



Scaling up clean energy investments

UK-Bangladesh Climate Partnership Forum

#UKBDcop26

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UK 2021

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UK-Bangladesh Climate Partnership Forum

A series of webinars and an ongoing, multi-stakeholder dialogue to promote collaboration and lasting partnerships at all levels between the UK and Bangladesh

Partnership is structured around four key COP26 themes

1

**Adaptation and
resilience**

2

Nature

3

Clean energy

4

Finance



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[linkedin.com/groups/12485053/](https://www.linkedin.com/groups/12485053/)



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Slides, recordings and reports

More information, slide sets, YouTube recordings, and summary reports of all sessions can be found at MottMac.com/UKBDcop26

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Programme: moderators and opening remarks

Moderators

Saleemul Huq and Simon Maxwell

Opening remarks

- Robert Chatterton Dickson, British High Commissioner in Dhaka
- Ken O'Flaherty, UK government's COP26 Regional Ambassador for Asia-Pacific and South Asia
- Mr Ahmad Kaikaus, Principal Secretary of the Prime Minister's Office Bangladesh



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Programme: speakers

Moving away from coal to cleaner power sources – the UK experience



Jim Watson

Professor of Energy Policy, UCL Institute for Sustainable Resources

Scaling up clean energy in Bangladesh



Mohammad Alauddin

Chairman, Sustainable and Renewable Energy Development Authority (SREDA)

Increasing access to renewable electricity and smart home in the UK



Toby Ferenczi

Director of International, OVO Group

Scaling up investment in the solar power industry in Bangladesh

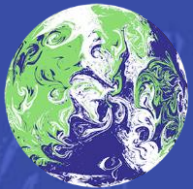


Eshrat Waris

Principal, Product and Business, SOLshare

Robert Chatterton Dickson

**British High Commissioner in
Dhaka**



Ken O'Flaherty

**COP26 Regional Ambassador
for Asia-Pacific and South Asia**



Dr. Ahmad Kaikaus

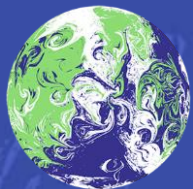
**Principal Secretary of the
Prime Minister's Office
Bangladesh**



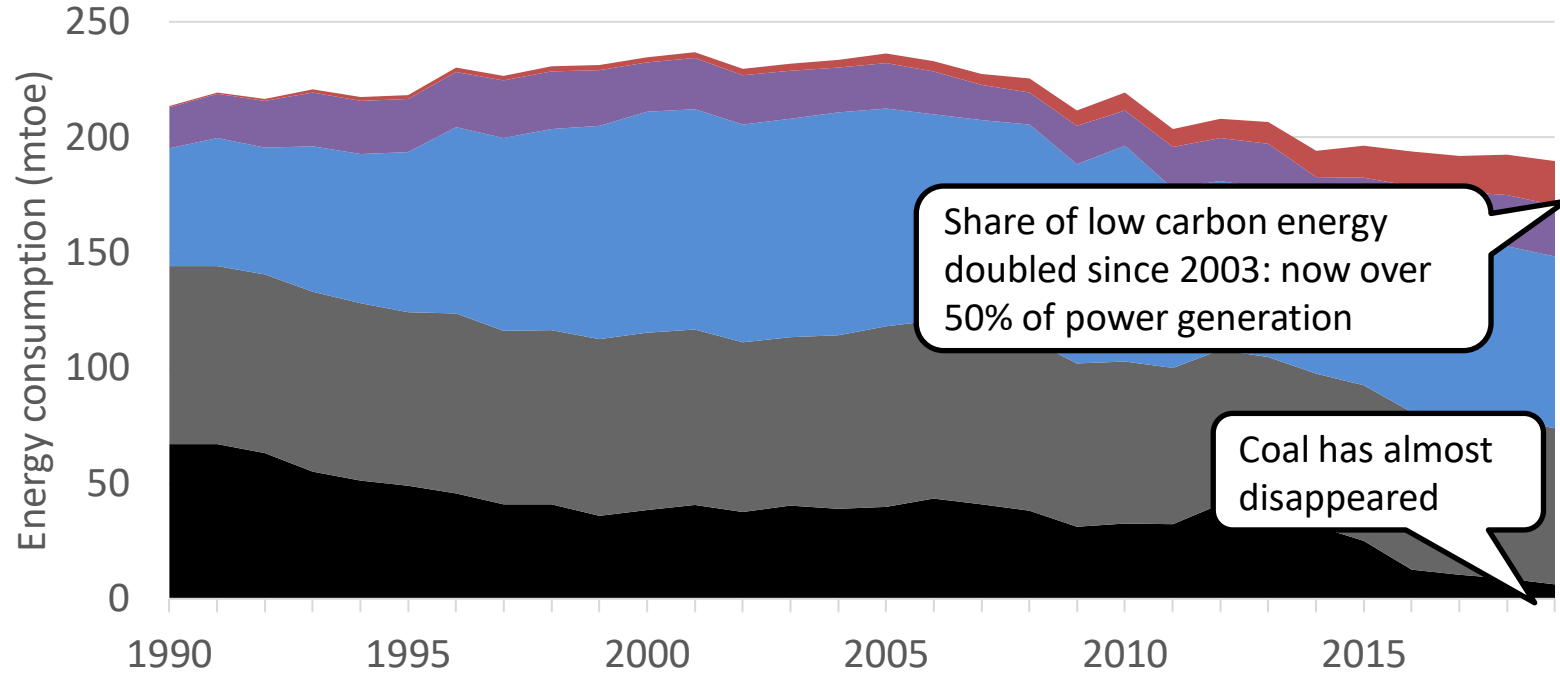
Moving away from coal to cleaner power sources: the UK experience

