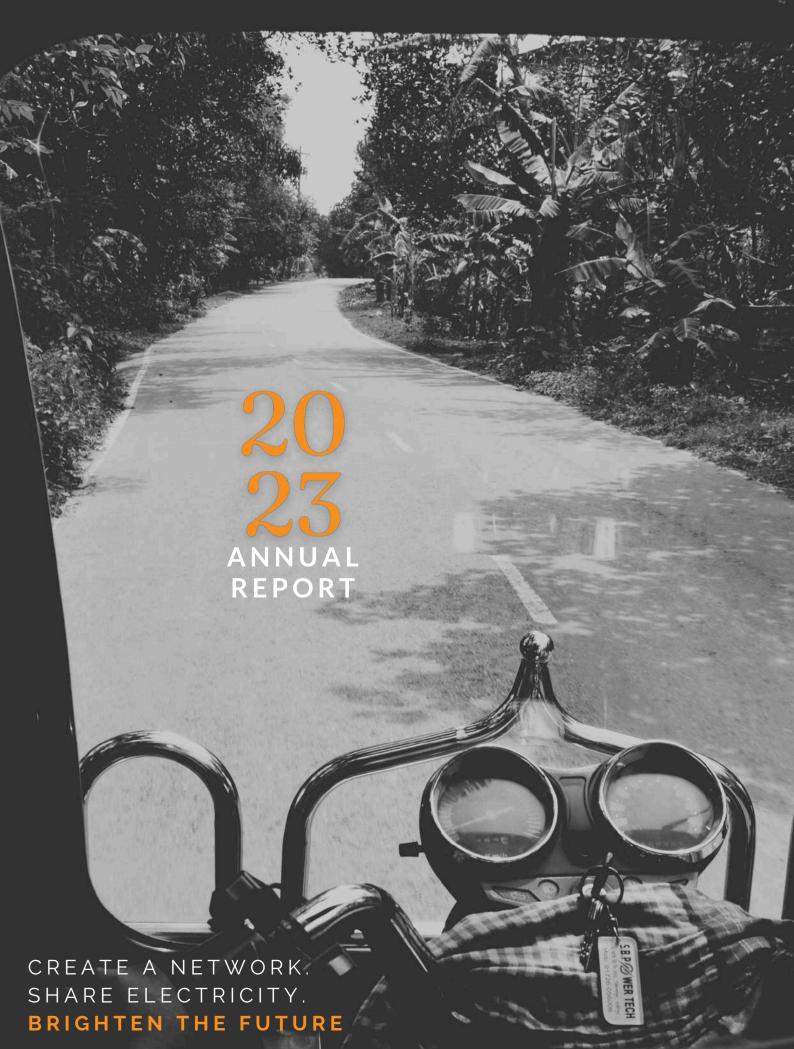
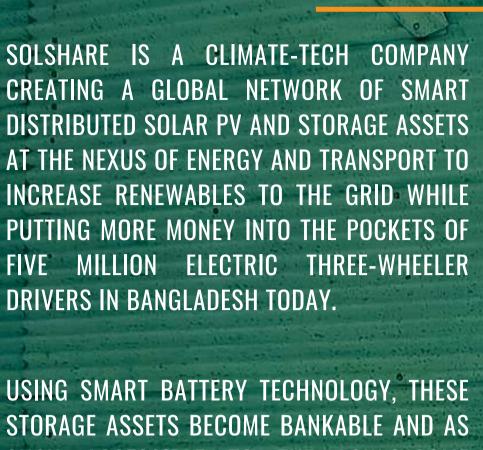
# solshare.\*





USING SMART BATTERY TECHNOLOGY, THESE STORAGE ASSETS BECOME BANKABLE AND AS SUCH ACCESSIBLE TO THE LOW-INCOME POPULATION DRIVING THE ELECTRIC VEHICLE REVOLUTION. WE ARE ON THE VERGE OF DEVELOPING THE COUNTRY'S FIRST VIRTUAL POWER PLANT, THE RICKSHAW VPP, WITH THE POTENTIAL TO BUFFER UP TO 30% OF THE COUNTRY'S PEAK GRID LOAD. THIS IS A CRITICAL PIECE OF THE JOURNEY TO NETZERO. AND IF WE CAN DO IT HERE IN BANGLADESH, WE CAN DO IT ANYWHERE.



#### **FREQUENTLY USED TERMS**

**E-Mobility:** Transport modes that are battery-powered, eliminating the need for an internal combustion engine (ICE), which releases toxic particulate matter and carbon dioxide.

**SOLmobility:** Converts EV charging garages into grid-friendly net-metered solar garages, providing smart PAYG-tech integrated lithium-ion batteries for improved battery tech and leasing models.

SOLroof: Commercial and Industrial solar rooftop installation projects by SOLshare

**Rooftop solar:** Photovoltaic system that has its electricity-generating solar panels which are mounted on the rooftop on various infrastructures.

**OPEX model:** A dedicated energy service company (ESCO) builds, owns and operates a solar rooftop system on C&I premises, and the C&I buys the electricity from the ESCO via a long-term power purchasing agreement. SOLshare delivers services to this ESCO and may opt to be a co-shareholder.

**CAPEX model:** The C&I owns the rooftop solar installation on its premises whereas SOLshare undertakes the engineering, procurement and construction (EPC). The parties might engage in a separate maintenance and operation (M&O) contractual agreement.

**Greener Garments Initiative:** The Greener Garments Initiative (GGI) is an Energy Service Company (ESCO), established by SOLshare and BESTSELLER, a global family-owned fashion company, and a leading provider of solar energy solutions in the ready-made garments sector of Bangladesh

**Virtual Power Plant (VPP):** A network of decentralized, power generating units and flexible power consumers with storage systems.

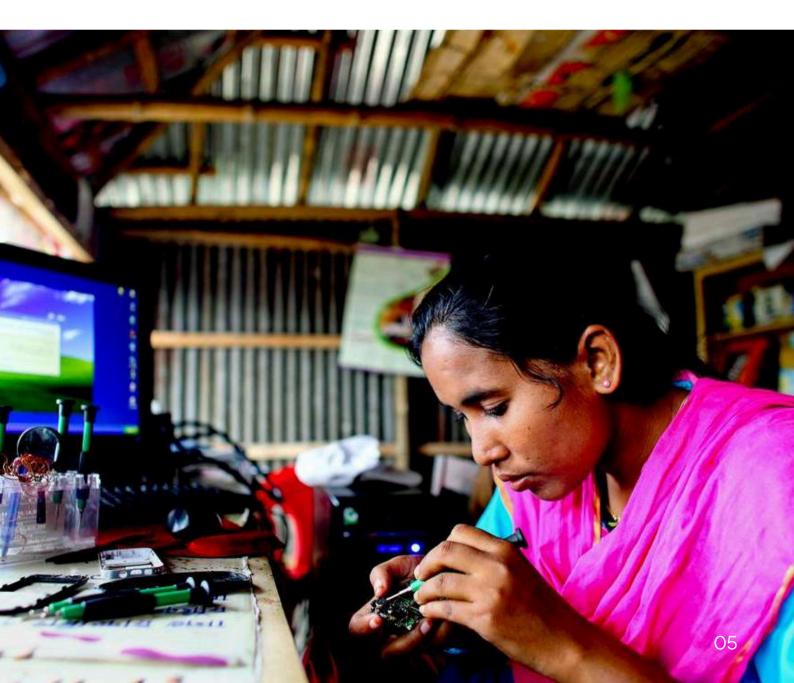
**SOLgrid**: A peer-to-peer (P2P) solar microgrid, that physically interconnects households and microbusinesses with and without solar home systems enabling real-time energy exchange.

**Prosumer:** A person/ entity that is empowered to proactively produce and consume electricity.

**Point of Common Coupling (PCC):** The PCC is a single access point for pooling and smartly interconnecting distributed energy generation and storage assets to the national grid.

#### **CAUTIONARY STATEMENT**

All forward-looking statements contained within this report pertain to prospective conditions and/or events. The actual outcomes in the future, including, but not limited to aspects such as electricity demand, production variations, projected growth rates, project strategies, costs, capacities, available resources, cash flow generation, the influence of new technology, and its advantages, may deviate due to various factors. These factors include, but are not limited to, fluctuations in local, national, regional, and global raw material prices, prevailing market and economic conditions both globally and regionally, timely project completions, shifts in product and service demand, alterations in public health, security, war, political, governmental regulatory environments, as well as unforeseen technological advancements, economic shifts, political sanctions and regulations, and research developments. Each forward-looking statement is based on the knowledge and expectations of management.



### LIST OF ABBREVIATIONS

- BGMEA: Bangladesh Garment Manufacturers and Exporters Association
- CAGR: Compound Annual Growth Rate
- CAPEX: Capital Expenditure
- COP: Conference of the Parties
- DC: Direct Current
- DER: Distributed Energy Resources
- EMDE: Emerging Markets and Developing Economies
- EPC: Engineering, Procurement and Construction
- ESCO: Energy Service Company
- FV: Flectric Vehicle
- E3W: Electric Three-Wheeler
- FCDO: Foreign, Commonwealth and Development Office
- FDI: Foreign Direct Investment
- FY: Financial Year
- GDP: Gross Domestic Product
- GGI: Greener Garments Initiative
- GHG: Greenhouse Gases
- GW: Gigawatt
- ICE: Internal Combustible Engine
- IDCOL: Infrastructure Development Company Limited
- IEA: International Energy Agency
- IoT: Internet of Things
- IRENA: International Renewable Energy Agency
- KPI: Key Performance Indicators
- kW: Kilowatt
- kWp: Kilowatt peak
- LA: Lead-Acid
- LDC: Least Developed Countries
- LEV: Light Electric Vehicle
- Ll: Lithium-lon
- LNG: Liquefied Natural Gas
- MCPP: Mujib Climate Prosperity Plan
- MENA: Middle Fast and North Africa
- MFI: Micro Finance Institutions
- MWp: Megawatt peak
- OPEX: Operating Expenditures
- O&M: Operation and Maintenance
- P2P: Peer-to-Peer
- PAYG: Pay-As-You-Go
- PCC: Point of Common Coupling
- PPA: Power Purchasing Agreemen
- PV: Photovoltaic
- QA: Quality Assurance
- RMG: Readymade Garments
- SAAS: Software-as-a-Service
- SHS: Solar Home Systems
- UAE: United Arab Emirates
- UN: United Nations
- UN DESA: United Nations Department of Economic and Social Affairs
- UNFCCC: United Nations Framework Convention on Climate Change
- USD: United States Dollar
- VPP: Virtual Power Plant
- YoY: Year-on-Year
- WEF: World Economic Forum
- ZSP: Zayed Sustainability Prize





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# Message from THE MANAGING DIRECTOR



### More Power to Climate Entrepreneurs in the Global South!\*

After nearly 30 years of global COP summits, the world still mainly channels resources to innovators who are most insulated from the ravages of climate change, virtually guaranteeing irreversible catastrophe. But there is an alternative: build an army of climate entrepreneurs in the developing world.

