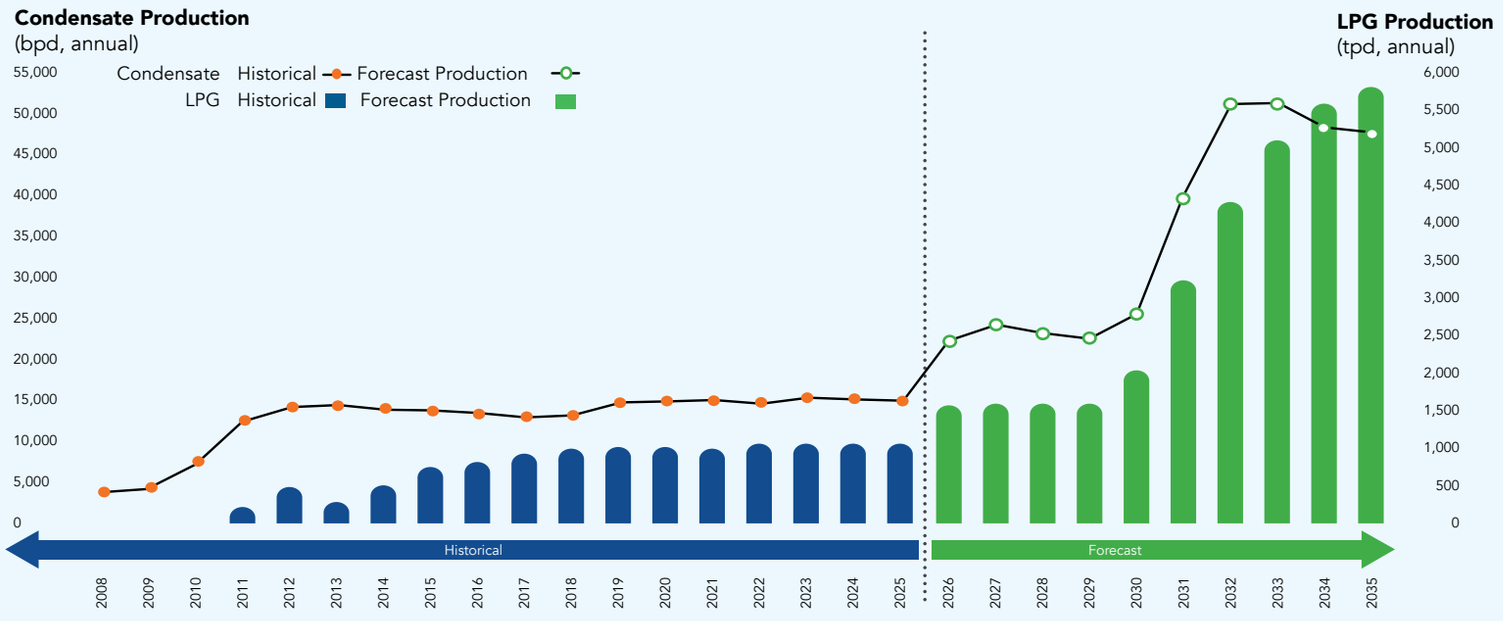


Source: Pearl Petroleum

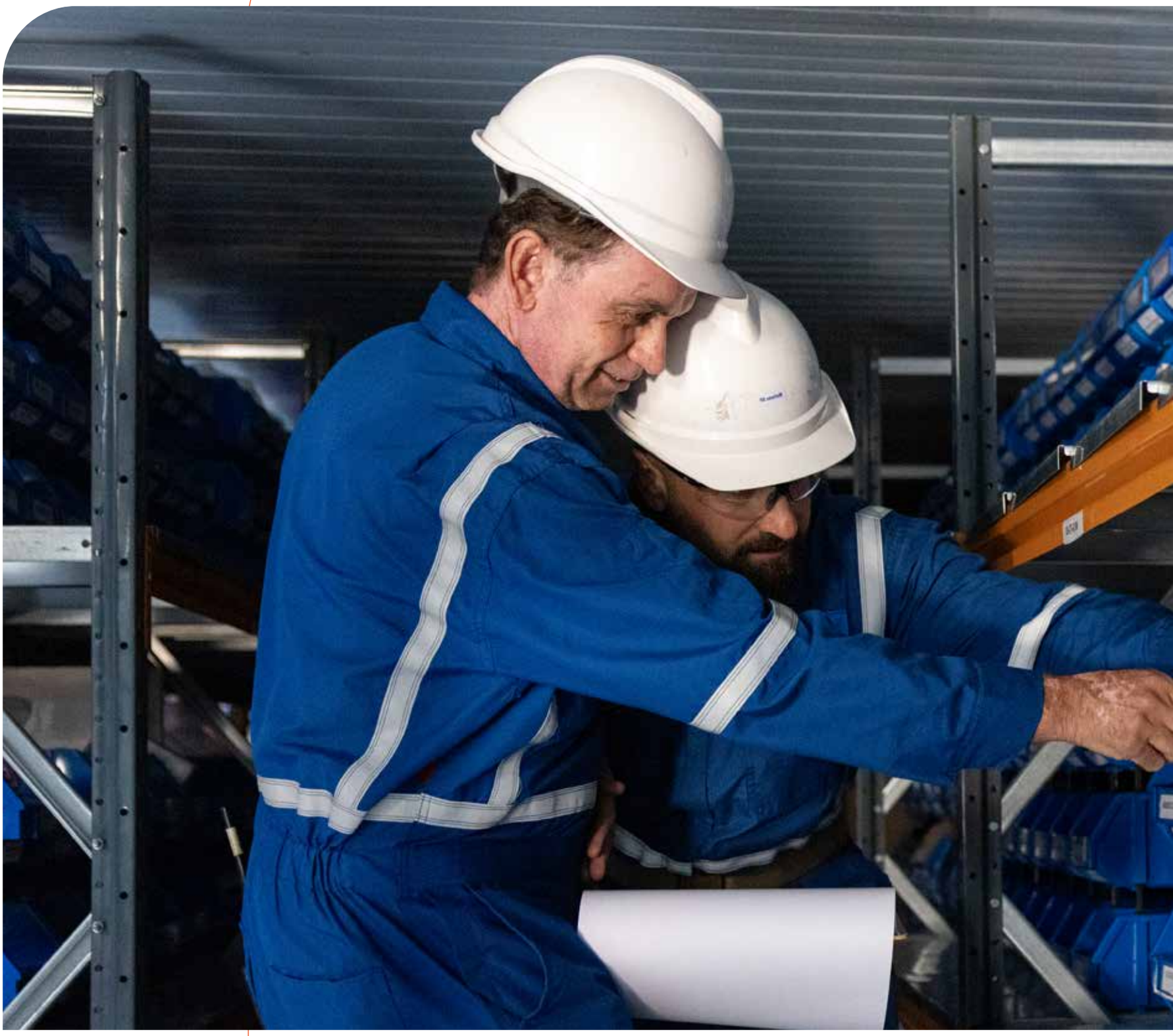


Our contribution to the economy: Condensate and LPG production

Condensate production has steadily increased, reaching ~20,000 bpd in 2025 and projected to rise to ~47,000 bpd by 2035. Similarly, LPG production is projected to rise from circa 1,100 tpd in 2025 to 5,500 tpd by 2035.



Source: Pearl Petroleum





THE PROJECT'S CONTRIBUTION TO THE KRI

PwC estimates that gas supplied by Pearl underpinned 56% of non-oil GDP in 2025

The Project's Contribution to the KRI

The Project's contributions to the KRI are exhibited in three key areas: economy, society, and the environment. These contribute considerably to local development priorities and to a global development agenda centred around the SDGs.



The primary contributions across these areas are:

Contribution to the KRI economy

- Providing natural gas to major power stations
- Stimulating economic growth
- Supporting entrepreneurship and business growth
- Energy system cost savings from substitution of diesel with gas
- Creating value for the KRG through indirect contribution to government revenues
- Economic return on investment to KRI

Impact on the KRI society

- Creating jobs, particularly for locals, women, and young people in the KRI
- Improving social wellbeing through better local social infrastructure and higher value-added jobs
- Improving safety outcomes by preventing injuries
- Giving back to the community through a wide range of social initiatives

Stewardship of the environment

- Improving use of resources to promote long-term prosperity
- Avoided greenhouse gas emissions as a result of substituting high-carbon diesel for relatively low-carbon gas
- Enhanced air quality and positive benefits on health

The Project's Contribution to the KRI Economy

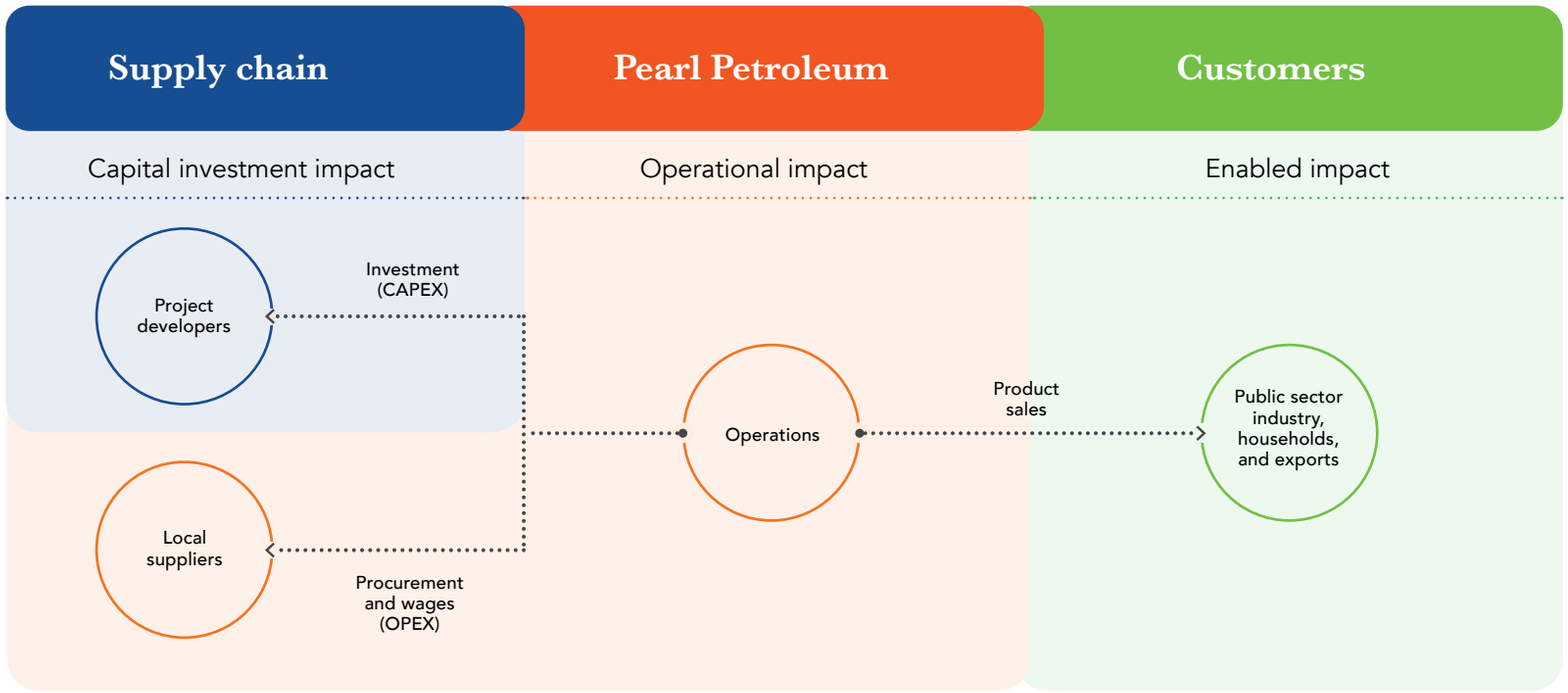
The primary areas of impact on the KRI economy

PwC assessed each factor independently to determine the Project's ultimate economic footprint in the region.