Jim Watson

**Professor of Energy Policy, UCL
Institute for Sustainable Resources**



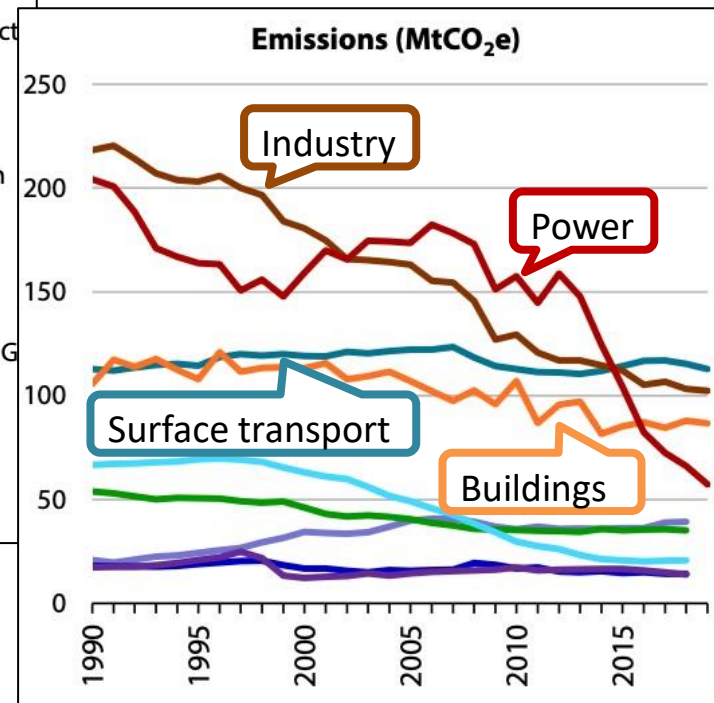
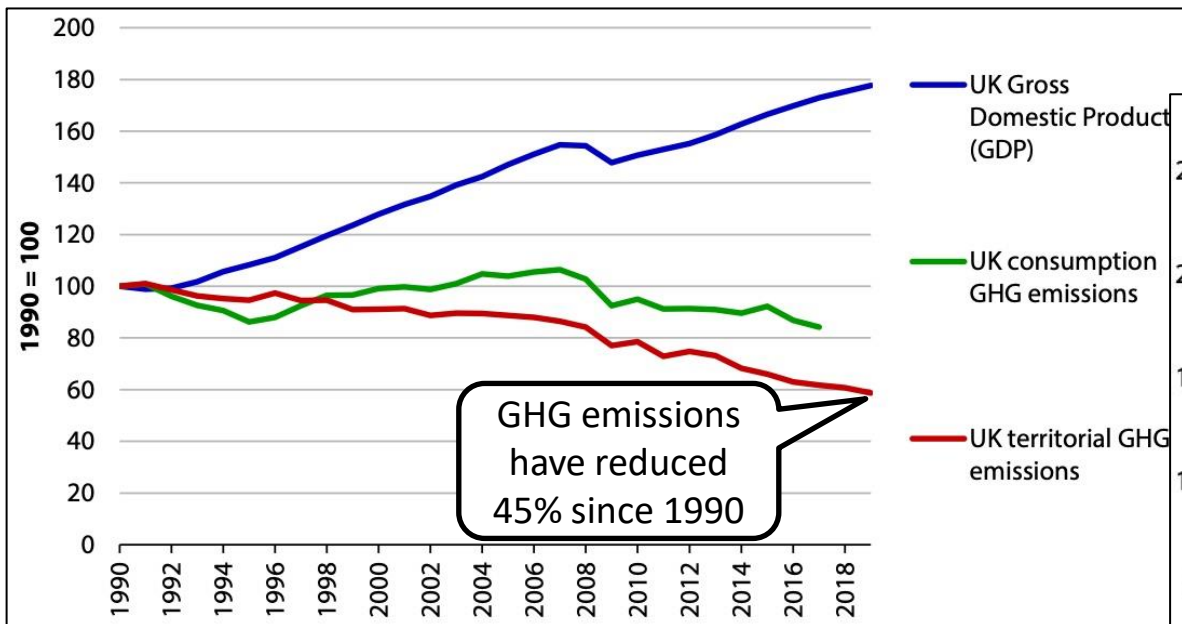
Changes in the UK energy mix since 1990