Necessity is the mother of invention, and in the Global South, the fight against climate change is about survival. Yet we persist in placing our bets on those far from the front lines. Despite growing demands for change from consumers and investors, we remain complacent, relying on the usual suspects. As of 2021, venture capitalists invested \$808 per capita in the US, \$29 in Mexico, \$4 in Nigeria, and just \$1 in Bangladesh. Innovation thrives on countless local experiments, and those closest to the problems are best positioned to find effective solutions.

This strategy works. When SOLshare launched the world's first solar peer-to-peer trading grid in 2015, we did so not in Silicon Valley but in a remote Bangladeshi village. Today, about five million electric vehicles (EVs) operate in Bangladesh, roughly equivalent to all the Teslas sold worldwide. Bangladesh's millions of electric three-wheeler (E3W) taxis are the backbone of the country's transportation system. The increase in E3Ws has led to more outages—until now. SOLshare is showing how these batteries on wheels, which have burdened the electric grid, can be transformed into a virtual power plant.

This transformation can buffer more than 30% of the national grid's peak load, enhancing its reliability. Imagine over five million low-income drivers getting paid to reinforce their national grid. That's energy democratization at its finest. If it can be done here, it can be done anywhere. This is how we will beat climate change.



Dr. Sebastian Groh presenting SOLshare's e-mobility solution SOLmobility to Honorable Prime Minister of Bangladesh, Sheikh Hasina at the Bangladesh Startup Summit 2023

Here are my personal highlights of 2023, in no particular order:

- CNN made a beautiful piece on our work, coined as How electric tuk-tuks could become a 'virtual power plant' for Bangladesh. You can see it here.
- Our Greener Garments Initiative (GGI), a joint venture between the global fashion brand Bestseller and SOLshare, really took off.
- A rocket start for GGI, we commissioned more than 2 MWp in 2023 compared to a mere 320 kWp installed in 2022, expecting even higher growth for 2024. More on GGI here.
- When I was pitching to the Honorable Prime Minister Sheikh Hasina during the Bangladesh Startup Summit, she asked me two questions: 1) Can we power these vehicles with solar? 2) Can we do it in a way to help our grid? Spot on!
- Speaking in front of the Heads of Delegation of more than 100 countries at the Pre-COP28 in Abu Dhabi, including Dr. Sultan Ahmed Al-Jaber, John Kerry, Jennifer Morgan, and Saber Hussain Chowdhury was certainly a tremendous honor but also felt like a big responsibility. Check out the video clip of my speech to this illustrious audience here.
- In 2023 we reached our first milestone of more than 100 smart batteries in the field under our (remote) control while signing up the first commercial bank to finance them.
- Last but definitely not least, we managed this year to expand our P2P grids in the Rohingya Refugee camps.

Thank you all for your support and enjoy the read of our Annual Report 2023. Create a network. Share electricity. Brighten the future

Dr. Sebastian Groh

CEO and Co-Founder, ME SOLshare Ltd.

### ANNUAL HIGHLIGHTS































10

## Mission

Create a network. Share electricity.

Brighten the future



## Vision

Facilitate A Climate-Resilient, Equitable And Sustainable Future For All Where Smart Technology Innovation Is The Enabler For The People's Empowerment.

### **GLOBAL ENERGY DISCOURSE**

The global energy landscape is currently undergoing an unprecedented transformation, marked by disruptions turned into crises, challenges, and opportunities. The post-Covid global supply chain disruptions and energy market fluctuations have been further compounded by the geopolitical instability in Europe caused by the Russian invasion of Ukraine, a problem that originated in Europe with major spillover effects for other continents, with the vulnerable nations suffering the most.

The recent surge in natural gas and electricity prices in Europe, alongside energy shortages in Asian and African nations, underscores the fragility of global energy systems. Governments are recalibrating policies for national energy security, recognizing the overreliance on volatile resources and aging fossil fuel infrastructure dominating global energy investment. COP28's agreement to reduce methane emissions marks a significant step in addressing environmental challenges. A necessary reorientation in the global energy landscape demands policies and partnerships that prioritize balanced energy transitions, promoting innovation, energy efficiency, and equitable societal benefits.

The COP28UAE made history in December 2023 when around 200 parties advocated for a fair transition away from fossil fuels in energy systems, led by developed nations. Recognizing the urgency to limit global warming to 1.5 degrees Celsius, the agreement calls for accelerating towards net-zero emission energy systems by 2050, utilizing zero and low-carbon fuels. While not explicitly phasing out fossil fuels, its inclusion in global stocktake signals the start of the end for the fossil fuel era.



"Whilst we didn't turn the page on the fossil fuel era in Dubai, this outcome is the beginning of the end. Now all governments and businesses need to turn these pledges into real-economy outcomes, without delay."

Simon Stiell

UN Climate Change Executive Secretary

COP28UAE witnessed an increased focus on reorienting climate finance; ensuring inclusivity for people and livelihoods and inclination towards climate-tech innovation to solve climate problems. Post-COP28, governments globally are poised to intensify efforts towards sustainable energy systems as outlined in their NDCs, aiming to triple renewable energy capacity and double energy efficiency.



"Maybe we don't need to hunt for so many unicorns in the sustainability sphere. Maybe we would have a bigger and more inclusive impact if we had tens to hundreds of thousands of climate startups."

Alejandro Crawford
CEO, REBELBASE

With \$57 billion pledged for climate innovations and the establishment of the Loss and Damage fund, climate-tech startups in emerging markets will witness increased investment opportunities for scaling up adaptation and mitigation efforts. Moreover, the push for net-zero emissions will drive policy changes, creating more favorable markets for innovations in clean energy, carbon capture, and electric mobility.

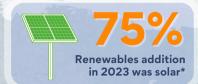
\*IEA. January 2024. https://www.iea.org/news/clean-sources-of-generation-are-set-to-cover-all-of-the-world-s-additional-electricity-demand-over-the-next-three-years

# GLOBAL RENEWABLE ENERGY TRENDS

Global energy demand and carbon emissions are projected to double by 2050, with 85% stemming from developing nations in South and Southeast Asia. Rising electricity costs due to inflation and energy crises, alongside mounting pressure to achieve Net-Zero goals, are driving governments and corporations to seek cleaner, renewable alternatives to fossil fuels in energy systems.







In 2023, global renewable energy capacity increased by 50%, mainly fueled by solar PV, which made up three-fourths of the growth. Despite this, 2023 was the hottest year on record, largely due to coal-based power generation, posing a serious threat to the planet. Projections indicate that renewable sources will make up 42% of total energy generation by 2028, with solar energy contributing 25%, marking a gradual decrease in coal-based electricity.\* A successful transition to renewable energy depends on reshaping domestic policies to support renewables and reallocating investments to renewable infrastructure.









Source: IEA. www.iea.org/reports/global-ev-outlook-2024. Fortune. www.fortunebusinessinsights.com/electric-threewheeler-market-105028

With the rise of alternative energy sources, decentralized power systems are emerging, notably grid-scale distributed solar storage, which has gained traction, especially in developing nations. These systems enable surplus solar energy to be fed back into the national grid during disruptions. This technology appeals to consumers in emerging markets due to incentives and enhanced control over power usage.

The increasing use of distributed solar storage is driving the shift towards Virtual Power Plants (VPPs), which integrate multiple distributed energy resources (DERs)-PVs, EVs, batteries for grid balancing during peak hours.

Global public transportation heavily relies on ICE vehicles, meeting 90% of the sector's energy demand and contributing to one-fifth of global  $\mathrm{CO}_2$  emissions. While developed countries are adopting electric buses to reduce dependence on fossil-fueled vehicles and to meet net zero emission reduction targets, emerging economies are witnessing a surge in electric two and three-wheeler markets. Smart charging infrastructure can amplify the transition to e-mobility by connecting EVs to the grid for controlled charging during peak hours. The global E3W market is projected to undergo a CAGR of 16% by 2040.

# NATIONAL ENERGY LANDSCAPE: BANGLADESH

Bangladesh's economy ranks 35th globally with a 6% GDP growth rate, second in Asia Pacific. From 2000 to 2023, the GDP per capita rose from USD 498 to USD 2558, and overall GDP surged from USD 115 billion in 2010 to USD 450 billion, with 36% attributed to growing industries. Despite challenges, the national economy shows resilience, driven by manufacturing and services post-Covid. Bangladesh is projected to become a 1 trillion economy in 2040 with its current GDP growth rate. The country is also set for LDC graduation in late 2026, which will translate into enhanced access to debt and equity financing as well as increased traction in terms of FDIs leading to accelerated industrialization and innovation. The manufacturing industry, RMG and textiles, in particular, aim for a 100 billion USD market. The country is also a host to over 2000 startups in fintech, climate solutions, and e-mobility.

#### **Energy Overview**





174M
Population

450B





29MW
Total installed

346 kg

tal installed Oil equivalent per capita capacity energy consumption





Power generated from fossil fuels

Power generated from renewable energy

Source: Hydrocarbon Unit. www.hcu.org.bd/site/view/publications/-SREDA. https://ndre.sreda.gov.bd/index.php?id=7

#### **Overview: Energy Generation**

40%
electricity generation
from Natural Gas



43%

Electricity consumption by power industry







21.8%

Government's plan to cut CO<sub>2</sub> emissions

recognition of the environmental sustainability concerns of the industrial emissions, and increased awareness among RMG industrial stakeholders, the BGMEA has set a target to reduce 30% of the GHG emissions, using 20% renewables, alongside framework towards erecting decarbonization while implementing scientific principles aligned with the Paris Agreement. The government has also laid out a plan for reducing 21.8% of its carbon emissions by 2030 in its Nationally Determined Contributions and generating 40% clean energy by 2041. In Bangladesh's distinctive energy and climate context, enhancing grid resilience and decentralizing energy are crucial as they would establish a reliable energy infrastructure, guaranteeing uninterrupted power supply nationwide, even during grid outages.

Bangladesh heavily relies on fossil fuels, particularly petroleum, for its transportation, contributing 14.31% to the national carbon footprint. While private electric vehicles (EVs) are emerging, electric three-wheeler taxis (E3Ws) are leading the shift towards e-mobility in mass transit. Initially powered by lead-acid batteries, E3Ws are transitioning to more eco-friendly lithium-ion batteries. Compact and capable of carrying 4+ passengers, these eco-friendly E3Ws address transportation challenges in Bangladesh's urban and semi-urban areas. Their transformative impact in the mass transportation sector was highlighted by the state minister of energy in recent parliamentary remarks. They are not only highly energy efficient but also offer a commute cost that is one-fifth that of traditional oil-operated vehicles.

