

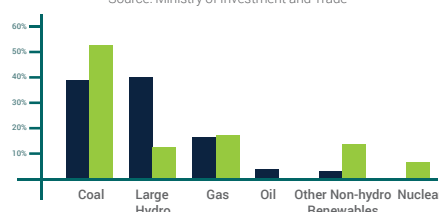
# Ninh Thuan Solar Power Project

## Context

Vietnam's energy demand is increasing at approximately **10% per annum** in line with the needs of its fast-growing economy. As hydropower is becoming more scarce, the government is committed to shifting the energy mix towards non-hydro renewables, with a target for solar power to represent **3.3% of national power output by 2030**.

Through a joint venture company, InfraCo Asia supported the development and implementation of Sunseap International Pte Ltd's (Sunseap) first solar project in Vietnam – one of the country's largest utility-scale solar farms.

Vietnam Electricity Generation by Source (2018 vs 2030)  
Source: Ministry of Investment and Trade



Vietnam's  
Shifting  
Energy Mix

■ 2018  
■ 2030



**168MWp** utility-scale solar farm  
located in Ninh Thuan Province, Vietnam

- Achieved commercial operation date (COD) on 15 June 2019
- Power generated is sold to national utility company Electricity Vietnam (EVN) at a feed-in tariff of USD 9.35 cents per kilowatt hour
- The project provides power to up to 192,000 people in the country

## What InfraCo Asia Did

InfraCo Asia Development (IASD) provided **US\$10.6m** development equity, while InfraCo Asia Investments (IASI) provided a **US\$9m** loan facility to enable the financial closing of a **US\$176m** solar power project.

Previous efforts to secure financing for the Ninh Thuan Solar Power project were unsuccessful due to negative country risks assessments and concerns about the bankability of solar power purchase agreements (PPAs) in Vietnam.

**US\$19.6m**  
InfraCo Asia

**US\$176m**  
Total  
Project Cost

InfraCo Asia shortlisted the project in 2017 with the intention to use its development expertise in Vietnam and funding to assist Sunseap in overcoming the difficulties faced with raising development capital from the market and sharing the development risk.

InfraCo Asia's participation facilitated the raising of limited recourse project financing from an offshore commercial bank. Along with InfraCo Asia's provision of development equity and a loan facility, this enabled the project to reach financial close in November 2018, entirely funded by foreign debt and equity.

Project construction was completed ahead of schedule and commenced commercial operations on 15 June 2019.

“Developing the Ninh Thuan Solar Power project in partnership with Sunseap supports InfraCo Asia's aim to serve as a catalyst for future infrastructure development in the countries and sectors in which we work. We hope this project will serve as a benchmark for future investors, demonstrating the commercial viability, development impact, and environmental benefits that can be achieved.” — Allard Nooy, CEO, InfraCo Asia

## About PIDG

Since 2002, the Private Infrastructure Development Group (PIDG) has supported 183 infrastructure projects to financial close and provided 243 million people with access to new or improved infrastructure. PIDG is funded by six governments (the UK, the Netherlands, Switzerland, Australia, Sweden, Germany) and the IFC.

## Development Impact



**240,000**  
tonnes carbon emissions  
reduced per annum



**192,000**  
people will benefit from the power  
generated by the solar farm



**2000** short-term jobs  
created in **Construction**

**30** long-term jobs  
created in **Operation**

## Environment & Community

The Ninh Thuan Solar Power project has been developed to world-class environmental standards.

The Ninh Thuan Solar Power project company also invested in improving quality of life for the people living around the site. The project company funded construction of concrete roads surrounding the site along Phu Thuan Hamlet and Tan My Hamlet, My Son Commune, Ninh Son District. The roads, which are more than two kilometres long, help improve connectivity for the province, especially for the local farmers who rely on them to transport their agricultural produce.

### About InfraCo Asia

InfraCo Asia Development Pte Ltd (InfraCo Asia) is a commercially managed infrastructure development and investment company of the Private Infrastructure Development Group (PIDG). InfraCo Asia receives funding from the governments of the United Kingdom, the Netherlands, Switzerland, and Australia.



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“ The Ninh Thuan Solar Power project is Sunseap’s first foray in Vietnam and affirms our mission to develop affordable and reliable solar energy solutions that benefit communities while saving the environment.

We are delighted to work with InfraCo Asia – the team’s professionalism, infrastructure development, project financing and in-country expertise have been instrumental to get to successful project implementation.

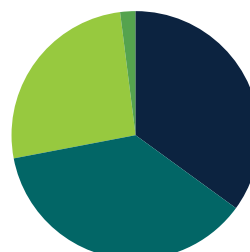
**Frank Phuan and Lawrence Wu**  
*Co-Founders, Sunseap Group*

# Coc San Hydropower Project

## Context

Electricity demand in Vietnam is growing at approximately **10% per annum**, and the country is committed to developing generation of renewable energy and establishing a competitive electricity market.

