



DENHAM INTERNATIONAL  
POWER FUND

# IMPACT REPORT 2019







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# 1

## INTRODUCTION

In 2018, we released our first impact report defining the way in which we integrate ESG in the investment cycle. The report highlighted our position that ESG can have a material impact on investments, by delivering projects on time and at costs, and with community support. By developing projects to international standards, such as the World Bank's IFC Performance Standards, our investments not only comply with international environmental and social standards, but also make our investments highly marketable.

Our investment strategy is not only about ESG management; it has substantive impact by providing low-cost affordable power to economies that are growing rapidly, CO2 savings, employment generation and local impacts through community related projects. All these impacts have a clear alignment with several of the United Nations Sustainable Development Goals (SDGs).

The focus of this year's report is not on ESG but on Impact. This report focuses on the metrics that are applicable to our investment strategy, our reporting framework and transparency over our calculation methodology.

### WORKING WITH OUR PORTFOLIO COMPANIES

The Denham International Power Fund owns five portfolio companies, each covering a specific geography or technology. Each portfolio company has an ESG team to manage on the ground ESG programs including the development of community related projects.

**THEMIS**

HEADQUARTERS Casablanca, Morocco

TARGET MARKETS Select Countries in Africa

SECTOR International Power

**NEXIF ENERGY**

HEADQUARTERS Singapore

TARGET MARKETS Southeast Asia

SECTOR International Power

WEBSITE [www.nexifenergy.com](http://www.nexifenergy.com)

**RIO ENERGY**

HEADQUARTERS Rio de Janeiro, Brazil

TARGET MARKETS Brazil

SECTOR International Power

WEBSITE [www.rioenergyllc.com](http://www.rioenergyllc.com)

**JENNER RENEWABLES**

HEADQUARTERS Madrid, Spain

TARGET MARKETS Select Countries In Latin America

SECTOR International Power

WEBSITE [www.jenner-renewables.com](http://www.jenner-renewables.com)

**CEIBA ENERGY**

HEADQUARTERS Houston

TARGET MARKETS Latin America

SECTOR International Power

### MOVING FROM ESG TO IMPACT

#### MINIMIZING ESG RISK



#### MAXIMIZING IMPACT



# 2 MEASURING WHAT MATTERS

Denham Power invests in renewables and gas-fired power projects in high-growth economies. We believe that gas-fired power projects have a role to play in providing base-load power in these economies, and are often a cleaner substitute to business as usual. Our platform companies that develop these projects also typically invest in local community development (for example, in education, healthcare and women empowerment programs).

Our impact metrics track the following 5 areas:

- 1 PROVIDING LOW-COST AFFORDABLE POWER**

We invest in renewables and gas-fired power projects which has a direct alignment with UN SDG 7, ensuring access to affordable, reliable, sustainable and modern energy for all. Access to competitively priced power is a major enabler of industrial and economic growth and improvement in living standards, in particular in economies experiencing growth. Low cost power is essential for the provision of healthcare, education, manufacturing and commerce.
- 2 CLIMATE CHANGE IMPACT**

More than ever, our society and the financial markets are concerned by the risks and impact of climate change. Investors, such as pension funds, are being asked about their climate change strategy. The Task Force on Climate Related Disclosure (TCFD) run by the Financial Stability Board and chaired by Mike Bloomberg asks investors to disclose their exposure to climate change and to run scenario analysis. By generating CO2 savings, our investments have a natural fit to investors appetite for transitioning towards a low-carbon economy.
- 3 EMPLOYMENT**

The construction and operation of projects results in the creation of jobs, which in turn helps to raise living standards. Whilst a majority of employment is short-term in nature, the operations and maintenance (O&M) phase results in long-term employment. Where possible, we encourage the use of a local labor force as much as possible in both the construction and O&M phases. We require all our portfolio companies to protect labor rights and promote a safe and secure working environment by following standards such as the ILO Core Labor Standards and ILO Basic Terms and Conditions of Work, as well as the International Bill of Human Rights. This contributes to UN SDG 8: Decent Work and Economic Growth.
- 4 COMMUNITY IMPACT**

Whenever we invest in a project, we also invest in the local community. This not only provides a “social license” to operate, but we believe it is the right thing to do. Engagement with communities takes place to identify specific needs of the community, and these are invariable linked to the SDGs. Projects generally relate to improved healthcare, educational projects and training.
- 5 FINANCIAL LEVERAGE**

Public and/or private debt and equity investors attracted to our projects as a result of Denham’s involvement and investment. This may include domestic and foreign commercial finance and also development finance institution funding. This demonstrates Denham’s role as a catalyst for other investors.