5M E3Ws on the street

80% More energy efficient

15% SANNUAL GROWTH





-Nasrul Hamid, MP, State Minister, Ministry of Power, Energy, and Mineral Resources

Bangladesh, despite its low carbon footprint, faces climate risks like droughts, cyclones, storms, and floods, damaging its energy infrastructure. With a growing population and expected graduation from the LDC list, energy demand will rise in the coming days. The country must prioritize renewable energy to meet this demand and achieve net zero targets. Despite being a developing nation, Bangladesh has shown resilience by establishing a \$300 million Climate Change Trust Fund, investing in climate-resilient infrastructure and renewable energy. The Minister of Environment aims to lead Bangladesh towards prosperity through initiatives like the Mujib Climate Prosperity Plan, setting an example for others.

The MCPP aims to move Bangladesh from vulnerability to resilience, and then to prosperity. It has a global appeal. We want Bangladesh to be a climate leader, rather than victims.

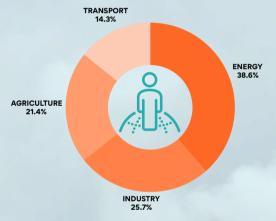
-Saber Hossain Chowdhury, MP, Minister, Ministry of Environment, Forest and Climate Change

### **GLOBAL EMISSIONS**

2023 was the peak emission year in history with global GHG emissions reaching a record high of 59 Gigatonnes of carbon-equivalent gases.

Following a 1.1 % annual growth, global carbon dioxide emissions reached 37.4 billion tonnes, with a structural slowdown in annual growth owing to increased commissioning of renewable energy sources. For the first time in history, the advanced economy GDP grew 1.7% but emissions fell 4.5%, a record decline outside of a recessionary period and falling back to their level of fifty years ago, while advanced economy coal demand is back to the level of around 1900.

However, structural decline does not directly translate into lesser emissions, rather emissions at a slower rate. Industrially developed nations like China, the United States and India remain the highest emitters in the world as they see a gradual recovery from the postcovid economic stagnation, followed by the reopening of transport and commercial ports.



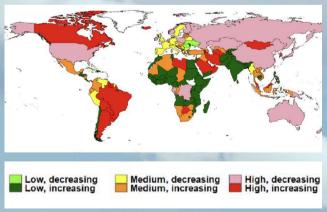
**GLOBAL PER CAPITA GHG EMISSIONS 2023** 

Source: World Data Lab, World Emissions Clock. https://worldemissions.io/

The power sector exhibited notable regional differences, with emissions declining in advanced economies sharply risina in emerging markets and developing economies. Coal combustion dominated CO<sub>2</sub> emissions globally, constituting 70% of energy combustion in 2023. Despite efficiency gains in advanced industrial economies, emissions increased, unable to counterbalance emissions from industrial expansion in emerging markets and developing economies.

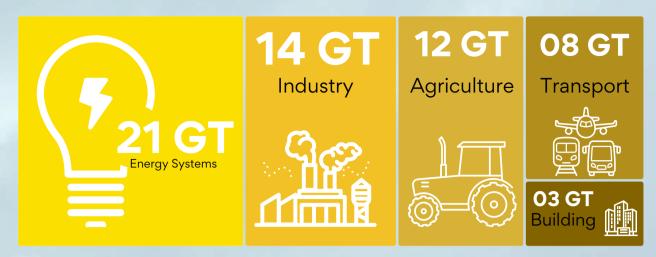
In 2023, power generation accounted for 36.16% of global GHG emissions, with the average person emitting 7.4 tonnes annually. Growing emissions now exceed levels needed to limit global warming to 1.5°C by about one-third, highlighting the urgency for action. This means that percapita emissions need to come down to below 5 tonnes per capita over the next decade and move towards 2.5 tonnes by 2040.

#### **GHG EMISSION PATH**



Classifying countries by greenhouse gas emissions per capita in 2023

Source: World Data Lab, World Emissions Clock. https://worlddata.io/elementor-79110/



#### **SECTOR-WISE GLOBAL GHG EMISSIONS IN 2023**

Source: World Data Lab, World Emissions Clock. https://worldemissions.io/

Emerging Markets and Developing Economies (EMDEs) (excluding China) have surged in global emissions, with an aggregate contribution of 40%. Bangladesh, a fast-growing EMDE, contributes a mere 0.56%\* of the global GHG emissions, with one of the lowest per-capita emissions in energy systems, at just 0.5 ton CO



While natural carbon exists in the atmosphere, excessive fossil fuel use disrupts the carbon cycle, worsening global warming. Declining emissions in advanced economies signify two key points: economic growth can detach from rising emissions, and GDPs can grow without increasing emissions. Policies and investments in renewables like solar and electric vehicles are crucial for emission reduction, surpassing sector-focused policies. The global shift to renewables reflects nations' commitments to combat climate change. However, renewable energy generation globally stands at only 17%, indicating room for growth. As public awareness rises on energy emissions, policies promoting renewables will gain significance. With countries emphasizing environmental responsibility and investing in renewable infrastructure, clean energy's share in electricity generation is poised to rise further.

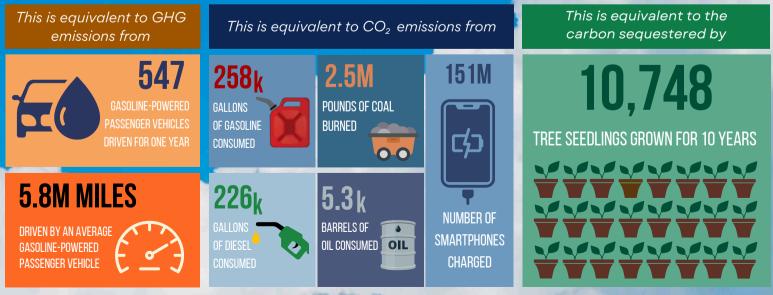
### **OUR IMPACT**

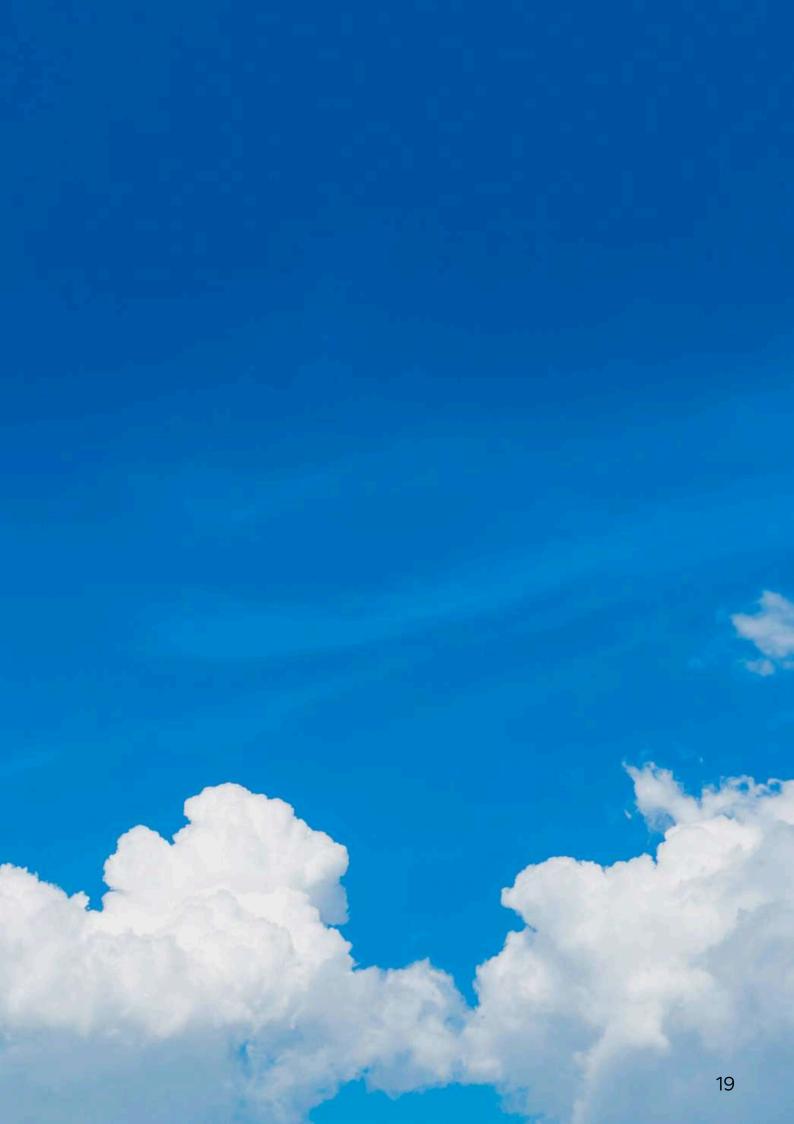
As a climate tech start-up, we're committed to combating climate change by leveraging technology to provide clean energy solutions across diverse user groups, from rural communities to commercial and industrial sectors, mitigating the impacts of global warming.

In 2023, we reduced approximately 2700 metric tons of  ${\rm CO_2}$  emissions in Bangladesh, advancing sustainability in the energy sector through innovative and sustainable solutions. We at SOLshare believe our innovative actions go beyond mere responsibility; they pave the way for positive change, inspiring future generations and start-ups to join us in leading the way towards a sustainable future, beginning right here in Bangladesh.

# 2700+ mtCO<sub>2</sub>e ANNUALLY

#### WHAT DOES THAT LOOK LIKE IN MORE FAMILIAR METRICS?\*





# COMPETITIVE EDGE

SOLshare provides clean energy solutions to rural and semi-urban areas via its unique ICT service platform, making renewable energy accessible and affordable to marginalized communities, aligning with global sustainable development goals. Our inhouse quality assurance and customer relationship management enable us to adapt our technology to client demands, staying dynamic in a shifting energy market and bridging the energy gap at the grassroots level.

OUR INVESTORS GET A CHANCE TO INVEST IN THE CLEAN ENERGY FUTURE OF BANGLADESH THROUGH OUR SCALABLE SOLUTIONS AND THUS TAP INTO THE CHANGING GLOBAL ENERGY MARKET CONSTANTLY INFLUENCED BY THE 5D'S- DECENTRALIZATION, DECARBONIZATION, DIGITALIZATION, DEMOCRATIZATION AND DISRUPTION.

As pioneers in climate technology in Bangladesh, we possess proprietary solutions, technical expertise, and over 100 years of industry experience, positioning us to lead global climate action and build resilient energy systems.

### **INVEST IN BANGLADESH**

Investing in Bangladesh now makes sense due to surging national electricity demand and the country's ambitious renewable energy plans. Bangladesh aims to generate 60,000 MW of power within 15 years, including 4,100 MW from renewables by 2030, mainly solar. Committed to reducing carbon emissions by 21.8% under the Paris Agreement, the government is promoting renewable energy policies. As Bangladesh prepares to transition from a least developed country in 2026, the country will witness a surge in energy demand. SOLshare is leveraging existing infrastructure, including a growing fleet of over 5 million electric three-wheelers and 6 million solar home and storage systems, to create a Virtual Power Plant, integrating solar and storage assets into the grid.