Capital investment impact
Pearl stimulates the KRI economy through investment in new infrastructure, sustaining an immediate, short-term boost to employment and economic activity. The impact of its local capital expenditures and associated construction activities are assessed through economic multipliers.

Operational impact
The Project's operations produce added value for the economy through recurring local procurement and employee wages. The latter two impacts are also assessed using economic multipliers to determine their wider economic impact.

Enabled impact
The provision of energy, the Project's primary product, converted into electric power, enables activity throughout the wider KRI economy, providing necessary input for other economic sectors such as agriculture, industry, and commerce to thrive while supporting local communities. This is analysed using output elasticities that assess the relationship between energy provision and economic growth.



Reliable, affordable electricity powered by gas is a central driver of economic growth

Economic growth is closely tied to electricity consumption through its impact on industrial productivity and diversification. A reliable power supply lowers business costs, supports the creation of new firms, especially small- and medium-sized enterprises, and improves the competitiveness of energy-intensive industries in both domestic and export markets.

The power sector is thus highly interconnected with the wider economy, providing a critical input to industrial and commercial activity. Conversely, unreliable electricity disrupts operations and can cost businesses billions of dollars. Expanding reliable electricity supply in the KRI has therefore been a key driver of productivity, competitiveness, and ultimately growth.

Pearl Petroleum has played a central role in enabling this transformation by supplying natural gas to the KRI's power sector. Historically, the KRI faced severe electricity shortages and frequent blackouts that constrained development.

The Kurdistan Gas Project has been transformative in providing a more reliable, lower-cost, and lower-emission energy source for power generation, reducing reliance on expensive diesel and improving system stability. As seen in other emerging economies, a strong power sector is fundamental to sustained economic development.

This has supported a shift towards a more diversified industrial base, facilitated business expansion, and delivers broader social benefits. PwC estimates that gas supplied by Pearl underpinned 56% of non-oil GDP in 2025.

PwC estimates that the gas supplied by Pearl for power generation underpins a substantial share of economic activity, cumulatively contributing approximately US$240 billion in enabled GDP contribution between 2008 and 2025. This impact will grow considerably in the coming decade, contributing approximately US$420 billion cumulatively between 2026-2035.

Reliable electricity supply generates economic and social benefits through four main channels:

- **Economic diversification:** Reliable power removes a key constraint on industry, enabling more efficient production and expansion into sectors such as services.
- **Entrepreneurship and business growth:** Stable electricity reduces operating costs, enhances competitiveness, and supports SMEs development and expansion.
- **Fiscal savings and reinvestment:** Replacing diesel with natural gas has generated an estimated US$38.3 billion in savings for the KRG (2008–2025), projected to reach US$59.9 billion over the next decade.
- **Social and human capital impacts:** Reliable electricity reaching cumulatively over 80% of the population with 24-hour supply improves quality of life and outcomes in areas such as education.



The Project's Contribution to the KRI Economy

Capital investment impact

Pearl's local capital investment provides a significant stimulus to the KRI economy
Over 18 years of operations (2008–2025), Pearl has invested approximately US$2.7 billion in capital expenditure across the KRI, of which around US$800 million represents direct local capital investment. These investments include gas production plants, operational facilities, pipelines, and supporting infrastructure.

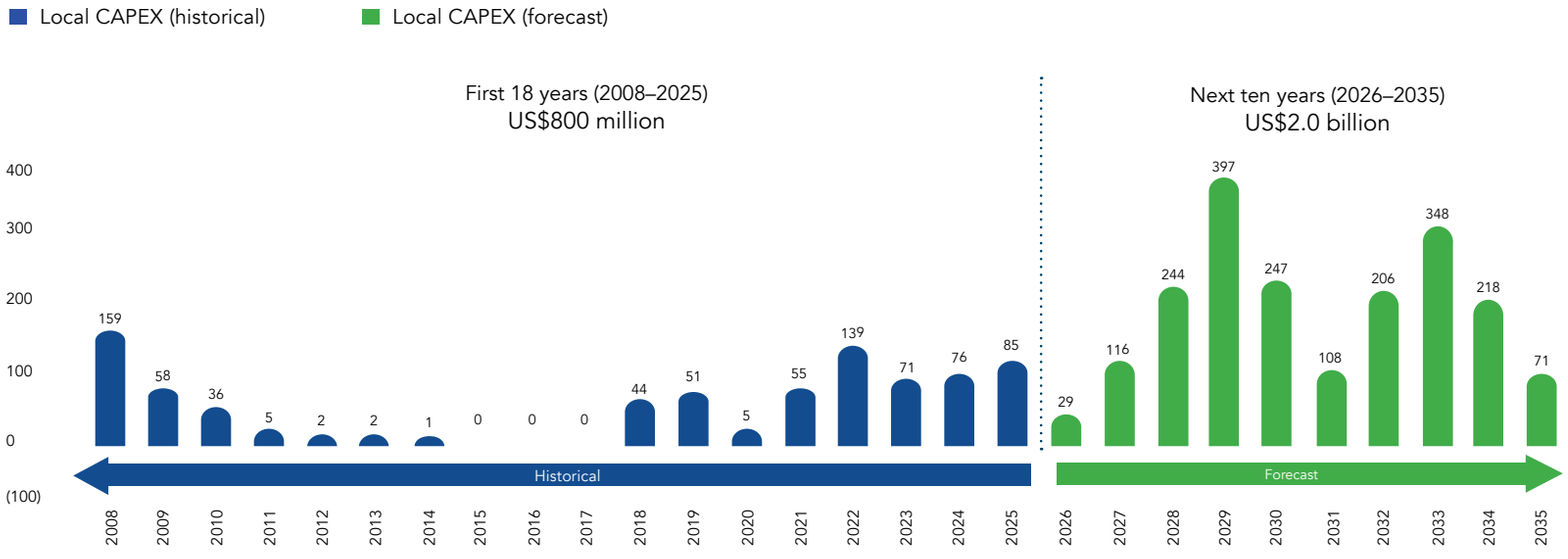
Between 2008 and 2025, approximately 30% of total capital expenditure was awarded to local project developers and suppliers, contributing an estimated US$700 million to the KRI's GDP.

Looking ahead, during the period 2026–2035, Pearl plans to invest approximately US$6.6 billion in capital expenditure for major appraisal and development activities at the Khor Mor and Chemchemal fields, as well as in additional gas and oil processing facilities. Of this amount, around US$2 billion is expected to be direct local capital investment.

These planned investments are estimated to contribute a further US$1.8 billion to the KRI's GDP, delivering sustained benefits to local suppliers, project developers, and the workforce.

Local capital investment

(US$m, annual)



Source: Pearl Petroleum and PwC analysis



First 18 years (2008–2025)

Local capital investment impact on GDP

US$700 m

Source: PwC analysis

Next ten years (2026–2035)

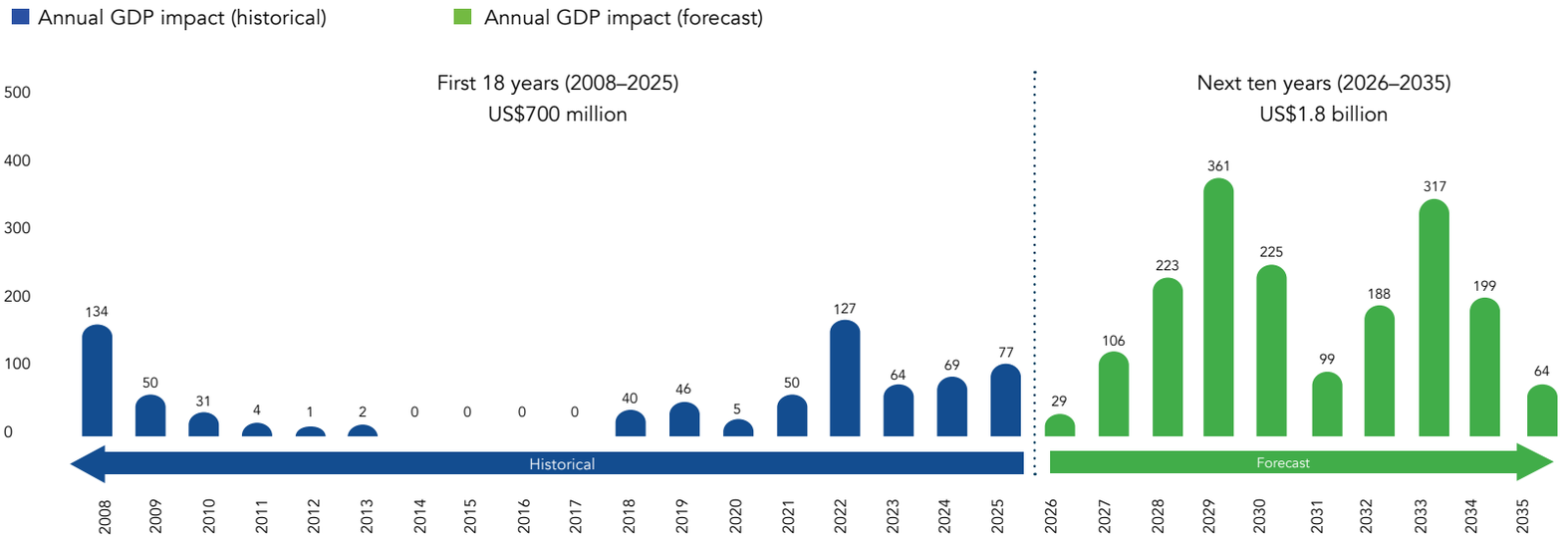
Local capital investment impact on GDP

US$1.8 bn

Source: PwC analysis

Local capital investment impact on GDP

(US$m, annual)



Source: Pearl Petroleum, PwC analysis

The Project's Contribution to the KRI Economy

Operational impact

Since the start of production in 2008, day-to-day operations have contributed to sustained economic activity in the KRI and are expected to rise steadily in line with production expansions, investment, and local engagement over the years.