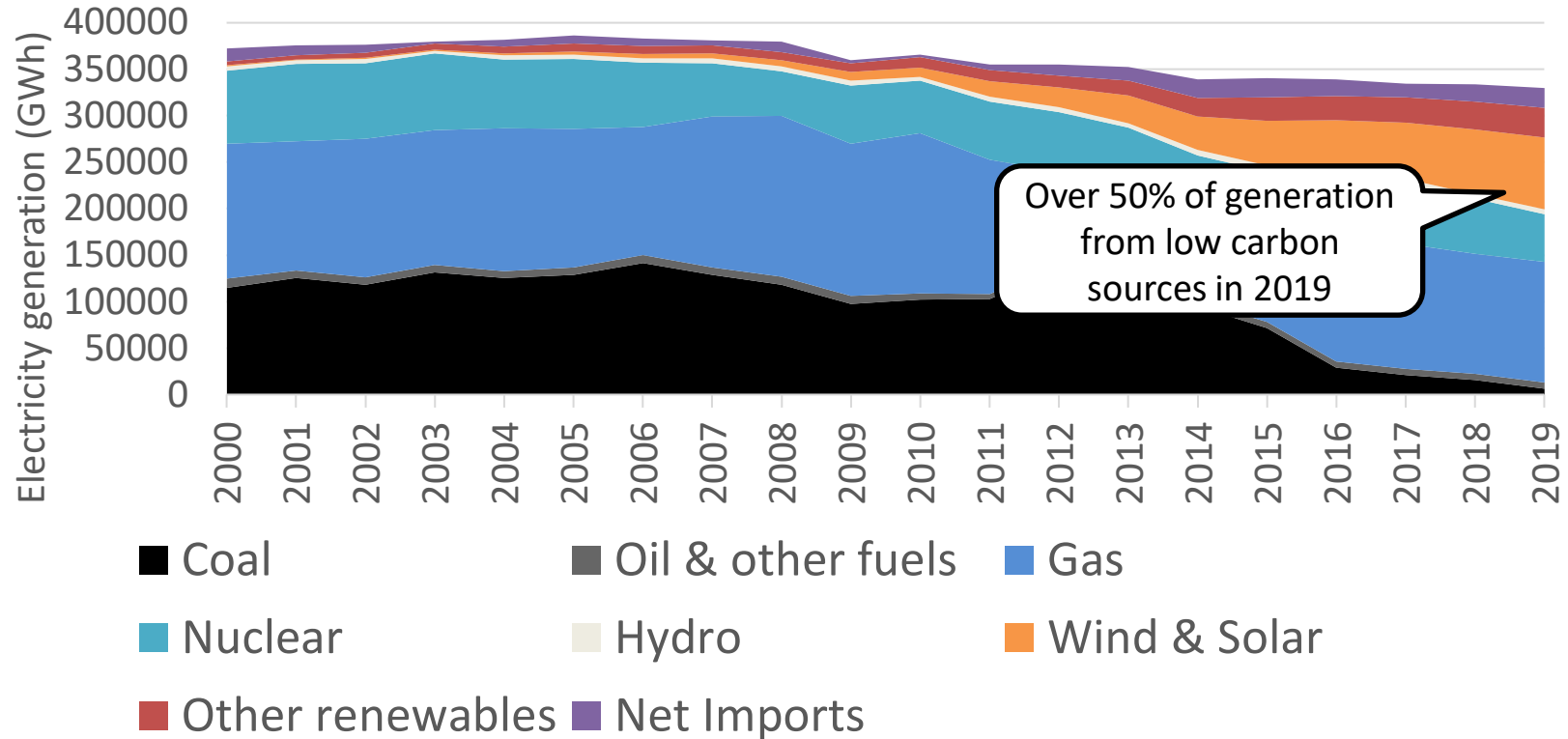
Source: BEIS

■ Coal ■ Oil ■ Gas ■ Primary electricity ■ Bioenergy & waste