BIULUAU





30K+
E3W charging stations







# WHY COLLABORATE WITH SOLSHARE?

Post-pandemic global inflation and volatile energy markets have brought about a paradigm shift in Bangladesh's energy landscape. With challenges in importing fossil fuels due to soaring prices and the dollar shortage, the country must pivot towards renewable energy, especially solar PV. SOLshare offers a scalable solution that compliments the government's 10% renewable energy target for the national grid. SOLshare's patented technology along with a proven track record in building robust data infrastructures makes it the most well-positioned player to capitalize on the changing landscape of the Bangladeshi energy market. SOLshare's local origin not only keeps technology development costs lower but also creates avenues for other local players to enter the energy market, creating a competitive and healthy domestic energy industry. Investing in SOLshare in Bangladesh presents a compelling opportunity for scalability and future potential. Its innovative technology and flexible business model forecast substantial growth domestically and offer licensing opportunities, fostering strong energy ecosystems globally.



Patented Battery Technology



### Robust Data Infrastructure

Uses unified ICT platform to provide multitude of energy services

Low-cost Technology Development



Local origin of the tech prevents forex depletion

# Future Growth Potential

Licensing opportunities for the technology and the business model to build resilient energy systems globally



# Scalable Opportunity



### **OUR WORK**

The guiding principles of SOLshare's technology strategy are threefold.



1. ADDRESSING CLIMATE CHANGE MITIGATION AND ADAPTATION THROUGH INNOVATIVE AND DISRUPTIVE TECHNOLOGY



2. ORCHESTRATING INVESTMENT INTO EXISTING RESOURCES FOR A FUTURE PROOF INFRASTRUCTURE



3. FOSTERING SOCIAL INCLUSION, FINANCIAL EMPOWERMENT AND RESILIENCE IN VULNERABLE **COMMUNITIES THROUGH SUSTAINABLE FINANCE** 



AS A CLIMATE-TECH COMPANY, SOLSHARE IS REVOLUTIONIZING THE ENERGY TRANSITION IN BANGLADESH THROUGH ITS SOLUTIONS PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY THROUGH SMART DISTRIBUTED SOLAR AND STORAGE ASSETS.

THIS PAVES THE WAY FOR THE INTEGRATION OF MORE RENEWABLES TO THE GRID WHILE IMPROVING THE SOCIO-ECONOMIC LIVELIHOODS OF VULNERABLE COMMUNITIES.

We have consistently refined and broadened our range of services, with a niche focus on addressing the core challenges faced by our customer base, constituted by the underserved at the base of the economic pyramid.

In a changing market while acclimating constantly to new challenges by adapting and improving our technology, our marketplace for future-proof energy infrastructures – the SOLbazaar, has grown to 3 distinctive business lines.







### ABOUT SOLSHARE

SOLshare is building a global network of distributed solar-powered storage assets based on 5M existing electric three-wheelers. By making lithium-ion batteries bankable and remotely controllable, we develop a smart battery network starting with Bangladesh at a scale that we believe right now is not possible in any other market in the world.





Our globally recognized SOLbazaar has developed into an energy marketplace to fight deficits to access sustainable energy. Via our SOLbazaar platform, we equip vulnerable communities with awesome energy services, creating synergies between energy and transport to provide access to clean affordable energy, micromobility services, financially inclusive PAYG technology and IoT devices, and C&I solar rooftop installations.

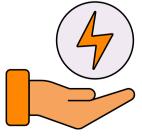
Grounded in the 5 D's of energy: Decentralization, Decarbonization, Democratization, Digitalization, and Disruption, SOLshare's work began in the energy access space with a focus on energy efficiency by tapping into the offgrid energy market by creating the world's very first Peer-to-peer (P2P) microgrid, the SOLgrid. This provides households and microbusinesses with and without solar home systems the freedom to use energy as a producer, consumer, or prosumer. SOLshare's ICT-based energy service platform called the SOLbazaar, monetized excess solar energy along the value chain with mobile money in real-time, allowing users to earn an income directly from the sun.



ECHELON OF SOCIETY, PROVIDING SAFE AND AFFORDABLE
MODELS FOR PROVIDING ELECTRICITY THROUGH OUR
REVOLUTIONARY APPROACH TO MOBILIZING ENERGY AND
TRANSPORT, MANAGING POWER FLOWS EFFICIENTLY THROUGH
SMART IOT TECHNOLOGIES

Now expanding to electric three-wheeler (E3W) vehicle batteries, SOLshare is developing network of а smart distributed solar and storage assets that economically empower EV drivers while paving the way for virtual power plants in Bangladesh. SOLshare's patented battery management technology is integrated with smart batteries that provide remote monitoring and access, which are sold to garage owners to be leased to EV drivers on a pay-as-you-go (PAYG) model with an automatic shut-off function. Coupled with mobile payment systems, these remove high factors the capital expenditures required for EV drivers, increasing their incomes by at least 30%.





Access to electricity is crucial but more so than that is the flexibility and profitability behind energy usage that leads to real change towards sustainable development. SOLshare has thus grown from an energy access company to an energy service provider and from solving a household energy challenge to transforming the e-mobility scenario in Bangladesh.

### SOLMOBILITY

The global electric vehicle (EV) market is experiencing a significant surge, driven by an increased demand for eco-friendly transportation and heightened environmental awareness. This growth is further propelled by the ongoing energy and fuel crisis, which has prompted a shift from ICE-powered vehicles towards more sustainable and efficient modes of transport.

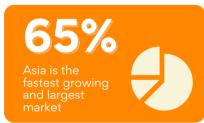
Consumers are becoming more conscious of the environmental impact of transportation. They are drawn to the wider selection of vehicles, enhanced battery capacity, and cost savings that EVs offer. Besides, governments worldwide offer financial incentives like tax breaks, subsidies, and charging infrastructures to encourage EV adoption to keep up with the national carbon emission reduction goals.

HOWEVER, IT'S IMPORTANT TO RECOGNIZE THAT PRIVATELY OWNED EVS ARE NOT A ONE-SIZE-FITS-ALL SOLUTION. WHILE DEVELOPED NATIONS WITH ROBUST CHARGING INFRASTRUCTURE AND HIGHER PER CAPITA INCOME CAN TRANSITION TO INDIVIDUAL EVS MORE READILY, DEVELOPING NATIONS LIKE BANGLADESH, WITH GROWING POPULATIONS AND LOWER PURCHASING POWER, REQUIRE TAILORED APPROACHES FOR EV TRANSITION.

Electric three-wheelers offer a promising alternative in these cases; they are compact, spacious, and affordable, making them one of the fastest-growing transportation options in emerging economies. However, the electrification of micro-mobility in these regions still faces challenges like affordability, infrastructure, and energy reliability.











Bangladesh features a 4-million-strong E3W fleet, which combined with the 30,000 charging stations, underscores the country's mass transportation sector. Currently valued at USD 10 Billion, the E3W market is projected to reach 8 million EVs following a 30% YoY growth by 2029. However, the sector lacks formalization, with toxic lead-acid batteries, hazardous charging infrastructure available only at night and range anxiety among drivers preventing them from taking longer trips.

SOLshare's technological intervention is centered around the facilitation of smart services enabling modern batteries with PAYG capability. These batteries are equipped with a smart battery management system that ensures safety and allows for data acquisition with battery locking and unlocking features. These batteries also feature SOLshare's proprietary IoT device, enabling them for Bluetooth communication with nearby devices. Sold to garage owners, these smart batteries are then leased to EV drivers on a pay-as-you-go (PAYG) basis with an automatic shut-off upon lease expiration function. Garage owners manage earnings and cash-outs through an app, with SOLshare receiving software-as-a-service (SaaS) fees during cash-outs. For users, modern batteries like LI batteries offer longer lifetimes, reducing daily battery costs and providing greater payment flexibility, letting them avoid a cycle of debt. This PAYG battery leasing model represents a pioneering approach in Bangladesh, building upon a successful model already underway in neighboring India.











### **USER STORIES**

### **SHOPON DHAR**

A 35-YEAR OLD SHOPON IS FROM TEKNAF WHO IS THE SOLE BREAD-EARNER IN A FAMILY OF SEVEN, INCLUDING HIS PARENTS AND CHILDREN. SHOPON DRIVES AN ELECTRIC THREE-WHEELER, COMMONLY KNOWN AS TOM-TOM IN HIS LOCALITY.



Shopon Dhar (35 years) is an EV driver from Teknaf who supports his family of seven, which includes his parents and children by driving a lead-acid battery-operated electric three-wheeler. He works hard transporting locals in his area throughout the day and living hand to mouth with his bare minimum earnings. However, things fell apart for him when the batteries in his three-wheeler broke down after lasting only a year. Since this vehicle is the only source of his income, there was no other way for him to resume his earnings other than getting another set of batteries. But, a new set of lead-acid batteries cost north of 70,000 BDT, to be paid upfront, an amount of money a three-wheeler driver does not usually have. Financial institutions would not grant Shopon a loan to get new batteries as lead-acid batteries have no asset security. On the other hand, lending from informal sources meant staggering interest rates that would push Shopon into a vicious cycle of debt.



Amidst uncertainty and frustration, Shopon came across SOLshare's innovative smart lithium-ion battery-leasing scheme that enables drivers, like himself to lease a smart lithium-ion battery. Subsequently, he pays a leasing fee for the battery through a convenient pay-as-you-go system during the period of its usage without having to pay heavy CAPEX to afford a new battery. Equipped with a set of smart lithium-ion batteries estimated to last over four years, Shopon now benefits from reduced charging hours and lower electricity consumption, resulting in decreased charging costs, and improved mileage performance. Moreover, he receives enhanced visibility into mileage data, further enriching his experience. Shopon is an example of how SOLshare is transforming a market of 5 million electric vehicles by creating high-quality yet affordable solutions for impoverished communities.

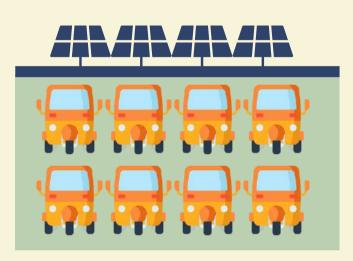


### THE RICKSHAW VPP

SOLSHARE IS BUILDING A GLOBAL NETWORK OF DISTRIBUTED STORAGE ASSETS IN BANGLADESH AT A SCALE THAT WE BELIEVE RIGHT NOW IS NOT POSSIBLE IN ANY OTHER MARKET IN THE WORLD.

#### **SYNOPSIS**

On a regular day, an electric vehicle (EV) driver rents a fully charged EV from a garage owner, using it to provide transportation services throughout the day. Upon returning to the garage in the evening, the driver plugs his battery into the outlet for overnight charging. Studies reveal that, on average, a lithium-ion battery still holds approximately 30% of its charge at this point. This surplus energy, when multiplied across the 5 million EVs operating nationwide, holds substantial value for Bangladesh, a country that grapples with electricity shortages and is currently falling short of its renewable energy targets.