The operational impact reflects both the direct GDP generated through company operations as well as the wider economic value sustained through local procurement and employee wage expenditure.

Between 2008 and 2025, the Kurdistan Gas Project is estimated to have contributed approximately US$7.0 billion through operational activity to the KRI's Gross Value Added (GVA), which amounts to GDP on a sub-national level. PwC estimates that the largest sectors to benefit from this spending include the food sector (particularly catering services), manufacturing, as well as the supply of industrial and logistical materials required to support operations across the region.



Operational impact

First 18 years (2008–2025)

Operational GVA impact

US$7 bn

Source: PwC analysis

Next ten years (2026–2035)

Operational GVA impact

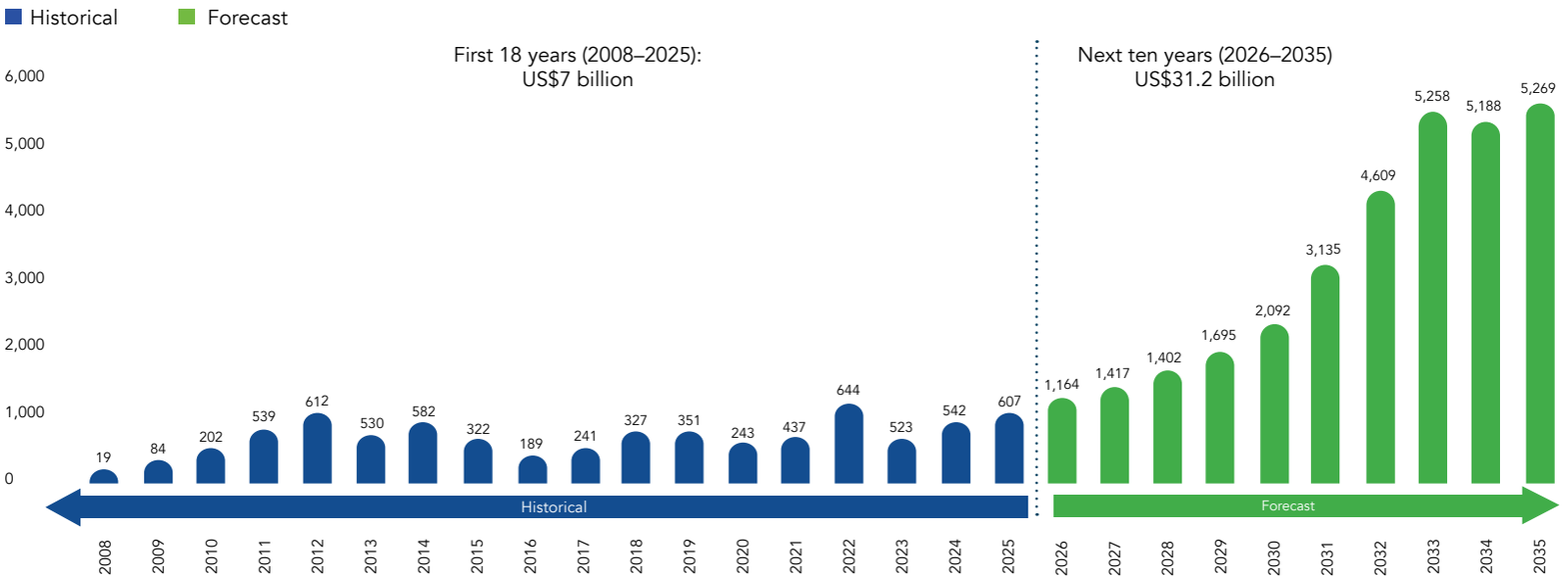
US$31.2 bn

Source: PwC analysis



Operational impact on GVA

(US$m, annual)



Source: Pearl Petroleum, PwC analysis

The Project's Contribution to the KRI Economy

Enabled impact

Economic contribution to wider sectors in the economy
The Project's most significant economic contribution is the actual gas that fuels the KRI's electricity grid. Natural gas produced by the Project fuels more than 80% of the electric power generated in the KRI.

While Pearl's investment is just one factor fuelling the region's growth, the provision of stable, low-cost gas remains a necessary input that continues to underpin economic development throughout the KRI. The natural gas production enables a reliable electricity supply to support basic households as well as agriculture, trade, tourism, industry, and other activity across all non-oil sectors of the economy.

Since 2008, gas supplied from Khor Mor has played a central role in enabling the expansion of the KRI's electricity system, more recently powering the Runaki programme, which has made near-24-hour power possible in the region.

PwC estimates that between 2008 and 2025, the cumulative economic contribution from gas-powered electricity generation amounted to approximately US$240 billion.

The total impact will grow considerably in the coming decade, contributing approximately US$420 billion cumulatively between 2026–2035 driven by increased supply capacity and ongoing plant reliability improvements.





First 18 years (2008–2025)

Pearl's enabled GDP contribution

US$240 bn

Source: PwC analysis

Next ten years (2026–2035)

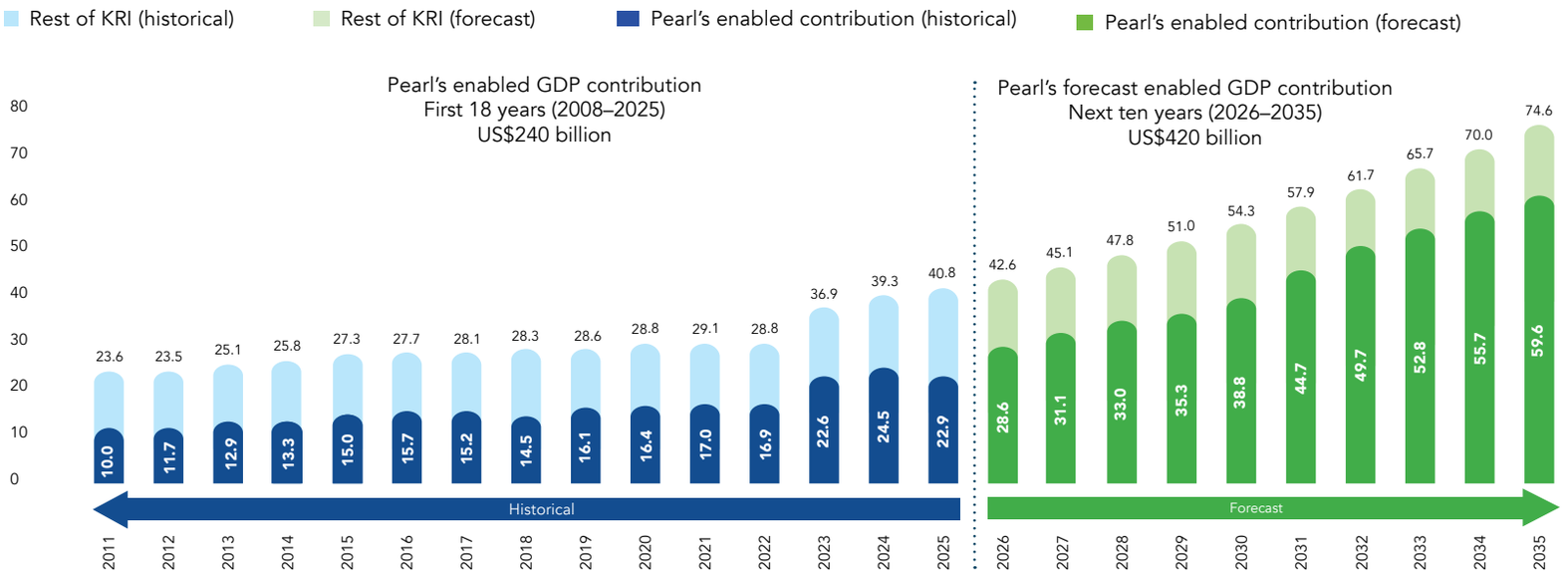
Pearl's forecast enabled GDP contribution

US$420 bn

Source: PwC analysis

Enabled activity in the wider economy

Nominal non-oil GDP (US$bn, annual)



Source: Pearl Petroleum, PwC analysis

N.B. The supply of gas is supporting electricity generation, which in turn is supporting economic activity in the non-oil economy, hence why non-oil GDP has been estimated for KRI. Given there is not recent official data on KRI GDP, it has been derived using Iraqi non-oil GDP, adjusted to reflect the relative share of KRI employment vs. total Iraq employment in individual sectors in the economy. More details in the Appendix.

The Project's Contribution to the KRI Economy

Case Study:

The Project's long-term impact through the eyes of one man



When Shakhawan Omer Sabir first arrived at the Khor Mor gas plant in 2015, he came as a day labourer, one of many men seeking steady work in a region still emerging from the wreckage of conflict. The plant's steel towers rose from the plains of Khor Mor like a promise of stability, of work, and perhaps even of renewal.

A decade later, Mr. Sabir's story has become symbolic of that promise. Now an entrepreneur employing hundreds of workers in and around the area, Mr. Sabir traces his ascent to the years he spent inside the plant's gates.

A resident of Sheikh Hamid, a short drive from Khor Mor, he joined Pearl at a time when jobs were scarce and entire communities were struggling to rebuild after decades of war.

What began as manual labour evolved into something more enduring: training, advancement, and exposure to the mechanics of a modern energy operation.

"The plant was more than a workplace," he recalled during a recent visit with Crescent Petroleum's CEO, Majid Jafar. "It was a school."

The skills he acquired — technical, managerial, and logistical — laid the groundwork for a leap few in his position might have imagined. Mr. Sabir established his own contracting company that today services Pearl Petroleum and other operators in the region, forming part of a growing ecosystem of businesses.

The impact extends beyond his own success; his company today employs hundreds from Qadir Karam and neighbouring districts, providing salaries into villages where opportunity was once measured in short-term labour or migration abroad.