# 3 METRIC TRANSPARENCY

To be considered an impact metric, we select metrics that are trackable, measurable and reportable.

We see our proprietary impact metric database as continuous work in progress, as we seek to capture relevant and improved data from each investment. Below is a summary of key impact metrics recorded. Actual data is provided to our investors. We provide metrics on a net ownership basis – reflecting the impact from our ownership in an investment.

KEY IMPACTS			IMPACT INDICATOR
PROVIDING LOW-COST AFFORDABLE POWER		SDG 7 Affordable and Clean Energy	Installed capacity (MW) (of which renewables)  Energy generated (MWh) (of which renewables)
CLIMATE CHANGE IMPACT		SDG 7 Affordable and Clean Energy	CO2 savings (tCO2/ year)
EMPLOYMENT		SDG 8 Decent Work and Economic Growth	Ensuring labor standards follow international standards
Providing safe working conditions in countries			
Providing employment opportunities		SDG 8 Decent Work and Economic Growth	Peak number of direct jobs (male/ female)  Peak number of indirect jobs (male/ female)
COMMUNITY IMPACT		Multiple SDGs	Total amount on \$ spent on community related projects  Project specific metrics <ul style="list-style-type: none"> <li>• Women empowerment programs</li> <li>• Number of people provided improved medical care</li> <li>• Number of people provided training</li> </ul>
FINANCIAL LEVERAGE		Multiplier effect due to our investment	Debt and co-investment as a result of Denham’s investment (US\$m)

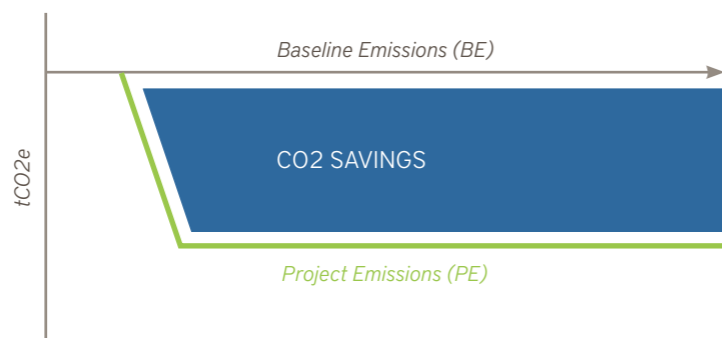
# 4 STATEMENT METHODOLOGY

The purpose of this statement methodology is to provide transparency over how we calculate our impact metrics for assets either under construction or in operation.

## CALCULATING CO2 SAVINGS

In calculating CO2 emission for renewables, we use the IFI Approach to *GHG Accounting for Renewable Energy Projects*<sup>1</sup>. This approach was agreed by a number of International Finance Institutions, including the European Investment Bank (EIB), the African Development Bank (AfDB), the International Finance Corporation (IFC) and the World Bank to ensure a consistent approach in calculating CO2 savings. We also use guidance from IFC's *Greenhouse Gas Reduction Accounting Guidance for Climate-Related Projects*<sup>2</sup>.

CO2 savings are calculated to a baseline scenario. In other words, CO2 savings is the difference between Baseline Emissions (BE) and Project Emissions (PE).



To calculate the baseline emissions, the Combined Margin (CM) of a country needs to be calculated. This is derived from the Build Margin and Operating Margin of the electricity system of the country. Countries with an electricity system which is heavily reliant on fossil-fuels will have a higher CM than countries with an electricity system which has a strong renewable share.

The approach to calculate CO2 savings is based on the following assumptions:

- Renewable energy generation projects such as wind, solar and run-of-river hydro are considered inherently additional with no Scope 3 emissions
- For solar and wind generation, the combined margin is as follows:

$$CM = [0.75 \times \text{Operating Margin (OM)}] + [0.25 \times \text{Build Margin (BM)}]$$

For run-of-river hydro power projects, the combined margin is calculated as follows:

$$CM = [0.50 \times \text{Operating Margin (OM)}] + [0.50 \times \text{Build Margin (BM)}]$$

The IFIC (interim) Dataset of Harmonized Grid Factors provides data for the Combined Margin for a number of countries

- Hydro power projects above 10MW need to include reservoir emissions to balance the estimated CO2 savings. For hydropower projects we use, where available, the CO2 calculations from the Environmental and Social Impact Assessments, which take into account potential greenhouse gas emissions related to reservoir methane emissions
- Construction emissions for renewable energy projects may be excluded