VPP CLOUD SENDING SIGNALS BASED ON GRIID DEMANDS

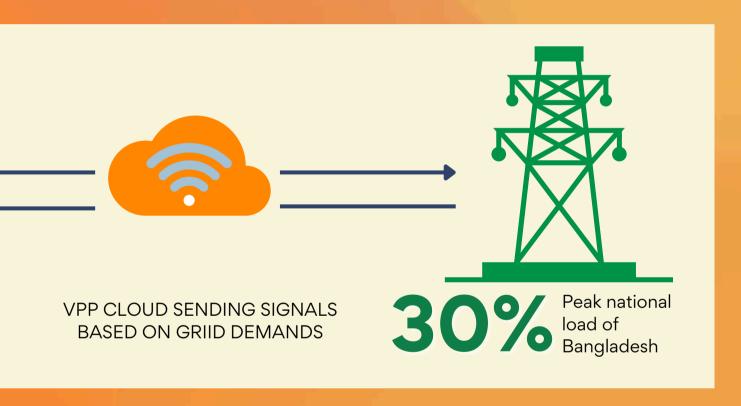
#### WHAT IS THE RICKSHAW VPP?

VPP technology offers a solution by tapping into unused energy reserves in distributed assets like lithium-ion batteries of electric vehicles. In Bangladesh, with 5 million light electric vehicles (LEVs) or electric three-wheelers (E3Ws) operating daily, each battery holds surplus energy at day's end, which remains unutilized. VPP cloud sends signals to smart chargers to discharge or charge batteries based on grid demand, enabling surplus battery energy to feed back into the national grid during peak evening demand. This aligns with trends when most drivers are inactive, and vehicles are idle, awaiting recharge in garages. E3Ws running on lead-acid batteries require all night to charge in the garage, leading to clustered storage assets being charged at peak-hour tariffs. VPPs can aggregate surplus battery energy to supply the national grid during peak hours, allowing vehicles to recharge during super off-peak hours when the demand and tariffs are lower.

#### **SOLAR POWERED CHARGING STATIONS**

The VPP comes full circle as a renewable energy solution when solar panels are installed on the rooftops of charging stations. In Bangladesh, solar panels atop charging stations can enhance the VPP's renewable energy capacity. Garages allow efficient resource pooling and potential grid energy feedback. Solar-equipped stations ensure sustainable charging, reduce garage electricity bills and help garages qualify for government rebates.

Grid-tied rooftop solar on garages enables direct E3W charging during peak sunlight, utilizing idle vehicles during lunch breaks. Excess solar energy can be fed back into the grid at a lower cost. Lithium-ion batteries, powered by rooftop solar, ease grid strain. Combined with smart battery tech, they stabilize the grid via vehicle-to-grid and grid-to-vehicle charging, optimizing renewable energy use.



#### THE WHITE PAPER

Our **White Paper** on Rickshaw VPPs offers a succinct outline of how Rickshaw VPPs can notably enhance both the energy and transportation infrastructure in Bangladesh. while serving as the critical component in achieving clean energy targets by 2050.

THE FUTURE OF ENERGY LIES IN BANGLADESH.

IF WE CAN DO IT HERE, YOU CAN DO IT ANYWHERE.



### SOLGRID

The very base of SOLshare was built upon our SOLgrid technology, the world's first peer-to-peer microgrid that allowed energy-poor rural communities to exchange energy, earning them an income directly from the sun. The SOLgrid was built leveraging the existing solar home systems in Bangladesh which has the largest deployment of solar home systems in the world.

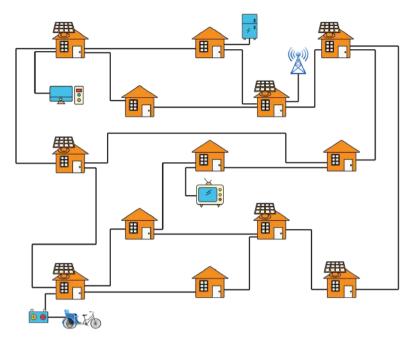
Bangladesh being a global market leader in Solar Home Systems (SHS), these systems serve six million households and microbusinesses and over 30 million people. Nonetheless, despite this progress, energy poverty persists, leaving millions deprived of access to reliable electricity due to insufficient distribution networks and frequent power outages. Hence, SOLgrid emerged as a response to these challenges with an aim to ensure access to affordable and reliable energy for under-served communities.





To bridge the persisting energy gap, SOLshare introduced the world's first peer-to-peer energy exchange network among rural households and small businesses equipped with SHS. This pioneering model, often termed the 'prosumer' model, allows households to both generate and consume electricity from their SHS installations. In essence, one household can sell surplus power to the microgrid network, while neighboring households or businesses can purchase it in small increments using mobile credits.





SOLgrid's Peer-to-Peer Microgrid Network



Off-grid solar products, SHSs in particular, play a crucial role in emerging markets by empowering those without access to electricity or with unreliable service. Solar home systems (SHSs) complement grid-based power distribution in frontier economies, facilitating an effective transition from fossil fuels to renewables, offering affordable, reliable, and scalable rural electricity supply, and contributing to carbon neutrality.

In 2022, Bangladesh achieved an electrification milestone of 100%, with the national grid extended to far reaches of the country. While it appeared that the milestone will mark the end of SOLgrid, in actuality it created the context for the next technological revolution in the Bangladeshi energy landscape, the Point of Common Coupling (PCC).



# STORIES FROM THE ROHINGYA REFUGEE CAMP



### SOFIKA

For the past five years, Sofika (36) has lived in the Rohingya Refugee camp in Ukhiya. She manages a household of nine, including seven children, and irons the clothes of her neighbors with coal during her free time to earn some money. Living off-grid, she and her family relied on small solar lamps provided by UNHCR. However, they needed a more reliable power source for daily household activities like cooking, dining, studying, and childcare.

Since the installation of SOLshare's SOLgrid in their camp, Sofika now has access to electricity throughout the day, allowing her to tackle chores and support her children's studies at any time. Moreover, they are now comfortable using fans during the humid summer months.

### **RASHIDA**

Rashida, a 15-year-old, resides in a cramped dwelling in a southern Ukhiya camp with her parents and her brother's family, where her brother shoulders the family's financial responsibilities. Despite her tailoring skills, she's unable to utilize them due to the lack of sunlight penetrating the dense camp housing. Moreover, without electricity, Rashida couldn't work at night.

However, with the installation of a SOLgrid in her camp and a SOLbox meter connection, she now has 24/7 access to electricity. This allows her to use light bulbs for tailoring at any hour of the day. Borrowing a sewing machine from a neighbor, she earned 5,650 taka over two months, doing tailoring work. With a steady income and reliable electricity, Rashida aims to save for her own sewing machine.





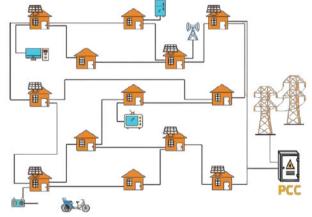
# POINT OF COMMON COUPLING (PCC)

100% electrification stands as a significant milestone in Bangladesh's energy landscape. This accomplishment presented a new avenue for utilizing the 6 million Solar Home Systems (SHS) installed by the government and in turn, created a new application for the SOLgrids.

If the SOLgrids, composed of decentralized networks of interconnected, peer-to-peer microgrids, were to integrate with Bangladesh's national electricity grid through a single point, it would breathe new life into the 6 million solar home systems and set the stage for establishing a new global standard for electricity distribution. Thus, the Point of Common Coupling (PCC) emerged as a solution to contribute to the national grid's resilience.

In 2022, SOLshare reached a pivotal moment in energy innovation with the launch of the Point of Common Coupling (PCC) at our Saddam Bazar grid, marking a significant breakthrough. Supported by funding from the UK government and in collaboration with Shakti Foundation, we successfully interconnected the Saddam Bazar SOLgrid to the national grid via a centralized PCC. This integration enables rural villagers to sell energy back into the grid, empowering local communities and advancing sustainable energy practices.

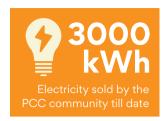
Since the PCC's installation in Saddam Bazar in 2022, a community of 20 farmers has fed over 3,000 kWh of solar electricity into the national grid covering 25% of their average annual electricity consumption, while also earning an additional income of over 100,000 BDT. Even while the community faced load shedding, they were able to enjoy uninterrupted electricity.



The PCC



Scaling up this pilot from a singular grid to 50 grids could potentially result in injecting 13.5 MWh of electricity into the national grid monthly, while the prosumers stand to gain an average additional income of BDT 700-800 per month.







### **E3W Charging Pitstop**

After the PCC installation, rigorous monitoring, both physical and virtual, revealed that the community couldn't sell excess energy during frequent load shedding and severe power outages caused by fuel cost hikes. In response, the partnership devised a simple yet effective solution.

In response to the community's need for alternative power during AC grid outages, the partnership extended the project to establish the first solar microgrid-powered electric three-wheeler (E3W) charging pitstop. This allows the community an avenue to sell their excess solar electricity when the national grid is down.

The pitstop maximizes solar generation utilization, enhancing efficiency and reducing energy wastage. It has enabled the sale of 40% surplus solar energy during outages, leading to an 80% increase in efficiency.

The ultimate goal is to scale up solutions that let us leverage existing solar resources and distributed storage assets to expand the share of renewables in the national energy mix. The Mujib Prosperity Plan set ambitious targets for Bangladesh's clean energy transformation, reaffirming its global leadership. Moreover, it facilitates testing of supplementary services alongside PCC and net-metering, while paving the way for advancements in e-mobility.







# SOLROOF

Commercial and Industrial (C&I) rooftop installations have experienced significant recently as businesses and organizations are embracing renewable energy to cut energy costs and carbon emissions. The global C&I rooftop solar photovoltaic market was valued at over USD 100 billion in 2023 and is projected to reach USD 435 billion in the next decade. The Asia Pacific region dominates this market. Besides addressing climate concerns, the appeal of rooftop solar lies in its potential to substantially reduce electricity expenses by up to 20%. Leveraging the Net Metering Policy will further lower electricity bills, boosting factory profits and contributing to carbon emission reductions, bolstering the economy.





Electricity costs have been steadily increasing over time, compounded by uncertainties arising from the global geopolitical crises and supply chain disruptions. In 2023, bulk electricity prices surged by 29.6%, reaching BDT 7.04 per unit. While renewable energy material costs remain higher than their pre-pandemic levels due to inflation and transportation expenses, they have slightly decreased compared to 2022. With growing ESG awareness and international environmental standards, industries, particularly manufacturing, are shifting towards solar energy. Bangladesh's current solar capacity of 160.63 MW, mostly in the industrial sector, falls short of demand.