Mr. Sabir speaks of Pearl Petroleum's presence not only in economic terms, but also in communal ones. He described investments that helped restore infrastructure in villages long neglected or scarred during the days of the former regime. For many families, he said, steady work at Khor Mor or through its contractors has meant the difference between subsistence and stability.

"None of this would have been possible without the company's support," Mr. Sabir said. "We are forever grateful for the opportunities that have made such an extraordinary difference in our lives."

In a region where the dividends of natural resource development are often debated, stories like Shakhawan's offer a more palpable measure of impact, in livelihoods, businesses formed, and growing communities.

Contributing to government revenues
The Project delivers a substantial, multi-layered contribution to public finances in the KRI.

Pearl Petroleum supplies specified volumes of gas produced from the Khor Mor field to the KRG free of charge for domestic power generation. Between 2008 and 2025, the value of gas supplied free to the KRG is estimated at approximately US$7.5 billion. Over the next ten years (2026–2035), the value of free gas supply is projected to be around US$4.3 billion, assuming an average Brent oil price of US$65 per barrel.

In addition, under the terms of the agreement, the KRG is entitled to receive 78% of total revenues generated once Pearl Petroleum has recovered its costs and contractual entitlements. This represents a significant and sustained form of fiscal support, materially strengthening the region's public finances and underpinning the government's capacity to invest in infrastructure, public services, and social programmes.

First 18 years (2008–2025)

Savings from the supply of Free Gas to the KRG

US$7.5 bn



Source: Pearl Petroleum

Next ten years (2026–2035)

Savings from the supply of Free Gas to the KRG

US$4.3 bn



Source: Pearl Petroleum

The Project further supports government income through its wider economic impact. Project expenditure on local suppliers and employee remuneration generates additional economic activity across the KRI. This multiplier effect translates into higher corporate and personal income tax receipts, as well as increased social security contributions, thereby broadening and reinforcing the public revenue base.

The assessment estimates the wider value generated to the KRG. Between 2008 and 2025, it is estimated that US$250+ million in wider value was generated for the KRG. Looking forward in the coming ten years (2026–2035), the value generated for the KRG is forecast to reach US$900 million. These revenues strengthen the region's fiscal base, supporting the government's ability to invest in infrastructure, services, and social programmes.

Enabling diesel cost savings to the KRG
Fuelling the KRI's electricity generation with natural gas delivers immense cost advantages compared to more expensive, carbon-intensive alternatives such as diesel.

By displacing diesel in power generation, the Project reduces the region's fuel import needs and enhances overall energy affordability. The cumulative savings to the KRG derived from generating power with gas between 2008 and 2025 are estimated at US$38.3 billion and a projected US$59.9 billion for the next ten years (2026–2035).

First 18 years: (2008–2025)

US$38.3 bn

Fuel cost savings to the KRG



Source: Pearl Petroleum, PwC analysis

Next ten years: (2026–2035)

US$59.9 bn

Fuel cost savings to the KRG



Source: Pearl Petroleum, PwC analysis

The Project's Contribution to the KRI Economy

Economic return on investment to the KRI

Economic return on investment measures how much economic value is generated for every dollar spent. In this assessment, it refers to the GDP contribution generated by the total spending of Pearl Petroleum, including both capital expenditure and day-to-day operational costs, over the period of analysis.

Between 2008 and 2025, total project spend is estimated to have generated an economic return on investment of 2.0 times its value in GDP impact.

This reflects the strong multiplier effect of investing in energy infrastructure and supply, in which each dollar spent supports direct economic activity.

This level of return highlights the Project's long-term value to the KRI, not only as a producer of natural gas, but as a foundational enabler of growth and sustainable development.

First 18 years (2008–2025)

2.0x

Economic return on investment to the KRI

Source: PwC analysis

Cumulative (2008–2035)

2.7x

Economic return on investment to the KRI

Source: PwC analysis



Richard Hall, CEO of Dana Gas, guiding the efforts to successfully deliver the KM250 expansion project eight months ahead of schedule



After torrential rains washed away the major bridge to Qadir Karam, Pearl Petroleum rebuilt the major artery, which connects the surrounding villages

Impact summary

Impact	First 18 years (2008–2025)	Next ten years (2026–2035)
Enabled impact	US$240 bn	US$420 bn
Capital investment impact on GDP	US$700 m	US$1.8 bn
Operational impact on GVA	US$7.0 bn	US$31.2 bn
Savings from the supply of Free Gas to the KRG	US$7.5 bn	US$4.3 bn
Fuel cost savings to the KRG	US$38.3 bn	US$59.9 bn
Economic return on investment	2.0x	2.7x*

*cumulative for 2008–2035

Source: Pearl Petroleum, PwC analysis




LAGAS



THE PROJECT'S IMPACT ON THE KRI SOCIETY



Through its capital and operational spending, Pearl has created thousands of direct jobs in the KRI and supported additional employment indirectly via its supply chain and employee spending, indirectly contributed to employment through supply chain activities and spending by employees

The Project's Impact on the KRI Society

Capital investment impact on employment

The Kurdistan Gas Project stimulates local employment and creates thousands of direct and indirect jobs
A significant promise of the Project has been the creation of jobs both locally, in surrounding villages, and across the region and the country. Through capital and operational expenditures, Pearl has directly employed thousands of professionals in the KRI and indirectly contributed to employment through supply chain activities and spending by employees. This includes direct employment by the company, indirect employment made possible by supply chain activity, and induced employment enabled by their spending in the community.

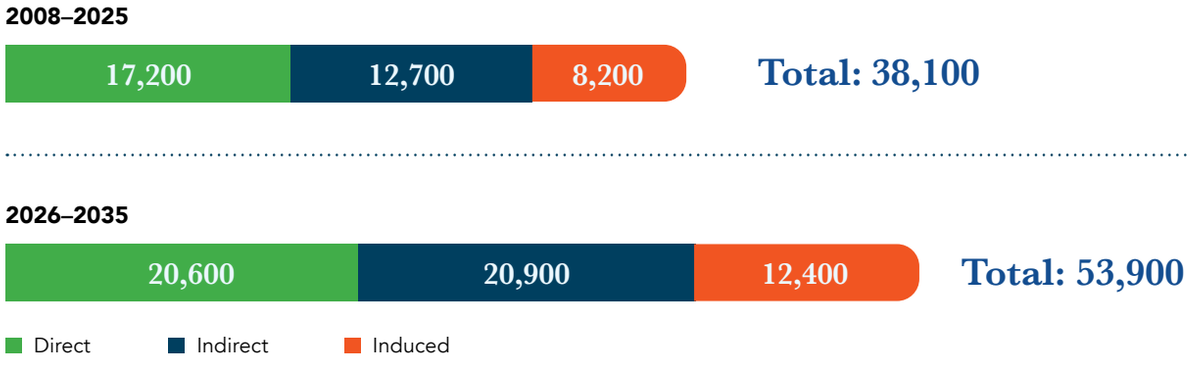
The Project's capital investment significantly benefits society by improving income security and wealth creation. This also encourages consumer spending, further benefiting other businesses.

Cumulatively between 2008 and 2025, the Project is estimated to have supported approximately 38,100 job years through its capital investment. This figure reflects improvements in labour productivity over time as workers received training and advanced in their roles.

Overall, 17,200 job years were generated through direct employment, 12,700 were supported through procurement and supply chain activities, and approximately 8,200 were sustained through employee spending across the wider economy.

In the coming decade, the Project's employment impact will increase considerably. From 2026 to 2035, an estimated 53,900 additional job years will be created or sustained, including 20,600 direct, 20,900 indirect, and 12,400 induced job years as the Project expands production, deepens its local footprint, and continues to invest in people, skills, and regional suppliers.

Capital investment impact (job years, cumulative)



Direct: Directly employed by the company, Indirect: Enabled by supply chain activity, Induced: Enabled by employee spending
Source: Pearl Petroleum, PwC analysis





Case Study:

Encouraging better road safety with improved signage

The roads that wind through Chemchemal and its locales have long been hazardous and the site of frequent, sometimes tragic, road accidents. Unmarked intersections, faded directions, and poorly lit stretches of highway have consistently contributed to accidents particularly in the hinterlands of the KRI.

When Chemchemal officials approached local partners for help, the request was straightforward: they needed clearer signs, safer roads, and fewer accidents. The response came from Pearl in the form of 200 new road safety signs and 11 large traffic markers installed at critical junctions and high-risk corridors across the district.

Designed in accordance with the KRG traffic standards and placed in consultation with police officers familiar with local accident patterns, the signs were intended not merely to guide drivers, but to change behaviour. Bright warnings now signal sharp bends and hazards ahead. Larger directional signs improve navigation in congested areas where confusion once caused abrupt turns and collisions.

The improvements represent a relatively modest investment with potentially outsized impact for local communities. Local authorities say early monitoring suggests safer drives and improved traffic flow. Chemchemal's Traffic Police continue to track accident data and assess whether additional signage will be needed.

In a region where infrastructure is still catching up with growth, even a signpost can be lifesaving.

The Project's Impact on the KRI Society

Operational impact on employment

Operational activities drive steady job creation
The employment generated through day-to-day operations has grown consistently since the start of production. As capacity has expanded and local supply chains have deepened, operational activities have created lasting employment across the KRI.

Cumulatively between 2008 and 2025, the number of job years attributable to operations grew to 47,000 in total, including 9,500 direct job years, 12,000 indirect job years, and 25,500 induced job years. Between 2026–2035 operations are expected to quadruple the number of cumulative jobs created to 193,000 job years, including 23,000 direct job years, 87,000 indirect job years, and 83,000 induced job years.