InfraCo Asia **divested its shareholding** in the Coc San Hydropower project to TEPCO in November 2018, successfully completing a full cycle of developing, investing in, bringing to commercial operation and fully exiting the projects



Vietnam Power Profile 2016

- **35%** Hydro
- **37%** Coal-fired
- **26%** Gas
- **2%** Others



**29.7MW** run-of-river plant located in Lao Cai Province, Vietnam.

- First foreign direct investment in hydropower in Lao Cai Province
- Part of Provincial Power Development Plan aiming to reach 1,000 MW by 2020.

## What InfraCo Asia Did

By providing development expertise and funding of **US\$7.5m**, InfraCo Asia enabled the financing and completion of a **US\$44.5m** hydropower project.

Early work in the Coc San project stalled in 2011 when initial capital was expended and the project company was unsuccessful in securing long-term debt financing.

**US\$7.5m**  
InfraCo Asia

**US\$44.5m**  
Total  
Project Value

InfraCo Asia shortlisted the project in 2012 and used its capability and funding to overcome the project company's difficulty in securing financing and address due diligence and safeguard issues that were exacerbated by adverse macroeconomic issues.



InfraCo Asia took a majority stake in LCRE through its then-wholly-owned subsidiary, Viet Hydro Pte. Ltd., and led the development of the project through to financial close in December 2014 and commercial operation in April 2016.



InfraCo Asia divested its shareholding in the Coc San Hydropower Project to TEPCO in November 2018.



Exiting the Coc San project with a positive return supports the success of InfraCo Asia's unique business model and allows funds to be recycled into future infrastructure projects in south and south east Asia's frontier markets. — Allard Nooy, CEO, InfraCo Asia



InfraCo Asia is part of  
the Private Infrastructure  
Development Group

## PIDG support

InfraCo Asia is a company of the Private Infrastructure Development Group (PIDG). PIDG's Technical Assistance Facility (TAF) allocated a one-off grant of US\$5m as viability gap funding. PIDG Company InfraCo Asia Investments contributed US\$10m at financial close. All PIDG funding was provided through Viet Hydro Pte. Ltd.



## Development Impact



**87,000**  
people benefit from reliable  
and affordable power supply



**76,000**  
tonnes carbon emissions  
reduced per annum

Iron | Mining | Copper  
Fertiliser from Apatite Mines

**Expansion**  
of industries



**298** short-term jobs created in  
**Construction**  
Over **30** long-term jobs  
sustained in **Operation**

## Environment & Community

Environmental studies carried out to World Bank standards have ensured the impact of the Coc San project – which is set amid beautiful terraced rice paddies – has been minimal. Little land has been lost by surrounding communities, and there has been no displacement of people. The project company, supported by its shareholders, has implemented two programmes to support local people.

### Community Development Programme

has achieved rehabilitation of three schools and the construction of an access road, enabling easier movement of farm produce. Scholarships continue to be provided to enable children to attend school and purchase books and uniforms.

### Livelihoods Restoration Programme

is designed to assist people whose land was impacted by the project to reinstate income-producing activities. This has included the provision of training in construction along with a project to improve crop yields, with support from local agricultural departments. The cropping has been so successful in improving income that participating households are continuing this program at their own cost. Provision of training and breeding sows and goats has also been implemented and is ongoing.

InfraCo Asia receives funding from the governments of the United Kingdom, the Netherlands, Switzerland, and Australia.



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“ We will benefit due to increased electricity reliability, which will support Industrial Zone developments and attract investments in mineral processing facilities to support existing mining projects.

**Doan Van Huong**  
*Former Chairman of the Lao Cai Provincial Peoples Committee*



# Pakistan

## Metro Wind & Gul Ahmed Wind Power Projects

InfraCo Asia **divested its shareholding** in the Metro and Gul Ahmed wind power projects to Daelim Energy in **September 2017**, successfully completing a full cycle of developing, investing in, bringing to commercial operation, and fully exiting the projects.

### Context

The power capacity shortfall in Pakistan is more than **5,000 MW** – about one-third of the total demand on the electricity system. Load shedding is persistent, with the public going without power for more than 9 to 10 hours per day in some cities and around 16 to 18 hours per day in many rural areas. Recent studies estimate that the country has been losing **2-3% of its GDP** due to power shortages.

The Government of Pakistan has been actively promoting the development of renewable energy as a sustainable solution to its energy requirements.