Infrastructure Development Company Limited (IDCOL) expects rooftop solar capacity to rise to 300 MW by 2025. Additionally, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) plans to install over 2 GWp of solar rooftop systems in 4,000 garment factories, utilizing various financing models in partnership with Huawei.

Plans laid out by the Mujib Climate Prosperity Plan have Bangladesh at 100% renewables by 2050 creating resilience and energy independence while enabling the country to become a net exporter of energy as a green economy with leading technological innovations.

WITH THE TREMENDOUS POTENTIAL THAT LIES IN THIS MARKET, SOLSHARE HAS DIVERSIFIED ITS PRODUCT AND SERVICE LINE FURTHER BY BRANCHING OUT TO PROVIDE C&I SOLAR ROOFTOP INSTALLATION SERVICES.



With over 20 years of experience in solar photovoltaics and renewable energy, SOLshare combines expertise with German engineering. Our services enable clients to lease solar PV plants for C&I rooftops, reducing their environmental impact and utility expenses while offering an alternative to load shedding and diesel/gas generators. We handle project finance and installation setup, granting industries tax benefits and electricity rates 15-20% lower for 25 years, contributing to a cleaner global future. In 2023, SOLshare commissioned 1.8 MWp of grid-tied solar rooftop capacity for C&I customers, with an 8.784 MWp pipeline from signed agreements.

# GREENER GARMENTS GG G I INITIATIVE (GGI)

THE GREENER GARMENTS INITIATIVE (GGI) IS AN ENERGY SERVICE COMPANY (ESCO), ESTABLISHED BY SOLSHARE AND BESTSELLER, A GLOBAL FAMILY OWNED FASHION COMPANY.

This is the first time ever in Bangladesh that a global fashion brand has become part of an ESCO company to develop and set up solar rooftop installations across the country for a greener supply chain. GGI currently has a pipeline of 12 MWp of solar rooftop projects across the country. The partnership has clearly defined roles, with SOLshare being the local operator and technical partner and BESTSELLER, through its parent company Heartland, being the main equity investor.

#### THE FINANCING PROBLEM

The reduction of carbon dioxide emissions is a pressing global issue. However, investing in solar rooftop installations can pose a financing problem as it requires a long-term commitment before the benefits can be fully enjoyed. GGI offers an innovative financing model that provides a solution to this problem. By investing in rooftop solar across Bestseller's factories in Bangladesh, GGI is leading by example and demonstrating a long-term commitment through concrete actions.





#### AN INNOVATIVE FINANCIAL MODEL

The innovative financing model offered by GGI provides partners with a 20-year power purchase agreement at a floating discount rate over the utility tariff. This enables partners to receive subsidized electricity rates while also helping them to reach scope 3 carbon emission reduction targets. Additionally, partners have the option of a solar rooftop buyback, which allows them to monetize their investment if necessary. Overall, GGI's innovative financing model provides a solution to the core financing problem of solar rooftop installations while also contributing to the global goal of reducing carbon dioxide emissions. Through this partnership, we managed to secure long-term EPC and O&M service contracts which will provide a significant income stream over the upcoming years. We also think that through this partnership, SOLshare will be able to acquire more similar projects, establishing our company as a gateway for international investors into the rooftop solar space in Bangladesh.

#### MISSION & VISION



BECOMING THE LEADER IN PROVIDING GREEN, AFFORDABLE AND SUSTAINABLE SOLAR ENERGY SERVICES



#### **SDG IMPACTS**









# SUSTAINABLE DEVELOPMENT GOALS

NO POVERTY



A little over 18% of the population in Bangladesh lives below the national poverty line, according to the Household Income and Expenditure Surveys (HIES). Since its inception, SOLshare has strived to alleviate poverty in Bangladesh by providing accessible and affordable technology and services, enabling end users to generate a higher income. SOLgrid allowed users to sell solar electricity, revitalizing remote areas previously lacking electricity access. SOLmobility facilitates electric three-wheeler drivers to lease smart batteries, reducing upfront and maintenance costs and enhancing income potential.



5 GENDER EQUALITY



Despite Bangladesh's leading status in achieving SDG 5 for gender equality in South Asia, gender disparities persist, notably among the Bottom of the Pyramid (BoP) population, The rollout of SOLgrid in remote Bangladeshi regions empowered more women to become solar entrepreneurs and start home-grown businesses. Additionally, SOLshare's work during COVID distributed smart home appliances to SOLgrid users, facilitating entrepreneurship. Mamoin Ching Marma, pictured here, uses a SOLbox to power digital health equipment with which she provides healthcare services to villagers.



7 AFFORDABLE & CLEAN ENERGY



SOLshare focuses on clean, accessible, affordable energy, making SDG 7 paramount. Peer-to-peer microgrids enable users to share clean energy, with excess power fed into the national grid via the PCC. SOLmobility's solar energy and smart batteries offer a cleaner energy supply. Rooftop solar PV on EV charging garages reduces electricity costs by 40% and promotes sustainable transport. The current 30K garages across the country has the potential to add 600MWp of solar to the grid. Our SOLroof allows C&I to install rooftop solar for clean energy, lower bills, and grid contribution.



DECENT WORK AND ECONOMIC GROWTH



The unemployment rate declined to 4.2% in 2023. SOLshare's peer-to-peer microgrids supported rural households, enabling work and income generation through selling excess electricity. Moreover, with smart DC appliances, users were able to set up their microbusinesses such as small shops for tailoring services or household goods to earn an income. Electric three-wheelers offer potential for decent work, with over 5 million vehicles in Bangladesh. SOLmobility's leasing services expand access by eliminating upfront capital expenses, benefiting drivers with improved technology and financing mechanisms.



# SUSTAINABLE DEVELOPMENT GOALS



SOLshare fosters resilient communities through innovative infrastructure, driving sustainable development and socioeconomic progress. Our SOLgrids provide rural areas with clean, affordable solar energy, tapping into 6 million solar home systems for maximum efficiency. By linking rural households to the national grid via the PCC, communities contribute to national power generation. SOLmobility transforms E3W industry with safer, sustainable tech like smart batteries and solar charging. SOLroof helps the manufacturing industry to reduce utility costs while adding tsolar to the grid.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE





SOLshrare is addressing inequalities by providing access to high-quality products made affordable that provide opportunities to enhance income, increase climate resilience and improve livelihoods. Our P2P microgrid enables rural communities, including women, to earn an income from solar energy. The disparity in income distribution in Bangladesh needs more focus and action. SOLshare's e-mobility solution empowers marginalized E3W drivers to earn a higher income, breaking their cycle of debt.

10 REDUCED INEQUALITIES

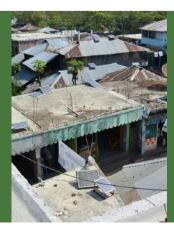




SOLshare believes sustainable energy builds resilient communities, a principle that underpins all our services. The P2P microgrid has helped create sustainable communities in rural areas that were initially left behind but now have a source of income by selling excess electricity. In Bangladesh's 5 million E3W market, our technology swaps harmful LA batteries for smart LI ones, slashes charging times, and trims grid use via solar-equipped stations, fostering sustainability. SOLroof covers commercial and industrial rooftops with net-metered solar PV, curbing emissions, and cutting electricity expenses.

SUSTAINABLE CITIES
AND COMMUNITIES





SOLshare prioritizes climate action, integrating clean energy tech into the existing infrastructure. Our services integrate clean energy tech with existing infrastructure, realized through SOLgrids sharing excess solar energy in rural areas and feeding it to the national grid via PCC, boosting efficiency and reducing waste. SOLmobility's solar-equipped charging stations and smart batteries cut electricity needs by 40%, slashing emissions. SOLroof reduces industrial carbon footprints. In 2023, all our business lines combined reduced over 200 mtCO 2e.

13 CLIMATE ACTION



# **PROJECT HIGHLIGHTS**

SOLSHARE HAD A TREMENDOUS YEAR OF DEVELOPMENT IN TERMS OF NEW PROJECTS, FROM THE FIRST EVER SOLAR MICROGRID-POWERED E3W CHARGING PITSTOP TO SEVERAL SOLAR ROOFTOP INSTALLATIONS. HERE ARE BRIEF HIGHLIGHTS OF ALL OUR PROJECTS FROM 2023.

#### **GREENER GARMENTS INITIATIVE (GGI)**



Project: Rooftop Solar Power Solution
Date of Initiation: September 2023
Client: Nafa Apparels Ltd.
Location: Baroipara, kaliakoir, Gazipur
Capacity: 227.00 kWp



Project: Rooftop Solar Power Solution Date of Initiation: September 2023 Client: Cortz Apparels Ltd. Location: Bagherbazar, Gazipur Capacity: 523.00 kWp



Project: Rooftop Solar Power Solution Date of Initiation: September 2023 Client: Ayesha Clothing Composite Ltd. Location: Jamgora, Ashulia Capacity: 285.00 kWp



Project: Rooftop Solar Power Solution Date of Initiation: November 2023 Client: Aswad Composite Mills Ltd. Location: Kabirpur, Ashulia Capacity: 534.00 kWp



Project: Rooftop Solar Power Solution Date of Initiation: September 2023 Client: Hydroxide Knitwear Ltd Location: Bagherbazar, Gazipur Capacity: 523.00 kWp

#### **GREENER GARMENTS INITIATIVE (GGI)**

A PROMINENT CLEAN ENERGY SOLUTIONS PROVIDER IN BANGLADESH, GGI IS DEDICATED TO FOSTERING A GREENER FUTURE VIA SOLAR POWER UTILIZATION. THIS GOAL IS ACHIEVED BY INSTALLING SUSTAINABLE AND COST-EFFECTIVE SOLAR ROOFTOPS ON COMMERCIAL & INDUSTRIAL ROOFTOPS ACROSS THE NATION.

Greener Garments Initiative (GGI) is an Energy Service Company (ESCO), established as a result of a one-of-kind partnership between a climate-tech company, SOLshare, and a global family-owned fashion company, Heartland (holding company of BESTSELLER) to develop and set up solar rooftop across the country for a greener supply chain.



Amidst energy crises and climate concerns, industries are turning to solar power. GGI supports this transition with tailored services to power manufacturing sustainably, reduce emissions, and work towards a Net-Zero future.

# FINANCIAL INCLUSIVITY THROUGH PEER-TO-PEER MICROGRIDS

SOLshare has implemented two new SOLgrids in the Rohingya refugee camps of Teknaf, Cox's Bazar interconnecting a total of 50 households with solar home systems (SHS). These decentralized peer-to-peer (P2P) grids will make digital finance more inclusive for women as well as foster sustainable economic opportunities for the communities who can now set up their own microenterprises through productive-use appliances.







