

# ENERGY

CLEAN, AFFORDABLE, AND EFFICIENT



SCALE UP ACCESS TO RENEWABLE AND EFFICIENT ENERGY FOR ALL

## THE CHALLENGE



India is set to contribute **1/4<sup>th</sup> of the projected rise in global energy demand by 2040**



India is the **4<sup>th</sup> largest greenhouse gas emitter** after China, USA, and EU



Energy use in India has almost doubled since 2000, but **energy consumption per capita is one third of the global average**



237 million Indians have **no access to energy**



In his budget speech, **Hon'ble Finance Minister stated that 100% village electrification will be achieved by May 2018**. However, the current definition of village electrification requires only 10% of households to be electrified, implying that the **number of Indians with no or limited access to electricity is still significant**

## THE OPPORTUNITY



**Annual investments in solar could surpass investments in coal by 2019-20**, with US\$35 billion committed by global players



By **2020, solar energy could be cheaper than coal**



When **renewable energy use is doubled, global GDP is expected to increase** up to US\$1.3 trillion



Energy access market (through only decentralized renewable energy, DRE) in India is estimated at US\$400 million by 2018



**Market-based approaches to unlock energy efficiency opportunities** are estimated to be worth more than US\$11 billion

### Government Initiatives

- India has committed to boost renewable energy capacity to 40% by 2030 and ensure that 40% of electricity requirement will be met through non-fossil fuels
- India has committed to reduce emissions intensity of GDP by 33-35% by 2030 from 2005 levels
- India has set a target for 175 GW of renewable energy by 2022
- India, along with France, is spearheading the International Solar Alliance with more than 20 countries

## POTENTIAL AREAS OF FOCUS

- **Working alongside central and state governments** to pilot innovative renewable energy technologies
- **Last mile connectivity** for remote communities through innovative and **grid-complementing DRE solutions**, such as home energy systems and renewable energy mini-grids.
- Investment in **solar energy and efficient storage** (lithium-ion based batteries)
- Sector-building through innovative business models and financial institutions, such as **green infrastructure bonds** to raise funds to provide debt financing for renewable energy and energy efficiency projects

### LOW SOLAR TARIFFS

In January 2016, auctions for solar capacities in the Bhadla solar park in Rajasthan, where a total of 420 MW of capacity was awarded, yielded tariffs at Rs. 4.34-4.36 per kilowatt hour (kWh). In comparison, coal tariffs range between Rs. 3-5 /kWh.

The lowest bid for solar projects before this was quoted at Rs. 4.63 per kWh in Andhra Pradesh.

### SOLAR-POWERED AIRPORT

Cochin International Airport became the world's first fully solar powered airport through an innovative PPP model. It generates 48,000-50,000 KW of power per day, with an expected project recovery cost of six years, avoiding 300,000 metric tons of carbon emissions over the next 25 years.

### GREEN BONDS

Yes Bank raised US\$ 150 million in February 2015 by issuing green bonds. The issue was a resounding success as it was subscribed twice over. The bank raised an additional US\$47 million through private placement to International Finance Corporation (IFC). In October 2016, it raised a further US\$49 million by issuing green infrastructure bonds to the FMO, the development bank of Netherlands.

#### SDG Goals