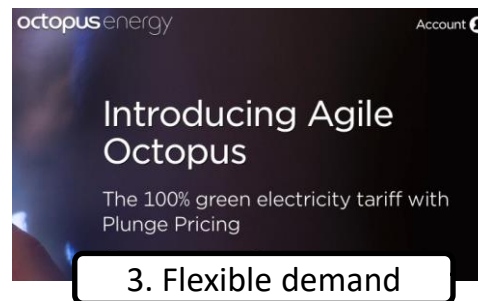
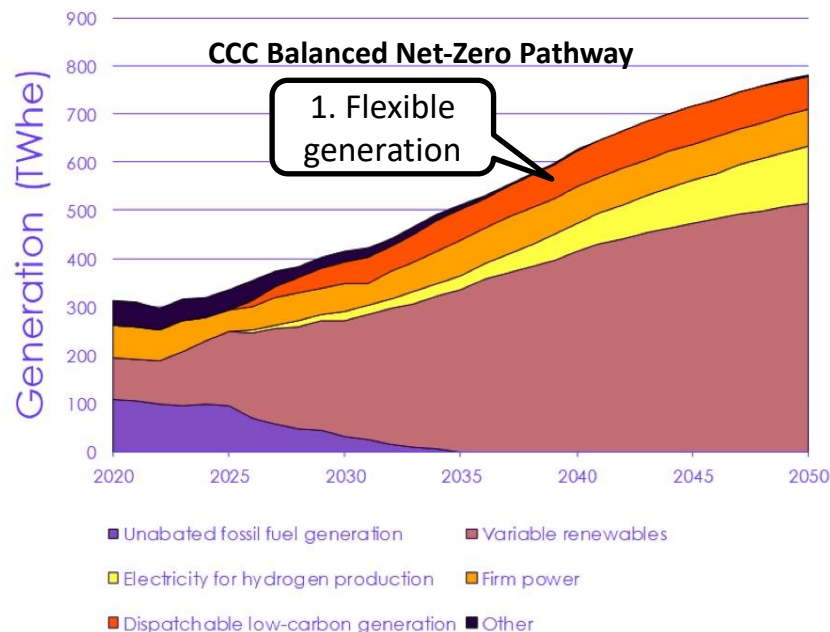
Greenhouse gas emissions and the economy