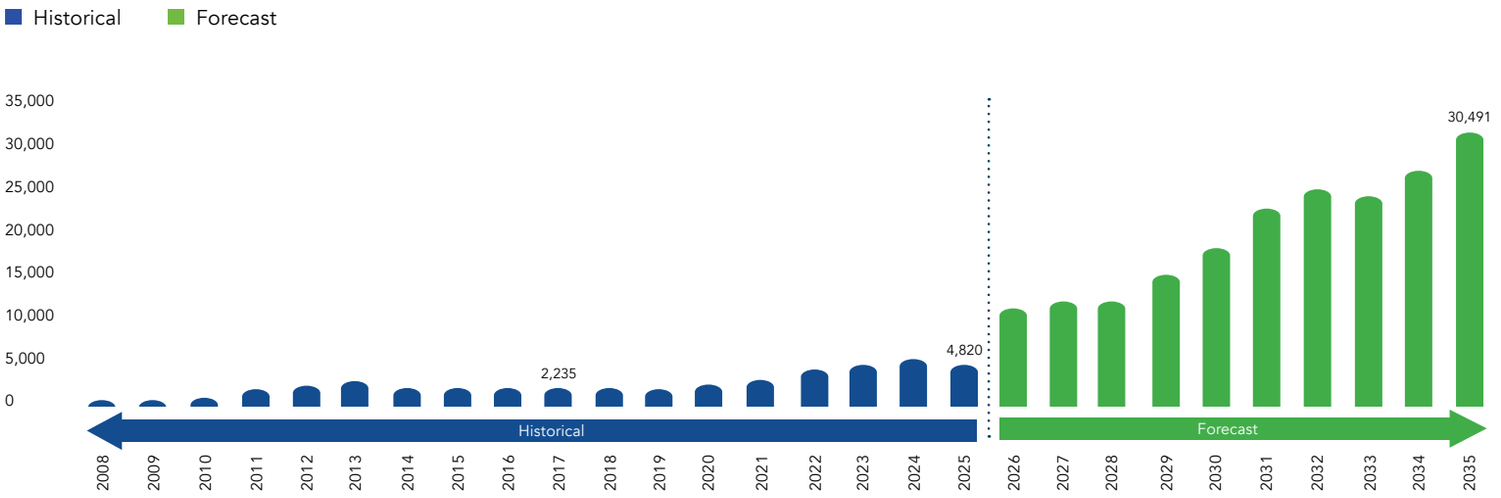
Maintaining a strong focus on health and safety
Pearl continues to prioritise the health, safety, and wellbeing of all personnel across its operations. This commitment is demonstrated through the consistent application of safety protocols, regular training, and ongoing investment in risk management systems. Between 2023 and 2025, total recordable workplace injuries decreased by 48%, reflecting sustained improvements in safety performance over the period.

The Project also maintained an exceptional record of lost-time injury (LTI)-free years among full-time employees since 2016.



Operational impact on employment

(Job years, annual)



Source: *Pearl Petroleum, PwC analysis*

Operational impact (job years, cumulative)

2008–2025



Total: 47,000

2026–2035



Total: 193,000

Direct Indirect Induced

Direct: Directly employed by the company, Indirect: Enabled by supply chain activity, Induced: Enabled by employee spending
Source: Pearl Petroleum, PwC analysis

The Project's Impact on the KRI Society

The Project's impact on local employment

Pearl's 2025 performance highlights tangible progress in inclusive employment outcomes, capacity building, and high localisation

2025 Impact

76%
staff localisation

54%
procurement localisation

52%
local content

18,000+
training hours delivered

511%
increase in female employment (2018 – 2025)

11%
increase in employment among young people* (2018 – 2025)

*Young people are defined here as individuals aged 20–30
Source: Pearl Petroleum, PwC analysis

Pearl prioritises local employment and development of human capital

Pearl remains committed to building a workforce that draws from the communities in which it operates. The company has prioritised local content, which measures the share of the Project's economic activity that remains within the KRI. This includes wages paid to local employees, procurement from local suppliers, investment in training with local training companies, and the use of domestically developed assets. Cumulatively, local content amounted to 52% in 2025.

In 2025, 76% of employees were KRI nationals, representing a two-fold increase in the number of local staff since 2018. This progress reflects continued efforts to promote sustainable employment and skills development within the region.

Between 2018 and 2025, 73% of total training expenditure was allocated to local programmes, with employees in the KRI completing over 18,000 hours of technical and soft skills training in 2025. Courses have included project management, leadership, business communication, job-specific technical training, and health, safety, and environment (HSE).

Pearl has also made considerable progress on inclusion. Chief advancements include the growing share of women working in Pearl's ranks, particularly in technical roles at the Khor Mor plant, breaking new barriers for women in Science, Technology, Engineering, and Mathematics (STEM) fields.

Between 2018 and 2025, Pearl witnessed a five-fold increase in female employment. The expansion in the ranks of women is the result of concerted efforts to enable and encourage women to take on new challenges and skills in the company.

Pearl has established women-friendly working measures, capacity building during employment, flexibility in work schedules to account for female employees' needs, and provision of separate accommodation arrangements for female employees at the Khor Mor plant.

Between 2018 and 2025, there was also an 11% increase in employment among young adults aged 20-30. These trends reflect a broader commitment to building a diverse and empowered workforce that is equipped to support long-term regional development and capacity building.

Social Performance and CSR initiatives

Social Performance investment is a strategic function at Pearl, ensuring a direct, lasting impact on the communities where it operates. Work to date has covered three main areas of impact: villages, public services, and people. Notable community contributions include the provision of reliable and free electrical power, school transportation to villages, sponsoring community workers and teachers, repairs to community equipment and water infrastructure, as well as capacity building within the community.

Since inception, Pearl has invested more than US$20 million in CSR initiatives, reaching a wide range of communities across the KRI through its Community Action Programme (CAP). CAP combines employee volunteer time and financial support to assist local villages, businesses, and schools, contributing to improved living standards, health and wellbeing, community security and stability, and the development of human capital across the region.





Pearl funded the refurbishing and expansion of the Takya Jabari Health Centre

The Project's Impact on the KRI Society

US$20.1m SP/CSR initiatives
First 18 years (2008–2025)

Major investments since inception have reached a large and wide range of people in the KRI

Select Activities	Beneficiaries
Chemchemal – Emergency centre renovation	50,000 residents
Chemchemal – Provision of submersible pumps and soft starters	32,000 families
Deden – Primary school renovation	475 students and 33 teachers
Qadir Karam – Breast cancer awareness	847 women
Provision of essential food baskets and care packages	1,000 low-income individuals

SP/CSR initiatives
Next ten years (2026–2035)

Social Performance KRI 10-Year Strategic Plan
Five Strategic Pillars (2026–2035)

Select Activities
Community infrastructure, education, energy, and essential services
Environment, climate, agriculture, and community resilience
Stakeholder engagement, governance, and social risk management
Workforce development and employment
Monitoring, evaluation, and reporting (M&E)

Impacting villages

By providing:

- Uninterrupted electricity
- Clean and safe water
- Basic infrastructure

- SDG 6 – Clean Water and Sanitation
- SDG 7 – Affordable and Clean Energy
- SDG 9 – Industry, Innovation and Infrastructure

- Provided 9,800 litres per month of fuel to power local generators and help ensure stable electricity in areas not connected to national grid.
- A full rehabilitation of a water well was completed in Qadir Karam to restore water access for 150 families.
- Potable water was delivered over 105 days to residents of Chemchemal and Shorsh during drought.
- New irrigation water network installed in Takya Jabari to alleviate chronic water shortages, supporting 47 staff and forest rangers.
- Rehabilitating Alyawa village bridge, a key route connecting Qadir Karam and Khor Mor, following flood damage, restoring access and ensuring community safety.

Impacting public services

By providing:

- Healthcare
- Social support institutions
- Community facility upgrades



- SDG 3 – Good Health and Wellbeing



- SDG 10 – Reduced Inequalities



- SDG 11 – Sustainable Cities and Communities

- Financial support to establish an Emergency Medicine Department at Chemchemal Technical Institute, equipping the next generation of healthcare professionals.
- Haemodialysis and reverse osmosis equipment were provided to the Chemchemal Kidney Centre, enhancing treatment outcomes for dialysis patients in Chemchemal and Bazian.
- Contribution of specialised medical equipment to Hiwa Cancer Hospital, improving cancer diagnosis and care for patients across the KRI.
- In Sulaymaniyah, supported ongoing renovations to the Orphanage and Elderly Care House, improving facilities and living conditions for children, juveniles, and the elderly. Essential hygiene and cleaning materials were provided regularly, while Eid gifts were distributed to bring comfort and dignity to residents during holidays.
- The Chemchemal Emergency Centre, the only 24-hour facility in the area, was refurbished to ensure continued delivery of critical medical services to over 50,000 people.

Impacting people

By providing:

- Equal opportunities
- Education
- Employment



SDG 1 – No Poverty



SDG 4 – Quality Education



SDG 8 – Decent Work and Economic Growth



SDG 10 – Reduced Inequalities

- Renovations and upgrades were delivered across multiple institutions, including Deden Primary School, Chemchemal Technical Institute, and Charmo University, improving the learning environment for thousands of students and teachers.
- Essential care packages, including food and hygiene supplies were distributed to 1,000 low-income individuals and families, including daily wage workers and people with special needs.
- In Chemchemal and Sulaymaniyah, 45 individuals with special needs received tailored support: wheelchairs, computers for education, and sewing machines to support livelihoods.
- The Sulaymaniyah Down Syndrome Centre was enhanced with a new safe recreational space, supporting developmental needs through play.
- The Qadir Karam High School summer empowerment programme provided training for students and teachers to strengthen academic capacity and skills development.
- The salaries of two ambulance drivers for the health centre within Qadir Karam were sponsored, supporting employment opportunities.

The Project's Impact on the KRI Society



Case Study:

How ensuring clean water access in Qadir Karam has empowered a village and a community

The town of Qadir Karam, home to 250 families, relies on water pumped from wells 13 kilometres away into two elevated storage tanks. Years of neglect and government budget shortfalls led to the tanks requiring major renovation due to leaks, sediment buildup, pipe corrosion, rust, mechanical damage, and exposure to the elements.

Pearl undertook to renovate the water storage tanks to ensure that the families in Qadir Karam have access to a clean, reliable water supply. The improvements to the tanks' structural integrity and water quality have reduced the need for frequent maintenance and extended the tanks' operating life, providing a sustainable solution for the community's water needs. In turn, the improvements in water quality in the town have enabled a renaissance in the village as workers and families have moved into the town, reinforcing the economy.

A Social Performance Strategy for the Next Decade

Building on Pearl's Social Performance and CSR efforts, the next decade will mark a strategic shift from primarily philanthropic, ad hoc initiatives to a more structured impact-driven approach focused on social investment. The upcoming initiatives will be embedded within a clear strategic framework and measurable performance targets.

Pillar 1

Community infrastructure, education, energy, and essential services

Improving access to essential services and strengthening human capital within operational communities.

Pillar 2

Environment, climate, agriculture, and community resilience

Strengthening environmental protection, enhancing agricultural productivity and building climate resilience in communities surrounding operations.

Pillar 3

Stakeholder engagement, governance, and social risk management

Maintaining stable operations through transparent engagement, structured consultation, and effective social risk management.

Pillar 4

Workforce development and employment

Building a skilled, localised, and inclusive workforce to support long-term socio-economic development.

Pillar 5

Monitoring, evaluation, and reporting (M&E)

Ensuring measurable impact, accountability, and transparent reporting of social performance outcomes.