# SMART LITHIUM-ION BATTERY DEPLOYMENT



Project: Green Financing for EV Garage Owners by Integrated Development Foundation (IDF) Location: Across Bangladesh Batteries Deployed: 63



Project: Smart Battery
Financing for EV Owners
by Sajida Foundation
Location: Kishoreganj,
Dhaka
Batteries Deployed: 02



Project: Lithium-ion battery partnership with CRL

Batteries Deployed: 36

Project: Smart Battery

Leasing Model with

Location: Naogaon,

Everlion

Rajshahi



Location: Dhaka & Rajshahi

Batteries Deployed: 10

# EXTENSION OF PCC PROJECT: FIRST EVER SOLAR SOLAR MICROGRID-POWERED E3W CHARGING PITSTOP

In partnership with Shakti Foundation, under the FCDO-funded project that interconnected the Saddam Bazar SOLgrid to the national grid, we set up a solar electric three-wheeler charging pitstop within the community as a part of a mini VPP. This pitstop provides an avenue for the PCC community to feed their excess solar during times of grid unavailability, driving efficiency up by 80% and reducing energy wastage by 40%.



### **EVENTS**

#### **ABU DHABI SUSTAINABILITY WEEK 2023.**

The ADSW is a testament to UAE's firm commitment to climate action, energy transition and sustainable economic development.

Hosted by Masdar, the ADSW 2023 served as a pivotal platform to facilitate dialogues among global stakeholders on tangible and climate-conscious solutions aimed at alleviating the future for both humanity and the earth.

Director Isa Abrar Ahmed represented SOLshare as the 2022 winner for the Zayed Sustainability Prize in the Energy category.



#### **CLIMATE EXPO 2023**



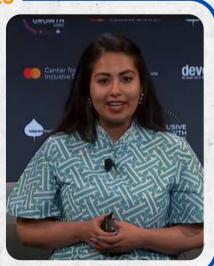
CLIMATE EXPO 2023 CONVENED ENTREPRENEURS AND CHANGE-MAKERS WHO SHOWCASED THEIR SUSTAINABLE PRODUCTS, SERVICES, INNOVATIONS, AND INITIATIVES CONTRIBUTING TO SUSTAINABLE DEVELOPMENT GOAL 13 (SDG-13).

The Expo was organized by The Earth Society, in partnership with the Climate Parliament of Bangladesh, the Bangladesh Movers Program, RR Kabel Bangladesh, and UNDP, with a goal to promote sustainable livelihoods as well as collaborations between climate-entrepreneurs and stakeholders. At the Expo, SOLshare showcased its climate-tech solutions that are gradually contributing to the clean-energy transition in the energy landscape of Bangladesh.

#### **GLOBAL INCLUSIVE GROWTH SUMMIT 2023**

THE GLOBAL INCLUSIVE GROWTH SUMMIT 2023 CONVENED LEADERS WORLDWIDE IN WASHINGTON FOR ACTION-DRIVEN DIALOGUES ON FOSTERING INCLUSIVE GROWTH AND CULTIVATING PARTNERSHIPS ON IMPACTFUL SOLUTIONS.

The summit focused on ideas and implementing initiatives to promote inclusive economic development. Eshrat Waris, Director of Product, represented the company at the platform. "For Bangladesh to sustain its growth and secure a brighter future, it needs to decarbonize and secure its energy systems. But this requires new thinking and that's where SOLshare comes in. We are transforming households, businesses, and charging stations that have solar panels on their roof and batteries as storages, into a Virtual Power Plant," said Eshrat at the summit.



#### **IRENA INNOVATION WEEK 2023.**

GLOBAL LEADERS, POLICYMAKERS, INDUSTRY EXPERTS AND REPRESENTATIVES FROM 168 COUNTRIES CONVENED AT BONN, GERMANY TO WITNESS INNOVATIVE TECHNOLOGIES WITH POTENTIAL TO ADVANCE THE GLOBAL ENERGY TRANSITION.

Aziza Sultana Mukti, Director of Operations represented SOLshare at the event, where she discussed the potential for scaling SOLmobility, highlighting how the technology can tap into smart electric three-wheelers to feed renewable energy back to the national grid via a Virtual Power Plant (VPP).



#### **MENA CLIMATE WEEK 2023**



THE MENA CLIMATE WEEK WAS HOSTED BY THE GOVERNMENT OF THE KINGDOM OF SAUDI ARABIA IN THE CITY OF RIYADH, MENA CLIMATE WEEK 2023 WAS HELD FROM 8-12 OCTOBER 2023.

The event provided a platform for policymakers, practitioners, businesses and civil society to exchange on climate solutions, barriers to overcome and opportunities realized in different regions.

Salma Islam, Head of Projects, Fundraising and Communications represented SOLshare at the event where she advocated for greater climate finance to women-led climate solutions and initiatives that have the potential to minimize the looming global climate crisis.

#### **SMART BANGLADESH SUMMIT 2023**

GOVERNMENT REPRESENTATIVES, DEVELOPMENT PARTNERS AND THE PRIVATE SECTOR ATTENDED THE SUMMIT, WHICH PROMOTED INTERNATIONAL COOPERATION IN ORDER TO ENHANCE USER-CENTRIC DIGITAL PUBLIC INFRASTRUCTURE CAPACITY BUILDING.

SOLshare's Director of Operations, Aziza Sultana Mukti and Director of Business, Isa Abrar Ahmed represented SOLshare at different panel sessions of the summit.

Mukti's keynote at the 'DPIs Shaping a Sustainable Future Landscape through Energy Transformation' session emphasized SOLmobility and SOLgrid's role in democratizing renewable energy nationwide.

Abrar highlighted SOLmobility's rapid adoption during the panel on 'Green Ecosystem: Al for Sustainable Energy', noting over 150 electric three-wheelers in daily use within a year of its soft launch.





#### THE FUTURE OF ENERGY

#### UNLEASHING THE POWER OF SMART ENERGY.

HELD AT THE UTTAR KHAN DOBADEA ELECTRIC THREE-WHEELER CHARGING STATION, WHERE SOLSHARE SUCCESSFULLY DEMONSTRATED ITS REVOLUTIONARY SMART IOT TECHNOLOGY.

The event showcased the revolutionary impact of smart lithium-ion batteries on enhancing the efficiency and sustainability of electric vehicles in Bangladesh. Dr. Tawfiq-e-Elahi Chowdhury, Energy Advisor to the Hon'ble Prime Minister, served as the Chief Guest, and Mr. Matt Cannell, Acting British High Commissioner To Bangladesh, as the Special Guest.



#### **BANGLADESH STARTUP SUMMIT 2023**



THE TWO-DAY EVENT BY STARTUP BANGLADESH LIMITED BROUGHT TOGETHER STARTUPS, VENTURE CAPITALISTS, INVESTORS, REGULATORS, AND EXPERTS FROM VARIOUS COUNTRIES WHILE SHOWCASING THE STARTUP ECOSYSTEM AND THEIR POTENTIAL IMPACTS UPON SCALING.

At the event, SOLshare's CEO Dr. Sebastian Groh presented our smart battery technology for electric three-wheelers to the Honorable Prime Minister of Bangladesh and spoke at a panel session titled "Future of Impact Ecosystem in Bangladesh".

#### SMART ENERGY FOR A SMART BANGLADESH



THE HIGH LEVEL POLICY DIALOGUE HOSTED BY SOLSHARE ALONG WITH SHAKTI FOUNDATION BASED ON OUR FCDOFUNDED PROJECT WHERE DISTRIBUTED SOLAR AND STORAGE ASSETS WERE CONNECTED TO THE NATIONAL GRID

The dialogue highlighted our success with PCC technology, empowering a small farming community economically and enhancing the national renewable energy mix. It urged policymakers and government officials to embrace bidirectional solar electricity policies. Saber Hossain Chowdhury, Minister of Environment, Forestry and Mineral Resources as the Chief Guest, H.E. Sarah Cooke, British High Commissioner to Bangladesh and Waseqa Ayesha Khan, State Minister of Finance as special guests.



"RIGHT NOW WE FACE A CHOICE - EITHER INVEST IN THOSE PEOPLE WHO HAVE THE MEANS BUT DON'T UNDERSTAND THE PROBLEMS OR INVEST IN PEOPLE WHO LACK THE MEANS BUT HAVE A REALLY GOOD GRASP OF THE PROBLEM."

-DR. SEBASTIAN GROH AT ADSW SUMMIT, COP28UAE





"SINCE ENERGY STANDS AT THE INTERSECTION OF BEING BOTH A PUBLIC AND A PRIVATE GOOD, CLEAN ENERGY INITIATIVES MUST ENSURE TO CATER TO BOTH THE PARTIES AS THEY HAVE STRONG SUPPORT FROM THE GOVERNMENT AS WELL AS A CLEARLY IDENTIFIED ROLE IN ADVANCING THEIR GOVERNMENTS' AGENDA TO ACHIEVE THE SDG7 GOALS OF AFFORDABLE AND CLEAN ENERGY."

- DR. GROH AT THE SDG PAVILION, COP28UAE

"LET'S NOT ONLY VICTIMIZE THE DEVELOPING NATIONS. THERE ARE A LOT OF INNOVATIONS HAPPENING IN COUNTRIES LIKE BANGLADESH AND INDIA, SETTING EXAMPLES THAT CLIMATE SOLUTIONS CAN VERY OFTEN ORIGINATE FROM THE GLOBAL SOUTH AND PAVE THE WAY FOR OTHERS."

- DR. GROH AT 'NET ZERO EMISSION' BY ASU, COP28UAE



### **ACCOLADES**

#### **Bangabandhu Innovation Grant**

Top 50 Startups

**Green Leaders Award 2022** 

Winner of the Green Startup Company Category

**Zayed Sustainability Prize 2022** 

Winner of the Energy Category

**BASIS National ICT Awards 2022** 

Winner of Sustainability and Environment Category of Inclusions and Community

**Earthshot Prize 2021** 

Finalist in the "Fix Our Climate" Category

**Ashden Awards 2020** 

Winner of the Financial and Business Model Innovation in Energy Access Category

MIT Solve's 2020 Global Challenges

Winner of the Good Jobs and Inclusive Entrepreneurship Category

Global CleanTech 100 Company 2019 & 2020

Listed as one of the 100 CleanTech Companies

**Unilever Young Entrepreneurship Award 2019** 

Top Eight Finalists

Siemens Stiftung Empowering People Network Award 2019 Winner

**Energy Globe Awards 2019** 

Winner

Free Electrons Accelerator Program 2018

World's Best Energy Startup

**Microsoft Airband Grant Fund 2018** 

Winner

**GIZ-Endev Innovation Competition 2018** 

Winner

**World Economic Forum Tech Cohort 2018** 

The Most Game-Changing Startups in the World

MIT Inclusive Challenge Asia 2018

Winner

IKU Award by the German Industry Association (BDI) & The German Ministry of Environment (BMUB) 2018

Winner

**UNDESA Powering the Future We Want 2017** 

Winner

Renewable Transformation Challenge by Elsevier Energy & the International Solar Energy Society 2017

Winner

Start-Up Energy Transition Challenge by DENA (German Energy Agency) 2017

Winner

**UNFCCC Momentum for Change Award at COP22 2016** 

Winner

Inter Solar Award 2016

Outstanding Solar Project

















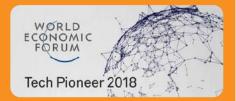




Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH









### **BOARD OF DIRECTORS**

# Dr. Sebastian Groh Chief Executive Officer (CEO), Chairman of the Board, and CoFounder

Dr. Groh, a 2013 Stanford Ignite Fellow, pursued his Ph.D. from Aalborg University and the Postgraduate School Micro Energy Systems at the TU Berlin, with a focus on energy's role in development, energy poverty, and technical innovations, particularly in Bangladesh. He published a book and multiple journal articles on the topic of decentralized electrification in the Global South. Dr. Groh started his career and received his DNA at MicroEnergy International, a Berlin-based consultancy firm working on microfinance and decentralized energy. He co-founded SOLshare in 2014 and serves the company as CEO. He has received awards such as Tech Pioneer '18 by the World Economic Forum, Empowering People Network Award 2019, and Winner of the Zayed Sustainability Award 2022. Dr. Groh is also a 2018 Ashoka Fellow and is currently a Professor of Economics at the BRAC Business School at BRAC University in Bangladesh.