Rapid change in the electricity system



Getting to a zero carbon electricity system



Some lessons from the UK experience

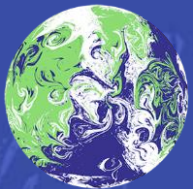
- Important to understand UK circumstances and history:
 - Coal-fired power generation has been declining since 1990 for economic and political reasons
 - Privatisation and liberalization of electricity did not deliver decarbonization: strong climate change policies and regulatory reforms required to accelerate change
- Growth of renewables has been controversial: concerns raised about the 'problem' of intermittency at every stage, but the lights have stayed on!
- Electricity systems can integrate large shares of renewables, but they need to adapt so they are much more flexible
- Reforms of policy and regulatory frameworks essential to enable this adaptation



Scaling up clean energy in Bangladesh

Mohammad Alauddin

**Chairman, Sustainable and
Renewable Energy Development
Authority (SREDA)**



Sustainable & Renewable Energy Development Authority



State of Affairs in RE & EE : Bangladesh

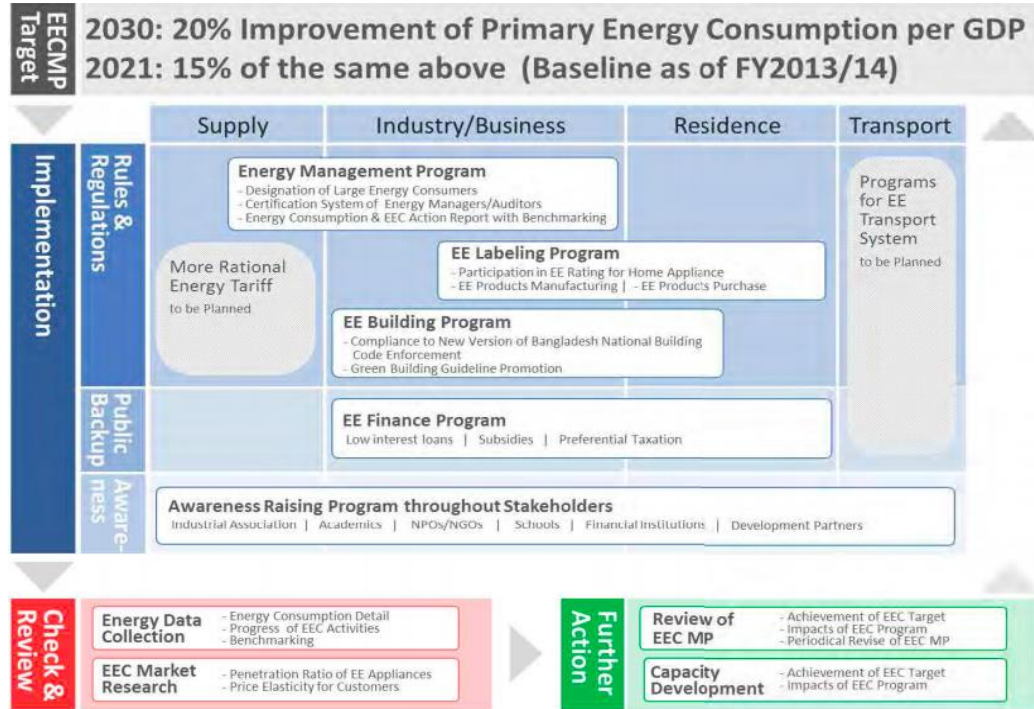


Figure: Energy Efficiency & Conservation Master Plan up to 2030

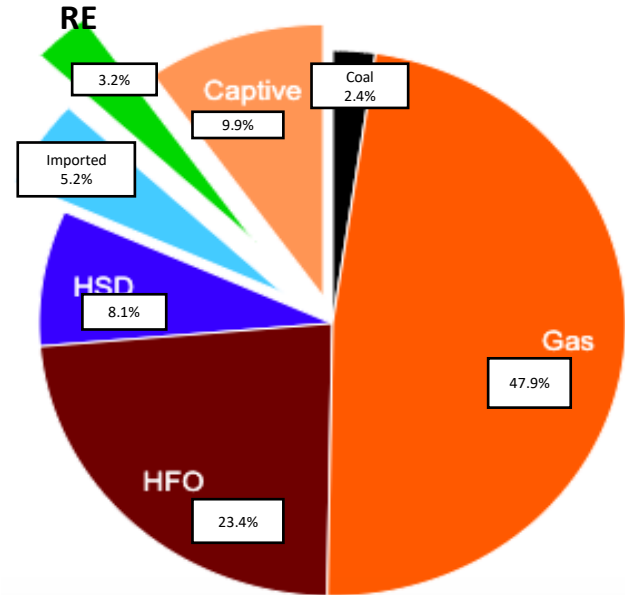


Figure: Electricity Generation Mix

Solar Energy : Applications

- Solar Home Systems
- **Rooftop Solar**
- Solar Park
- Solar Mini-Grid
- Solar Irrigation
- Solar Drinking Water System
- **Floating Solar**
- Solar water heating