The Project's Impact on the KRI Society

Highlights from two decades of Community Action Projects

Select Activities	Beneficiaries	Relevant Impact Areas
Renovation and provision of essential support items to the Sul-Orphanage and Care House	Elderly, children and juveniles in Sulaymaniyah	Standard of Living, Security and Stability, Community Cohesion
Renovation of the Chemchemal Culture Hall	Chemchemal district	Standard of Living, Human Capital
Support for people with special needs including wheelchairs, computers, and sewing machines	45 individuals with special needs	Standard of Living, Human Capital
Provision of essential food baskets and care packages	1,000 low-income individuals in Chemchemal, Shorsh, Sangaw, Takya Jabari and Qadir Karam	Standard of Living, Health and Wellbeing
Deden Primary School renovation	475 students and 33 teachers	Human Capital
Provision of new equipment and improved laboratory facilities	Students of Charmo University	Human Capital
Chemchemal Technical Institute renovation, maintenance of ACs, and supporting the establishment of the Emergency Medicine Technique department through equipment and learning material provision	Teachers and students of Chemchemal Technical Institute	Human Capital
Support for Qadir Karam Subdistrict students' transportation	18 drivers' monthly salaries, supporting 158 students' transportation	Human Capital, Standard of Living
Sul-Down Syndrome Centre support	Children with Down syndrome	Health and Wellbeing, Standard of Living
Offer a student empowerment programme to enhance educational capacity through financial scholarship and support	Students in Qadir Karam and Takya Jabari subdistricts	Human Capital, Security and Stability
Construction of a four-classroom school	Gurgayi Kak Abdulla village	Human Capital
Provision of painting and stationery items - Fine Arts Institute	More than 125 students and 26 teachers	Human Capital
Substation operators' sponsorship	Residents of Qadir Karam and surrounding villages	Standard of Living, Security and Stability
Community fuel distribution	Residents and some of the local authorities of Qadir Karam sub-district	Standard of Living, Security and Stability
Authority fuel distribution	Qadir Karam sub-district	Standard of Living, Security and Stability

Select Activities	Beneficiaries	Relevant Impact Areas
Generator repair service	Qadir Karam Asayesh Department	Safety and Security
CH Electricity Directorate purchase all-in-one PCs	Chemchemal district and surrounding areas	Human Capital
Breast Cancer Awareness - QK	847 women from Qadir Karam	Health and Wellbeing
Sponsorship of two ambulance drivers for the health centre	Residents of Qadir Karam and surrounding villages	Health and Wellbeing
Provision of equipment to the CH Kidney Centre	Residents of Chemchemal and Bazian districts	Health and Wellbeing
24-hour powerline connection for the CH Kidney Centre	Residents of Chemchemal and Bazian districts	Health and Wellbeing, Security and Stability
Emergency Centre renovation - Chemchemal	50,000 residents in the Sulaymaniyah Governorate	Health and Wellbeing
Medical equipment donation to a cancer hospital	Hiwa Cancer Hospital	Health and Wellbeing
Construction of sewerage network - Shorsh	Ajdakh Quarter residents in Shorsh Sub-district	Health and Wellbeing, Standard of Living
Bridge rehabilitation - Alyawa village	Qadir Karam and surrounding villages	Security and Stability, Standard of Living, Community Cohesion
Water pipeline repair - Chemchemal - Dukan 3rd phase	Chemchemal, Shorsh and surrounding areas.	Standard of Living, Security and Stability
Water source rehabilitation (extension) - Taza Shar	Residents of Taza Shar Village	Standard of Living, Health and Wellbeing
Purchasing 32 water valves for the Chemchemal Water Department	16,350 households in the Chemchemal district	Health and Wellbeing, Standard of Living
Provision of submersible pumps and soft starters - Chemchemal	32,000 families	Standard of Living, Health and Wellbeing, Security and Stability
Chemchemal potable water distribution	Chemchemal and Shorsh population	Standard of Living, Health and Wellbeing, Security and Stability
Water well rehabilitation - Qadir Karam	150 families in the Qadir Karam sub-district	Standard of Living, Health and Wellbeing
Water network - Qashqa village	Qashqa village	Standard of Living, Security and Stability



THE PROJECT'S IMPACT ON THE ENVIRONMENT



The KRI enjoys considerable water runoff in spring

The Project's Impact on the Environment

The Project has advanced environmental stewardship by providing a cleaner, more cost-effective alternative to diesel and fuel oil. At the same time, Pearl has reduced operational emissions through a robust digital reporting framework that captures, monitors, and reports carbon data, streamlining compliance, improving accuracy, and increasing transparency.

These avoided GHG emissions contribute to a lower Social Cost of Carbon (SCC), which reflects the monetary value of the total damages caused by carbon dioxide emissions.

Cutting emissions by displacing higher-carbon-emitting fuels
Natural gas supply displaces higher-emission liquid fuels used in power generation, which can produce up to twice the carbon emissions. This shift has significantly reduced overall emissions across the KRI.

Between 2008 and 2025, the Project helped avoid approximately 63.1m tCO_2e, corresponding to US$13.1 billion in avoided SCC. This reduction is equivalent to removing 14.7 million cars from the road for one year.

As gas supply increases, these benefits are expected to grow. Between 2026 and 2035, the displacement of liquid fuels is projected to avoid a further 128.9m tCO_2e, corresponding to US$38.9 billion in avoided SCC. This is comparable to removing 30.1 million cars from the road for one year.

One-third carbon intensity of our global peers
Gas production itself generates emissions from operations such as power generation, compression, desulphurisation, flaring, and minor leaks. Reducing these Scope 1 emissions is a key priority for Pearl.

Improvements have been achieved through operational efficiencies, enhanced maintenance practices, and the adoption of advanced technologies, including AI-driven predictive maintenance, improved measurement systems, and limited solar integration. As a result, Pearl has steadily reduced its carbon intensity—the emissions produced per unit of gas.

The culmination of these efforts was a 10% reduction in total GHG emissions in 2024. This, combined with a 5% reduction in energy consumption and lower on-site activity, resulted in an overall carbon intensity of 4.4 kg CO_2e/BOE, which is one-third of the global industry average and half that of our regional peers in the Middle East region.

Cleaner air and healthier communities
Additionally, the transition to natural gas for power generation has substantially improved air quality across the KRI, helping reduce harmful emissions associated with diesel-based electricity generation and contributing to broader health, wellbeing, and environmental benefits for local communities and households.

Becoming carbon neutral
Since 2021, Pearl has complemented its emissions reduction efforts with a carbon offset programme to achieve and maintain carbon neutrality using UN-certified carbon credits.

To ensure the effectiveness of this approach, Pearl engaged extensively with traders and consultants, selecting the most effective combination of UN-certified carbon credits at competitive prices. By investing in these high-quality carbon credits, the Project supports the development of cleaner electricity supply, while also strengthening its commitment to achieving carbon neutrality across its operations.

Reaching carbon neutrality is only the start as Pearl reinforces efforts to reduce routine flaring, minimise plant disruptions, and further lower carbon intensity, with the ambition of becoming one of the lowest carbon intensity producers in the industry.

HSSE Policy to guide continual improvement
Pearl's Health, Safety, Security, Environment and Social Performance Policy (HSSE and SP) guides the approach to safeguarding the environment as well as its long-term business strategy. The HSSE policy directs the company's actions and decisions towards operating more efficiently and reducing environmental impact where possible.

A key enabler of this has been the integration of emissions management into SAP HSSE, which strengthens data tracking, benchmarking, and governance. This system enhances the accuracy, reliability, and transparency of sustainability reporting, supporting informed decision-making and building trust with stakeholders, regulators, and partners.



Case Study:

Building a dam to enable better water management in Khor Mor

In the semi-arid plains of Iraq's Kurdistan Region, water has become an increasing challenge for communities and industry. While winter rains can be considerable, lack of storage means rainfall runs off, leaving most communities reliant on underground wells.

When engineers at the Project began planning a new road in an area where storm water routinely pooled, they saw an opportunity to tackle the problem of water runoff. Instead of simply channelling runoff away, the team designed a controlled dam beneath the roadway to capture seasonal rains and transform them into a lasting resource. The US$450,000 dam investment increased fresh water capacity by 130,000 m^3 for use at Khor Mor.

Today, the captured runoff is used for irrigation, dust suppression, and certain construction needs, helping reduce dependence on aquifers under strain.

Looking ahead, the project's architects hope the reservoir will do more than store water; plans are underway to encourage reed growth, expand tree planting, and restore surrounding vegetation, gradually reshaping the area into a modest but meaningful habitat for biodiversity.

The Project's Impact on the Environment

First 18 years (2008–2025)

63.1m tCO_2e

Avoided GHG emissions amounting to

US$13.1 bn

Social Cost of Carbon avoided

Source: Pearl Petroleum, PwC analysis

Next ten years (2026–2035)

128.9m tCO_2e

Avoided GHG emissions amounting to

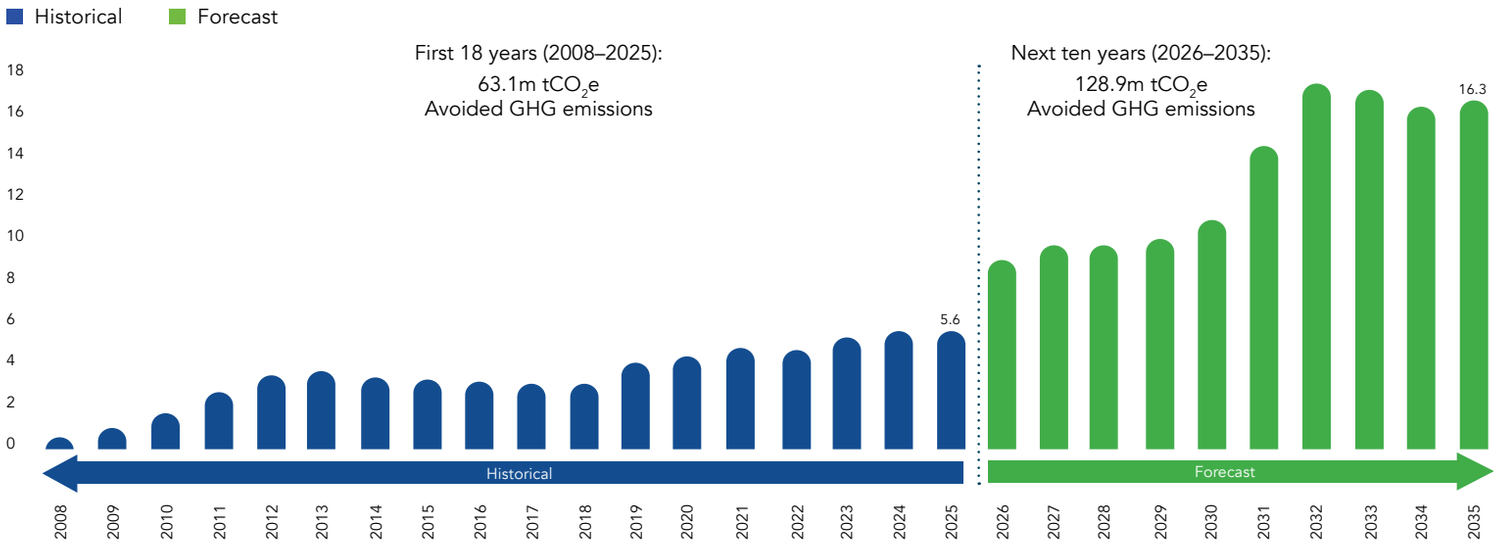
US$38.9 bn

Social Cost of Carbon avoided

Source: Pearl Petroleum, PwC analysis

Avoided GHG emissions by year

(m tCO_2e)