#### Dr. Hannes Kirchhoff Senior Technical Advisor, and Co-Founder

An energy and process engineer with a Ph.D. in DC microgrids, Kirchhoff previously served as a technical consultant for MicroEnergy International (Germany), conducting assessments on technology, suppliers, and value chains in Asia and Africa. His experience includes roles at CAMCO (Tanzania), Schott Solar CSP (Germany), and the Institute for Ecological Economy Research (Germany). Kirchhoff has authored numerous international publications on swarm electrification. He was an awardee of the German National Academic Foundation as well as a scholar of the national Ph.D. program of the Federal Ministry of Education Germany. He is actively engaged in standardization efforts within IEEE and IEC. As a Senior Technical Advisor SOLshare, he is responsible for the provision of prepaid and energy-trading platforms for energy access technologies.

#### Daniel Ciganovic Senior Financial Advisor, Co-Founder

Daniel, holding a Master's in Economics with a specialization in Monetary Economics and Social Psychology from the University of Trier, brings over a decade of experience in business and international development projects across Germany, Serbia, and Bangladesh. Since relocating to Dhaka in January 2015, he has played a pivotal role in SOLshare's rapid growth, focusing on product-market fit, operational efficiency, and business model refinement. Before SOLshare, Daniel worked as an independent consultant for IT Start-Ups in Germany and contributed to development projects with MicroEnergy International, KfW Development Bank, and GIZ in Serbia, particularly in energy and private sector development. As Co-Founder and CFO of SOLshare, Daniel spearheads business and company development, overseeing financial, accounting, and HR functions.





# NON-EXECUTIVE BOARD OF DIRECTORS

#### Giancarlo Savini

#### Investment Director - Climate Tech, Future Energy Ventures

Giancarlo Savini is the Climate Tech Investment Director at Future Energy Ventures, the venture investment arm of German utility giant E.ON. An engineer by training with over 15 years of early-stage technology management experience and 6 years of investing experience, Giancarlo has been involved in 23 deals and driving directly two exits.

He was awarded a GCVI Global Energy Award in 2019 and taught Corporate Venture Capital and Innovation at IMD Business School. Giancarlo also co-authored several publications on material science and corporate venture capital.

### Luis Manuel Executive Board Member, EDP Ventures SA

EDP is an energy producer, distributor, and retailer with 12 million customers in Portugal, Spain, and Brazil. Its renewable power business is present in 14 countries including the US and Brazil. EDP Ventures SA is the early-stage corporate venture capital fund of the EDP Group, with the aim to support and stimulate the open innovation process in the energy sector.

At EDP, Luis is responsible for EDP's open innovation mechanisms: EDP Ventures SA (corporate VC fund), EDP Starter (business incubation program), the Open Innovation award, Free Electrons accelerator partnership, and other startup development initiatives.

Robert Kraybill

Managing Director, Impact Capital Holdings Pte. Ltd

Robert is the Managing Director, Portfolio Management for the Impact Investment Exchange (IIX) based out of Singapore. IIX is a global organization dedicated to building a more inclusive world as the foundation for sustainable peace. IIX does this by changing financial systems and innovating solutions for women's empowerment, climate action, and community resilience. Rob started to mentor SOLshare on financial issues in 2013 when SOLshare came 3rd in the CTI PFAN business plan competition. The engagement which came as part of the prize was originally intended to be one year. However, the relationship between Rob and SOLshare in fact never stopped. Today, Rob is sitting on our Board representing the IIX Growth Fund.

# **LEADERSHIP TEAM**



**Aziza Sultana Mukti,** Director of Operations

With over 25 years of experience in Bangladesh's retail and development sectors, including a decade of experience working in BRAC Aarong's management team, Aziza co-developed the smart entrepreneurship approach at SOLshare focusing on female end-users. Recognized with a gold medal from Rajshahi University and the BRAC Values Award, Aziza has undergone extensive training in leadership, gender awareness, strategic decision-making, and monitoring & evaluation. As the Head of Operations at SOLshare, she oversees field operations, sales, aftersales, customer relations, and production, playing a pivotal role in SOLshare's establishment in the local energy market.



Syed Ishtiaque Ahmed, Director of Engineering & Innovation

An alumnus of Chittagong University of Engineering & Technology and IBA, Dhaka University, Ishtiaque brings on board over 25 years of experience, including 13 years in renewable energy, specializing in solar and DRE, PVs, including floating systems, MW Solar IPP design, off-grid and hybrid PVs, and solar pumping. He also holds extensive experience in feasibility studies, system design, and program development, particularly in rural energy and solar park design.

Ishtiaque headed Rahimafrooz Renewable Energy Ltd.'s Off-grid division. He chairs the Power Electronics Subcommittee as well as is a member of IEB and the Bangladesh Solar Society.



Isa Abrar Ahmed, Director of Product & Business

Abrar brings onboard over 10 years of experience in leading growth and operations across technology companies like Samsung India Electronics Ltd., Aamra group of Companies, Bikroy.com. Prior to SOLshare he led Sheba Platform Limited, a B2B SAAS company as Vice President under which his team served 750 corporate companies starting from World Bank to Foodpanda.

As Director for Product & Business at SOLshare, Abrar is dedicated to expanding SOLmobility. He focuses on advancing electric three-wheeler transition in Bangladesh and creating a virtual power plant based on these vehicles.

## **LEADERSHIP TEAM**



Muhammad Muhaimin Principal, Data and IT

Muhaimin is an accomplished alumnus of Queen's University and Simon Fraser University, holding degrees in Computing Science. With over 14 years of experience in the IT industry, he has worked across renowned organizations such as Thomson Reuters, IBM, and Canon Canada. Specializing in Big Data and machine learning, he is also an AWS Certified Solutions Architect Associate. As the Director of Data and Information Technology at SOLshare, Muhaimin is responsible for crafting and implementing the company's data analytics strategy to align with business objectives. He ensures the reliability of data across the pipeline and oversees system infrastructure to maximize efficiency.



**Mohsena Khanom**Director of Finance

Mohsena is a trained finance and accounting professional with credentials including FCCA, ACMP. With over 11 years of corporate financial management experience in the ICT industry, her core expertise includes financial and strategic planning, general ledger accounting, and cash flow management. She is the founder of de tempête, a multinational BPO platform providing implementation, financial accounting, tax, and regulatory services. As Director of Finance at SOLshare, she standardizes compliance and control processes, develops financial strategies to balance costs and revenues, and oversees policy formulation for cash flow tracking and daily financial decisions.

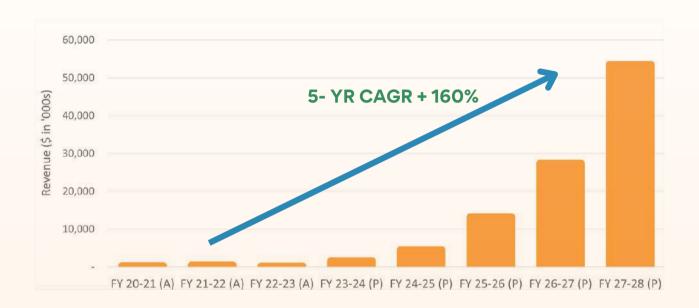


Salma Islam
Head of Projects,
Fundraising &
Communications

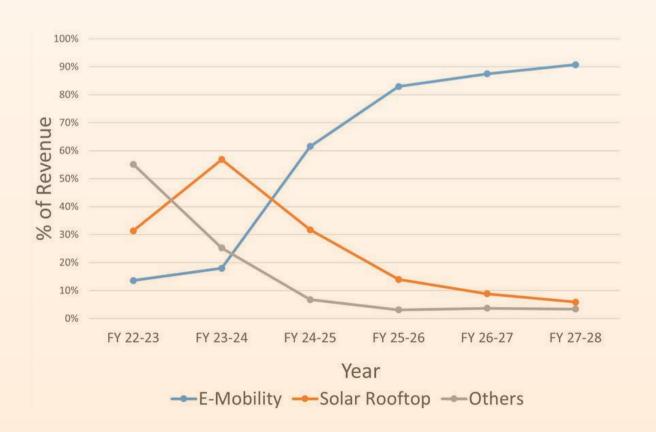
A Chevening alumna with majors in Development Studies and Environmental Science, Salma brings over 20 years of diverse experience in organizations like Oxfam GB, NACOM, ICCCAD, and ASI. She is a seasoned professional in Project Management, Research, and Policy Analysis, who led initiatives on Green Growth, WASH, Bangladesh INDC, and Food Security supported by USAID, CDKN, EU, and DFID. Previously, she served as Senior Research Advisor for the Economic Dialogue on Green Growth (EDGG) in Bangladesh. Currently, as Head of Projects, Fundraising, and Communications at SOLshare, Salma oversees all ongoing donor and private-sector-funded projects.

# REVENUE EVOLUTION

#### **Revenue Mix Evolution**



# Percentage of Revenue Across All Business Lines





## **WE EXTEND OUR GRATITUDE**

TO ALL OUR PARTNERS, INVESTORS, CUSTOMERS, SUPPORTERS, EMPLOYEES, AND WELL-WISHERS, WE THANK YOU FOR STAYING WITH SOLSHARE.

WITH YOUR SUPPORT, SOLSHARE WAS ABLE TO PUT BANGLADESH ON THE WORLD MAP WHILE SERVING OVER 80,000 BENEFICIARIES.

JOIN US IN CO-SHAPING THE FUTURE OF ENERGY FUELED BY THE 5 D'S: DECENTRALIZATION, DECARBONIZATION, DISRUPTION, DEMOCRATIZATION & **DIGITIZATION** 



































































































































#### **BANGLADESH**

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# THE FUTURE OF ENERGY BEGINS WITH BANGLADESH



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