- Solar Powered Cold Storage
- Solar Street Light
- Solar Powered Telecom Tower



Solar Park 7 Projects : **175.2** MWp

5.8 Million SHSs > **300** MWp

SIP > 2000 \approx **47** MWp
IDCOL, BERB, BADC, BMDA, RDA

26 SMG \approx 5 MWp

Rooftop Solar : Cost Estimation

Rooftop Space
500 m²

Solar System
60 kWp

Cost/Wp
BDT 50

CO₂ Reduction
620 ton

**Total 1220
rooftop solar
system (≈18MW)
have been
installed under
Net Metering
Scheme**

SL#	Item	Price	Share
1	Solar PV Module	15,90,000/-	53%
2	Module Mounting Structures	2,40,000/-	8%
3	Solar Grid-tied Inverter	5,00,000/-	16.66%
4	Hybrid/Fuel Save controller	1,50,000/-	5%
5	Monitoring & Communication System	45,000/-	1.5%
6	Energy Meter (SCM + SGM + NEM)	50,000/-	1.67%
7	PVC Pipe and Combiner Box	50,000/-	1.67%
8	Earthing/Lightning protection, cable and maintenance free Chemical earthing	80,000/-	2.67%
9	Cables, Connectors and other parts	1,20,000/-	4%
10	Cleaning system: Walkway, Handheld unit, Pump etc.	30,000/-	1%
11	Safety Equipment for O&M: Rapid Shut-down Device, Circuit breaker, Surge protector etc.	65,000/-	2.16%
12	Transportation, Installation & Interconnection, Commissioning	50,000/-	1.67%
13	Design & Consultancy	20,000/-	0.66%
14	Legal Communication & Other costs	5,000/-	0.17%
15	Environmental Consultancy	5,000/-	0.17%
TOTAL PROJECT COST		30,00,000/-	100%



Opex Model (LT Flat)

Tariff of the consumer : 8.53 BDT(10 USC)/kWh. Let, Negotiated OPEX tariff : 7.50 BDT (9 USC) /kWh