Source: Pearl Petroleum, PwC analysis







APPENDICES

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Appendix 1

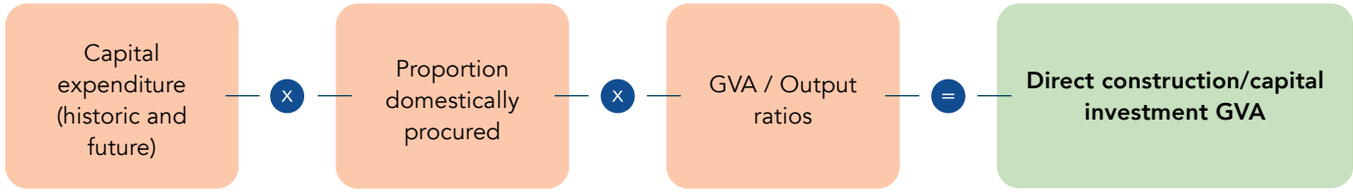
Methodology – Capital Investment Impact

Summary of approach

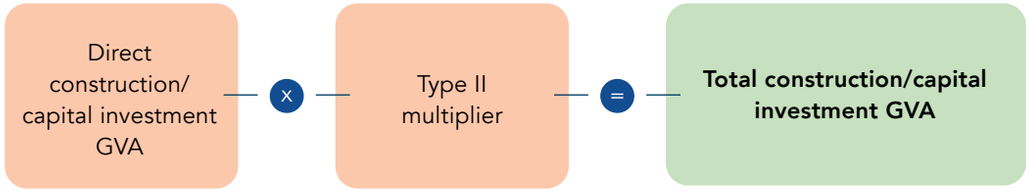
- The impact of the investment in the KRI is estimated using multipliers. The overall historic and future capital expenditure is first adjusted for the portion spent locally. Subsequently, the capital expenditure items are mapped against their relevant economic sectors.
- GVA / Output ratios were calculated using Iraq's Input-Output tables.

Simplified calculation steps

Step 1



Step 2



N.B. Whenever GDP is measured or reported at a sub-national level it is typically reported as Gross Value Added (GVA) internationally and hence presented here as GVA to be consistent with international best practice.
Source: GVA / Output ratios and economic output multipliers (type I and II) are derived from the Iraq I-O table

Appendix 2

Methodology – Operational Impact

Summary of approach

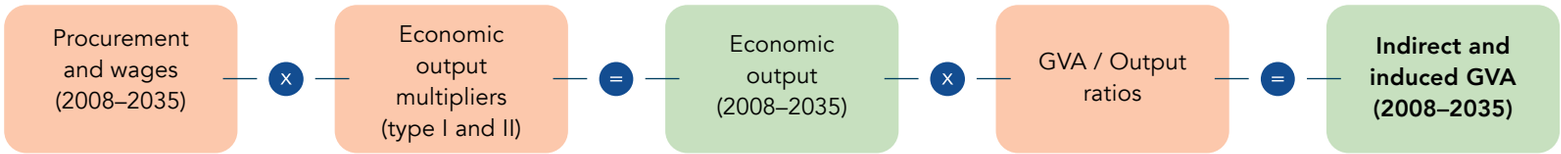
- The impact of operations is estimated by adding the direct operational, indirect supply chain, and induced household expenditure impact. Direct operational impact is estimated by adding gross profits and gross wages from historic financials and forecasts.
- The indirect and induced impacts are estimated using procurement and wage data. PwC adjusted this for expenditure with local suppliers and staff and mapped it against the relevant economic sectors. Subsequently, PwC applied type I and type II output multipliers and converted them into GVA and employment.

Simplified calculation steps

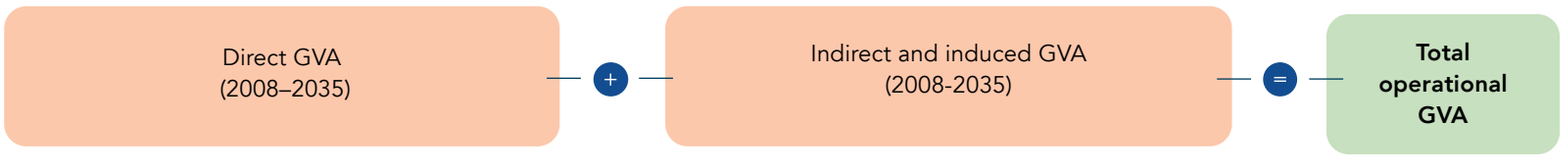
Step 1



Step 2



Step 3



N.B. Whenever GDP is measured or reported at a sub-national level it is typically reported as Gross Value Added (GVA) internationally and hence presented here as GVA to be consistent with international best practice.
Source: GVA / Output ratios and economic output multipliers (type I and II) are derived from the Iraq I-O table

Appendix 3

Methodology – Enabled Impact

Summary of approach

- Energy is a key enabler of economic activity. The increase in the supply of electricity is therefore a key stimulator of economic growth.
- To assess enabled impact, PwC first assessed the addition in baseline electricity generation, which is realised through gas offtake. For the historic period, PwC used 2008 as the baseline. For the forward-looking period, 2025 is the baseline.
- After establishing the increase in electricity generation as the baseline, PwC applied an output elasticity that describes the relationship between a change in electricity supply and GDP. This, in turn, is applied to 2025 GDP to estimate the monetary value of this enabled impact.

Simplified calculation steps

Step 1

Future gas supply MMscf × MMscf to MW conversion factor = **Future gas generation capacity in MW**

Step 2

Future gas generation capacity − Historic gas generation capacity = **Additional gas generation capacity in MW**

Step 3

Additional gas generation capacity ÷ Historic total generation capacity (2025) = **Percentage increase in generation capacity**

Step 4

Percentage increase in generation capacity × Output elasticity of electricity = **Estimated potential increase in GDP**

N.B. The output elasticity of electricity is assumed to be 0.77, meaning that for every one per cent increase in electricity supply, GDP grows by 0.77 per cent. This is the average of a number of international benchmarks, of which the lower bound is 0.4 and the upper bound is 1.2
Source: Multiple benchmarks

Appendix 4

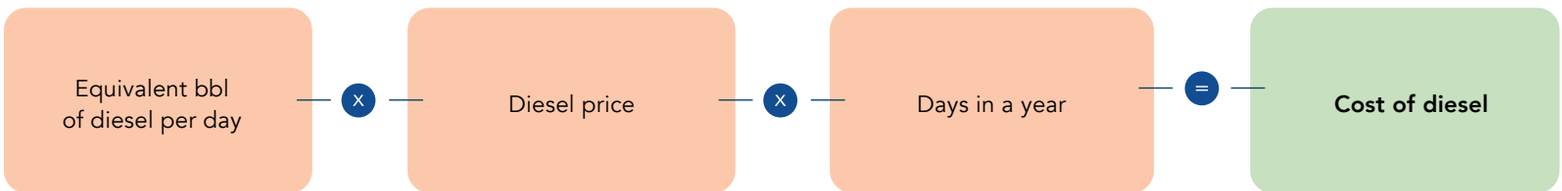
Methodology – Fuel Cost Savings

Summary of approach

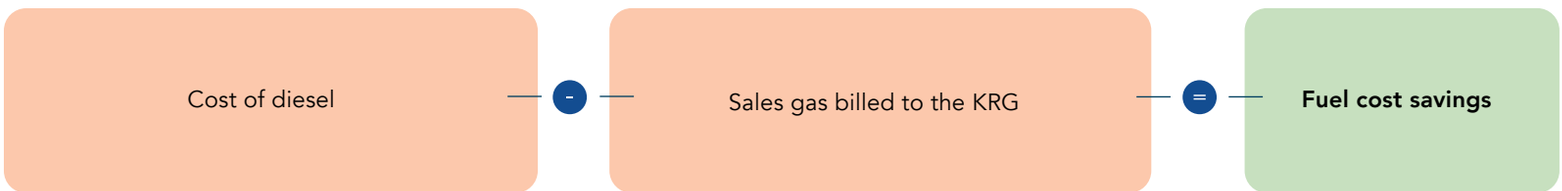
- PwC assessed fuel cost savings by comparing the cost of generating electricity using diesel with the cost of supplying sales gas to the KRG.
- The analysis focuses purely on fuel cost differentials and does not account for potential differences in capital or operating costs between technologies.

Simplified calculation steps

Step 1



Step 2



Appendix 5

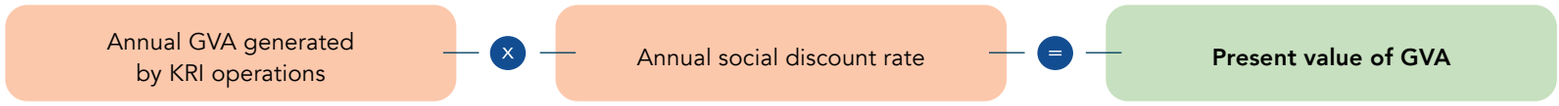
Methodology – Economic Return on Investment

Summary of approach

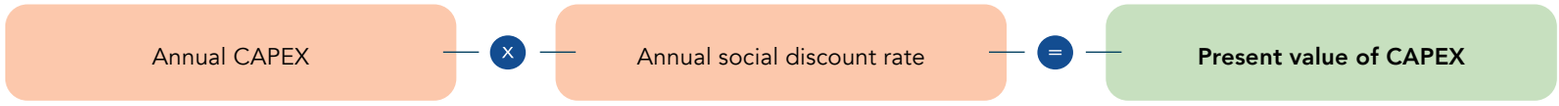
- PwC assessed this indicator as the ratio of total economic benefits to total investment costs. The total benefits are defined as the sum of historic and forward-looking contributions to GDP attributable to Pearl Petroleum's activities, encompassing investment and operational impacts. The total costs represent the Company's cumulative capital (CAPEX) and operating (OPEX) expenditures over the same period.
- For the forward-looking period, the projected GDP impacts will be discounted to present value to ensure comparability with the investment profile.
- Resulting ratio provides a clear indication of the Project's overall economic efficiency and the scale of value created for every dollar invested in KRI.