<sup>1</sup> <http://documents.worldbank.org/curated/en/758831468197412195/pdf/101532-WP-P143154-PUBLIC-Box394816B-Joint-IFI-RE-GHG-Accounting-Approach-clean-final-11-30.pdf>

<sup>2</sup> <https://www.ifc.org/wps/connect/21d21b80423bdbf19f39bf0dc33b630b/IFC+GHG+Reduction+Accounting+Guidance.pdf?MOD=AJPERES>

## EXAMPLE: A NEW WIND ENERGY POWER PROJECT IN MEXICO IS EXPECTED TO GENERATE 724 GWH OF CLEAN ENERGY ANNUALLY.

Absolute emissions:

Wind and solar power projects avoid fossil fuel usage and result in CO2 savings. The absolute emissions associated with production of electricity from these sources are therefore assumed to be zero.

Baseline emissions:

We compare this to the "business as usual" scenario, where the 724 GWh of energy would have been generated by each unity of electricity produced in an electricity system.

In the case of Mexico with a CM of 0.503, the CO2 savings are calculated as follows:

$$Be = (724 \times 0.503) \times 1000 = 364,172 \text{ tonnes of CO2e/year}$$

CO2 savings:

$$Be = 364,172 \text{ tonnes of CO2e/year}$$

For gas-fired power projects, we use EIB's Methodologies for the Assessment of Project Greenhouse Gas Emissions and Emission Variations<sup>3</sup> to calculate the potential CO2 savings.

This methodology calculates the difference between the country's CM and the technology's emission factor. Where a country's energy mix is reliant on fossil fuels for electricity generation, the country's CM will be high and an efficient gas project with a lower carbon intensity will result in CO2 savings compared to business as usual. Where the project's CO2 emission factor is not available (due to the stage in project development), the default efficiency factors for power plants published by the United Nations Framework on Climate Change (UNFCCC) is used.

## EXAMPLE: A NEW COMBINED-CYCLE NATURAL GAS-FIRED POWER PROJECT IN NIGERIA, EXPECTED TO GENERATE 4,185GWH OF ELECTRICITY ANNUALLY.

Absolute emissions:

The resulting CO2 emissions are estimated to be 0.335 g/kWh, based on plant efficiency of 60% and the default emission factor for natural gas of 56,155 gCO2e. TJ. The absolute emissions are:

$$Ab = (4185 \times 0.335) \times 1000 = 1,401,975$$

Baseline emissions:

Nigerian energy demand growth is more than 5%, therefore the ratio for the Operating Margin and Build Margin are 25%, 75% respectively. As per the IFC Dataset, the CM of Nigeria is 0.474. g/kWh. The baseline emissions are:

$$Be = (4,185 \times 0.474) \times 1000 = 1,983,690$$

CO2 savings:

This project compared to the baseline scenario is expected to result in CO2 savings as calculated below:

$$CO2 \text{ savings} = Be - Ab$$

$$CO2 \text{ savings} = 1,983,690 - 1,401,975$$

$$CO2 \text{ savings} = 581,715 \text{ tonnes of CO2e/ year}$$

<sup>3</sup> [https://www.eib.org/attachments/strategies/eib\\_project\\_carbon\\_footprint\\_methodologies\\_en.pdf](https://www.eib.org/attachments/strategies/eib_project_carbon_footprint_methodologies_en.pdf)

# 4

## STATEMENT METHODOLOGY (Continued)

### LABOUR STANDARDS

We will provide a qualitative summary on work done to ensure labour standards follow international standards. Where possible, we will provide key performance indicators, such as number of trainings completed.

### PEAK NUMBER OF DIRECT/ INDIRECT JOBS

This is provided by our portfolio companies on an annual basis. We also track the male/female breakdown.

### LOCAL COMMUNITY IMPACT

We have an internal database which is updated on a regular basis which tracks investment made on each community related project and expected outreach.

### FINANCIAL LEVERAGE

This is provided by the investment team.

### CALCULATING NUMBER OF INDIVIDUALS POWERED

This is calculated by dividing the annual actual/ expected electricity generation delivered to off takers by the average annual electricity consumption in that country. We use data sources from the World Bank which provide per capita electricity consumption.

We recognize the limitations of this data metric as it is difficult to calculate the number of actual new households powered by an investment as our project sells electricity to the grid under a power purchase agreement. Our portfolio companies will not have the data defining who is getting electrified from their specific project. Our peers, including development finance institutions, currently use the same methodology for this calculation. We are engaging with the wider industry to see how this metric can be made more robust. For the time being, although we calculate this number, we do not use it as an official metric.

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