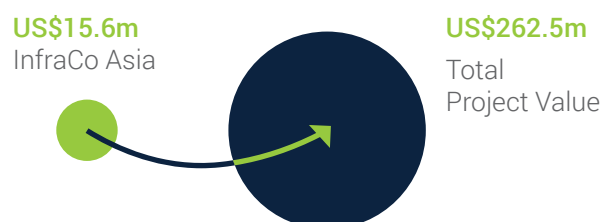


- Two 50MW wind power plants, 20 turbines each
- Generating an additional **155.5GWh** of electricity per year
- Among the earliest developments in Pakistan's renewables sector

### What InfraCo Asia Did

By providing total combined funding of **US\$15.6m** towards development costs, InfraCo Asia supported the financing and completion of two 50MW wind power projects with a combined total project cost of **US\$262.5m**. The Metro Wind and Gul Ahmed Wind Power Projects are the first project-financed wind deals in Pakistan.

The Metro Wind and Gul Ahmed Wind Power Projects lie in Sindh Province in Pakistan's Jhimpir Wind Corridor, the same corridor that extends up to India, where over **2300 MW** of wind power generation capacity is installed.



In 2012, InfraCo Asia began to develop the Metro Wind and Gul Ahmed Wind Power projects jointly with local sponsors, the Alimohamed Family (Metro Wind) and Gul Ahmed Energy (Gul Ahmed Wind).

InfraCo Asia provided development-stage leadership, capital and expertise. In particular, this involved leading the efforts to raise non-recourse debt financing from development finance institutions and commercial banks

for the projects. The combined total project costs were funded through Sponsor Equity and domestic and foreign debt and equity, including support from the International Finance Corporation (as a lender and equity shareholder).

The Metro Wind and Gul Ahmed Wind projects became operational in September and October 2016 respectively. InfraCo Asia divested its shareholding in the projects to Daelim Energy in September 2017.

## Combined Development Impact



**180,000**  
tonnes of carbon emissions  
reduced jointly per annum



approximately **700,000** people have  
better access to electricity, including  
almost **90,000** people who live below  
the poverty line



**674** short-term jobs created in  
**Construction**  
**52** long-term jobs sustained in  
**Operation**

## Environment & Community

The Metro Wind and Gul Ahmed Wind projects have been developed to world-class environmental standards.

The Metro Wind project company also invested in improving quality of life for a village of around 200 people which is located within the project site. Adults from the village received training and employment throughout project construction, and now in operation, with the potential to hold employment positions in operation. The project company has also built water wells, pumps and a school where children are educated in a unique coeducational setting.

InfraCo Asia receives funding from the governments of the United Kingdom, the Netherlands, Switzerland, and Australia.



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Our management team together with InfraCo Asia has played an instrumental and a very positive role in developing both wind projects and I on behalf of my entire team, congratulate InfraCo Asia for their relentless support and look forward to working with them in the future.

**Mr Iqbal Alimohamed**

Chairman, Metro Power Company Ltd  
and Gul Ahmed Wind Power Ltd



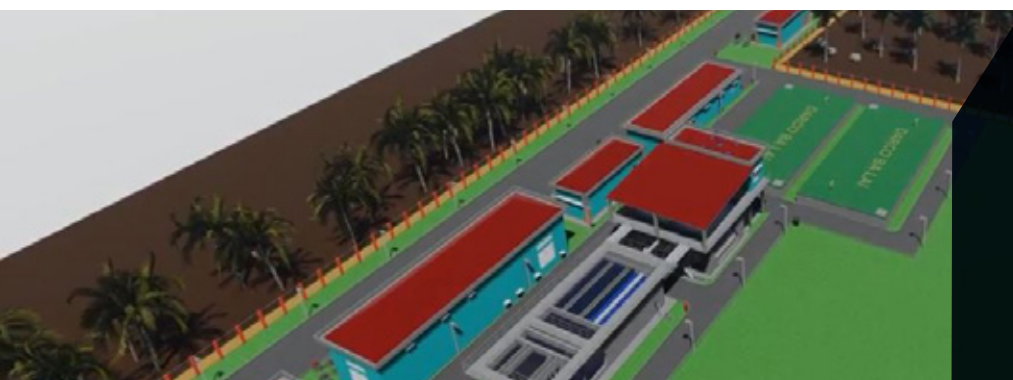
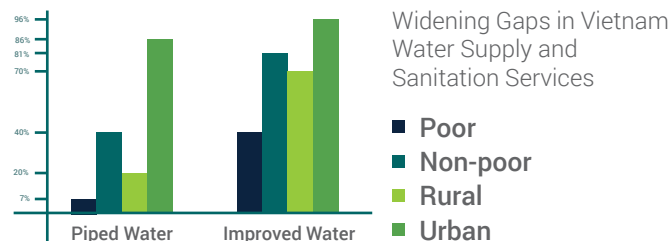


# Ba Lai Water Supply Project

## Context

To meet the growing needs of the population, water supply and sanitation projects in Vietnam require more investment – with only US\$1.0bn of the required **US\$2.7bn** invested annually. Both increased effectiveness and more innovative financing are needed to close the gaps in the financing and provision of water supply and sanitation services.