Simplified calculation steps

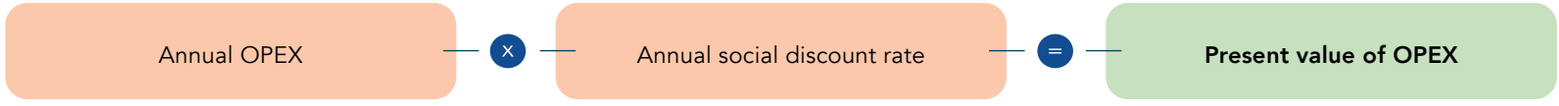
Step 1



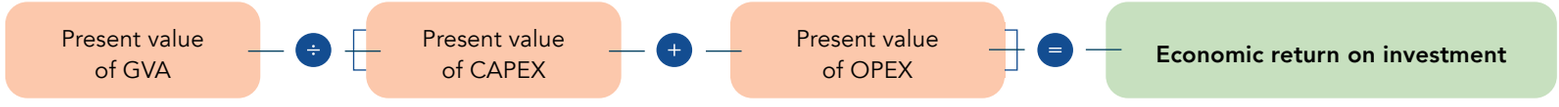
Step 2



Step 3



Step 4



N.B. A Social Discount Rate of 6% was used for calculating the present values for GDP, OPEX, and CAPEX. This is consistent with international best practice adopted by the UK Government, amongst others, and accounts for the fact that KRI is a developing region.

N.B.B. Whenever GDP is measured or reported at a sub-national level it is typically reported as Gross Value Added (GVA) internationally and hence presented here as GVA to be consistent with international best practice.

Appendix 6

Methodology – GDP Estimation

Summary of approach

- PwC estimated KRI's non-oil GDP using a two-step methodology that combines sectoral labour-based apportionment with forward-looking projections anchored in Iraq's national GDP outlook.
- PwC derived KRI GVA by sector for 2021 by calculating the ratio of KRI employment to Iraq-wide employment for each sector and applying these shares to Iraq's sectoral GVA. Summing the resulting KRI GVA across all sectors provides an estimate of total KRI GDP for the base year.
- PwC projected annual KRI non-oil GDP by applying the long-run average share of KRI's non-oil GDP to Iraq's non-oil GDP over the period where both datasets are available, using IMF forecasts for 2025–2030, with growth rates extended to 2035 in line with long-term trends.

Simplified calculation steps

Step 1

KRI employment by sector ÷ Iraq employment by sector = **Share of KRI employment by sector**

Step 2

Share of KRI employment by sector × Iraq GVA by sector = **KRI GVA by sector**

Step 3

$\sum$ KRI GVA by sector = **KRI GVA**

Step 4

KRI non-oil GDP ÷ Iraq non-oil GDP = **KRI share of Iraq Non- oil GDP**

Step 5

Average KRI share of Iraq non-oil GDP ÷ Annual Iraq non-Oil GDP = **KRI non-Oil GDP**

N.B. Whenever GDP is measured or reported at a sub-national level, it is typically reported as Gross Value Added (GVA) internationally and hence presented here as GVA to be consistent with international best practice.

Source: KRSO, Iraq CSO, World Bank, ILO, and IMF

Appendix 7

Methodology – Capital Investment Impact on Jobs

Summary of approach

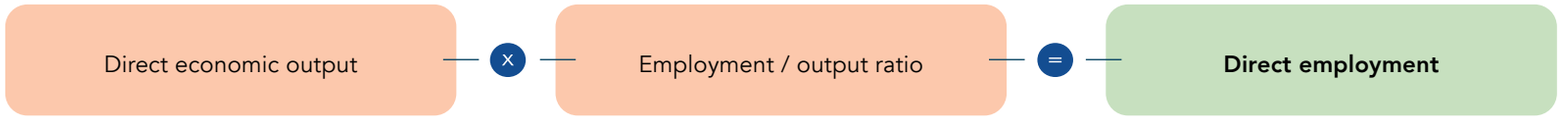
- To estimate this impact, PwC applied a multiplier-based approach linking capital expenditure to employment generation across the economy.
- The total capital investment is adjusted for the proportion of expenditure procured domestically to capture the share benefiting the local economy.
- PwC applies Type II employment multipliers to capture the wider indirect and induced employment effects throughout the supply chain and household spending.

Simplified calculation steps

Step 1



Step 2



Step 3



Source: Employment / Output ratios and economic employment multipliers (type I and II) are derived from the Iraq I-O table

Appendix 8

Methodology – Local Content

Summary of approach

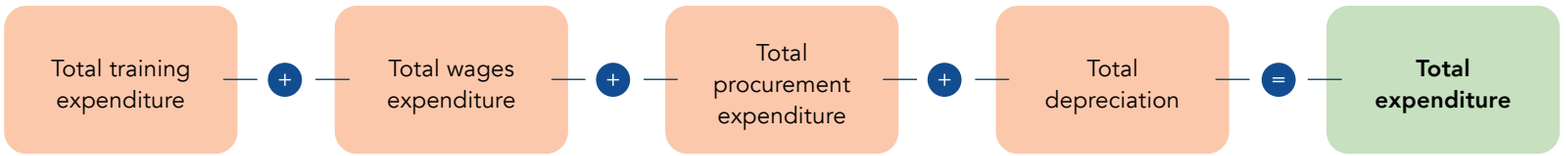
- Local content represents the share of the Project's economic activity that remains within the KRI through local employment, procurement, training, and asset utilisation.
- PwC assesses local content by quantifying the domestic component of key expenditure categories: procurement, wages, training, and depreciation.
- Local content expenditure across all categories is aggregated and the total local value is divided by total expenditure to calculate the overall local content ratio, expressed as a percentage.
- This approach allows for the measurement of local content both on an annual basis and cumulatively since inception, providing a clear view of how Pearl Petroleum's operations have contributed to the development of the local economy over time.

Simplified calculation steps

Step 1



Step 2



Step 3



Appendix 9

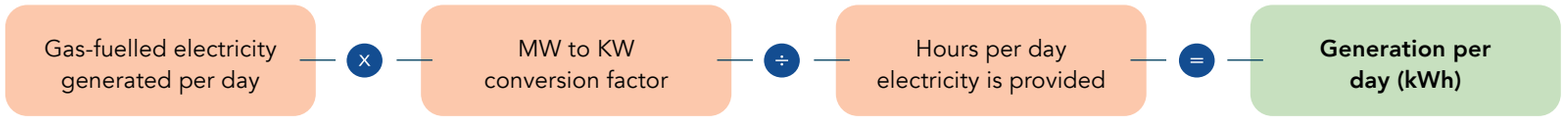
Methodology – Carbon Savings

Summary of approach

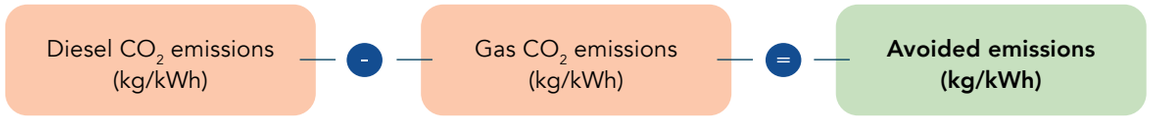
- PwC assessed carbon savings by comparing the greenhouse gas emissions associated with generating historic and estimated future generation by diesel instead of gas.
- The current gas capacity is converted into its equivalent of barrels of diesel. The footprint of an all-diesel system is assessed by applying the relevant emissions factors for both diesel and gas. The difference between these two is considered the carbon savings resulting from running the electricity system on gas.

Simplified calculation steps

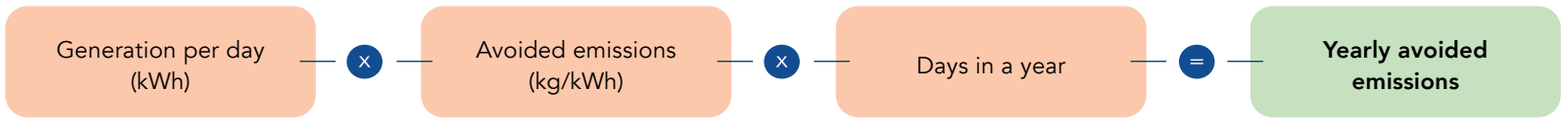
Step 1



Step 2



Step 3



Step 4



Source: International Foundation for Valuing Impacts (IFVI), Multiple Benchmarks



Appendix 10

List of acronyms

Abbreviation	Meaning
bn	Billion
BOE	Barrels of Oil Equivalent
bpd	Barrels per Day
CAP	Community Action Programme
CAPEX	Capital Expenditure
CO_2e	Carbon Dioxide Equivalent
CSR	Corporate Social Responsibility
DFC	Development Finance Corporation
E&I	Electrical and Instrumentation
FTE	Full Time Equivalent
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GVA	Gross Value Added
HSE	Health, Safety and Environment
HSSE	Health, Safety, Security and Environment
IFVI	International Foundation for Valuing Impacts
ILO	International Labour Organization
kg/BOE	Kilograms/Barrels of Oil Equivalent
KM250 Plant	Khor Mor 250 Plant
KPI	Key Performance Indicator
KRG	Kurdistan Regional Government
KRI	Kurdistan Region of Iraq

Abbreviation	Meaning
KRSO	Kurdistan Regional Statistics Office
LPG	Liquefied Petroleum Gas
LTI	Lost Time Injury
m	Million
m^2	Metres Squared
m^3	Metres Cubed
M&E	Monitoring, Evaluation, and Reporting
MMscf	Million Standard Cubic Feet
MMscfd	Million Standard Cubic Feet per Day
tCO_2e	Metric Tonnes of Carbon Dioxide Equivalent
MW	Megawatt
OPEX	Operating Expenditures
SAP	Systems, Applications, and Products in Data Processing
SCC	Social Cost of Carbon
SDG / SDGs	Sustainable Development Goals
SMEs	Small- and Medium-Sized Enterprises
STEM	Science, Technology, Engineering, Mathematics
tpd	Tonnes per Day

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