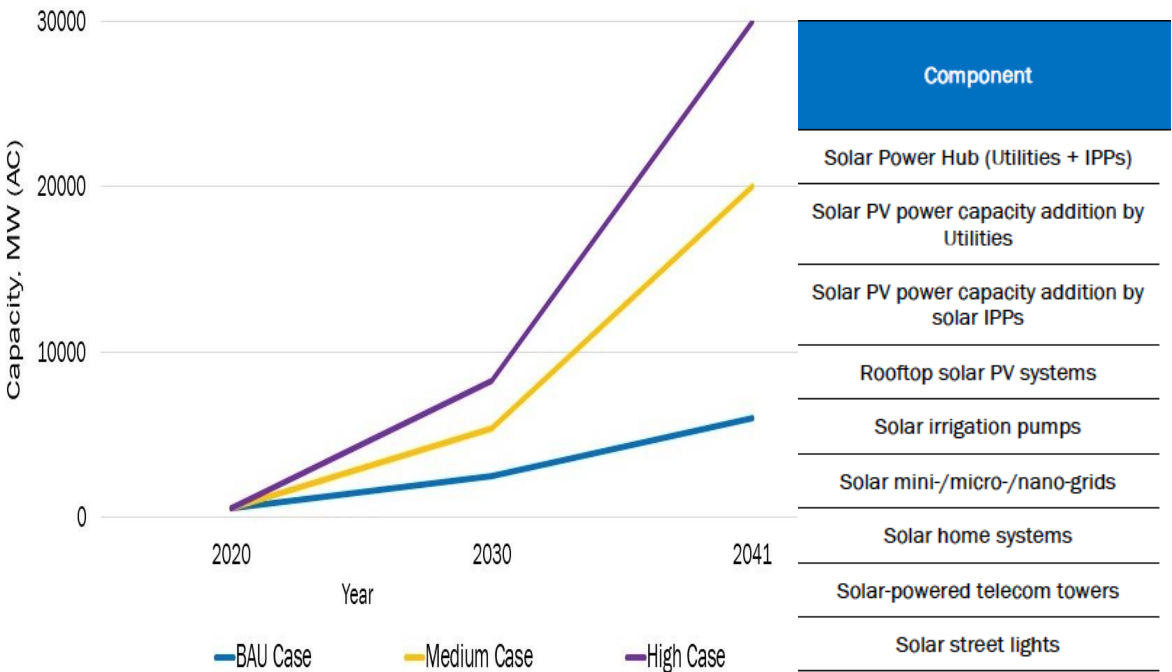
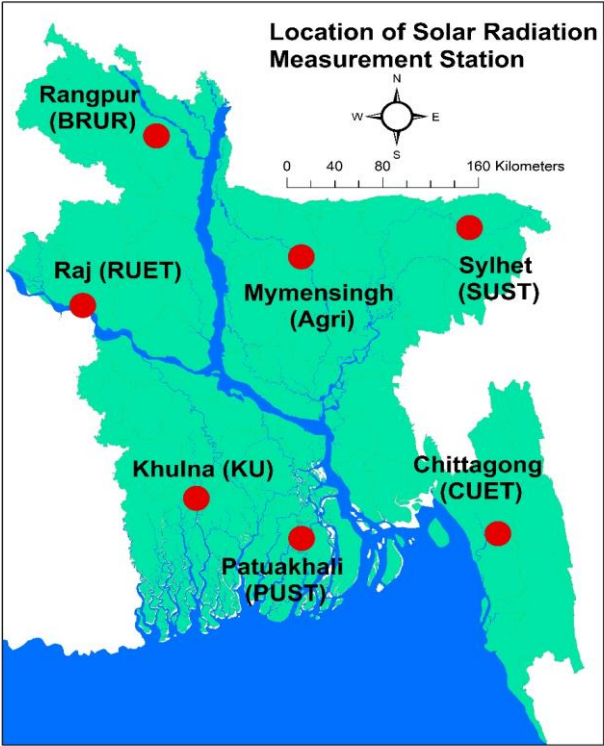
1st year: Electricity Generation 71,281 kWh

Benefit of Industry Owner	Benefit of OPEX Investor
$71,281 \times (8.53 - 7.50)$ = 73,419 BDT (866 USD)	$71,281 \times (7.50 - 3.60)$ = 2,77,996 BDT (3278 USD)