Through a joint venture company, Darco Water Technologies Ltd. (DWT) and InfraCo Asia Development Pte. Ltd. (IASD) are supporting the development and implementation of a portfolio of water supply projects in Vietnam. The Ba Lai Water Supply Project is the first within this portfolio.



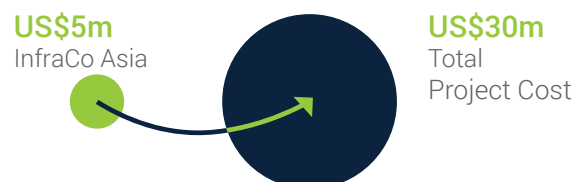
**15,000m<sup>3</sup>** retail water supply project to be built in Ben Tre Province, Vietnam in multiple phases

- In the first phase, around 100,000 people in Ba Tri District are expected to benefit from clean water supply piped to their households.
- Water tariffs set in agreement with the provincial government will make clean water significantly more affordable

## What InfraCo Asia Will Do

By providing development expertise and funding of **~US\$5m**, InfraCo Asia aims to catalyse the financing and completion of a portfolio of water supply projects costing **~US\$30m**.

In 2017, InfraCo Asia entered into an agreement with DWT to co-develop the Vietnam Water Supply Portfolio, as DWT could not fund the development on its own or raise sufficient development capital from the market.



InfraCo Asia shortlisted the portfolio with the objectives of using its development expertise to help develop the project to international standards. As there is no precedent for water supply project financing in Vietnam, the Ba Lai project could help set the path for future project financing in the subsequent phases of development.

The project will employ a more efficient design than the current system of water extraction. This reduces the labour involved in water collection, typically bore by women and children.

InfraCo Asia will complement Darco Water's water treatment expertise, ensuring that the water supply project will follow IFC performance standards with respect to its environmental and social management plans, raising standards for environmental, social, health and safety considerations.

“ InfraCo Asia aims to serve as a catalyst for future development in Vietnam's water sector. With Darco's expertise in developing water supply systems and Dr Dao's long-standing commitment to creating infrastructure for the people of Vietnam, we are well-positioned to bring a project to life that will inspire other firms to invest in the development of the country's clean water supply. — Allard Nooy, CEO, InfraCo Asia

## PIDG support

InfraCo Asia is a company of the Private Infrastructure Development Group (PIDG). PIDG's Technical Assistance Facility (TAF) allocated a grant of US\$350,000 to provide capacity building and on-the-job support via the engagement of a Technical Advisor for the portfolio of water supply projects.

## Development Impact



**100,000**

people will benefit from improved access to an affordable and clean water supply in the first phase, as per IFC Environmental, Health, and Safety (EHS) Guidelines



Water tariffs from the project will be around **3X** more affordable than treated bottled water, the current main source of clean water



**~80%** risk reduction of contracting diseases for end users, by reducing reliance on polluted water



Over **10** long-term jobs sustained in **Operations**

## About InfraCo Asia

InfraCo Asia Development Pte Ltd (InfraCo Asia) is a commercially managed infrastructure development and investment company of the Private Infrastructure Development Group (PIDG). InfraCo Asia receives funding from the governments of the United Kingdom, the Netherlands, Switzerland, and Australia.

### About Darco Water Technologies

Established in 1999 and listed on SGX in 2002, Darco Water Technologies designs and delivers engineered solutions for water and wastewater systems for industrial and municipal customers. Its core management team has more than 19 years of experience in water treatment for a wide range of industries. Its markets include Mainland China and Southeast Asia.

### About Dr Dao Dinh Minh

Dr Dao Dinh Minh chairs the Board of Directors of various Vietnamese companies in the water supply sector and has held advisory positions with listed companies in Singapore including Keppel Corp, ST Engineering and Demem. He holds a PhD in Business Administration (University of Georgia) and is a central member of the Vietnam Peace and Development Foundation.



Ministry of Foreign Affairs of the Netherlands



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Darco Water Technologies

“ Ba Tri District is one of the districts most lacking in clean water supply in Ben Tre Province. The local community is in great anticipation of the services that the Ba Lai water supply project will bring. Not only will it alleviate the burden of water collection and rationing, it will also free up energy and resources for more economically productive activities.

**Mr. Cao Van Trong**

*Chairman of People's Committee,  
Ben Tre Province*