20 years: Electricity Generation 13,07,978 kWh

Benefit of Industry Owner	Benefit of OPEX Investor
$13,07,978 \times (8.53 - 7.50)$ = 13,47,217 BDT (15887 USD)	$13,07,978 \times (7.50 - 3.60)$ = 51,01,114 BDT (60155 USD)

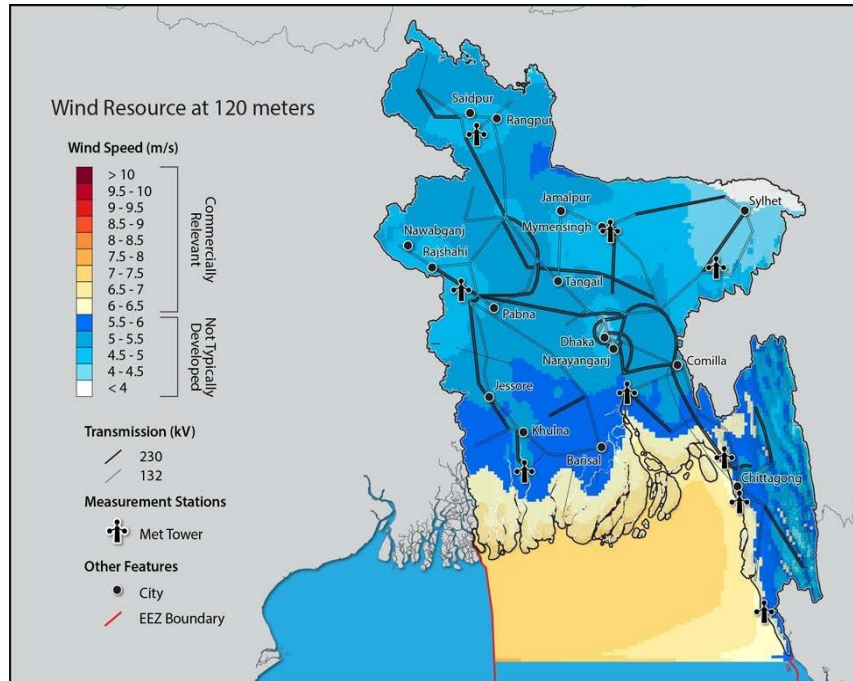
Solar Energy Potential



Component
Solar Power Hub (Utilities + IPPs)
Solar PV power capacity addition by Utilities
Solar PV power capacity addition by solar IPPs
Rooftop solar PV systems
Solar irrigation pumps
Solar mini-/micro-/nano-grids
Solar home systems
Solar-powered telecom towers
Solar street lights
Solar charging station
Other solar-powered systems

Draft National Solar Road Map 2021-2041

Wind Energy Potential



Source: NREL RE data

Wind Speed Range (m/s)	Square Kilometers (K m ²)	Acres	Estimated MW (based on 0.6 Km ² per MW)
0 to 4.75	14,769	3,647,943	24,320
4.75 to 5.25	51,966	12,835,602	85,571
5.25 to 5.75	37,728	9,318,816	62,125
5.75 to 6.25	12,276	3,032,172	20,214
6.25 to 6.75	6,093	1,504,971	10,033
6.75 to 7.25	2,196	542,412	3,616
7.25 to 7.75	162	40,014	267

BPDB has taken initiative to implement 150MW **onshore wind** power plant at 3 places of the country with a capacity of 50MW each at Mongla, Chadpur, Inani.

Policy Landscape

- BERC Act, 2003
- Quick Enhancement of Electricity & Energy Supply (Special Provisions) Act 2010
- SREDA Act 2012
- BEPRC Act, 2015
- **Private Sector Power Generation Policy of Bangladesh 1996**
- **Renewable Energy Policy of Bangladesh, 2008**
- Policy Guideline for SPP in Private Sector, 2008
- BCCSAP, 2009
- Nationally Determined Contribution of Bangladesh, 2015
- PSMP 2016
- Net Metering Guidelines, 2018

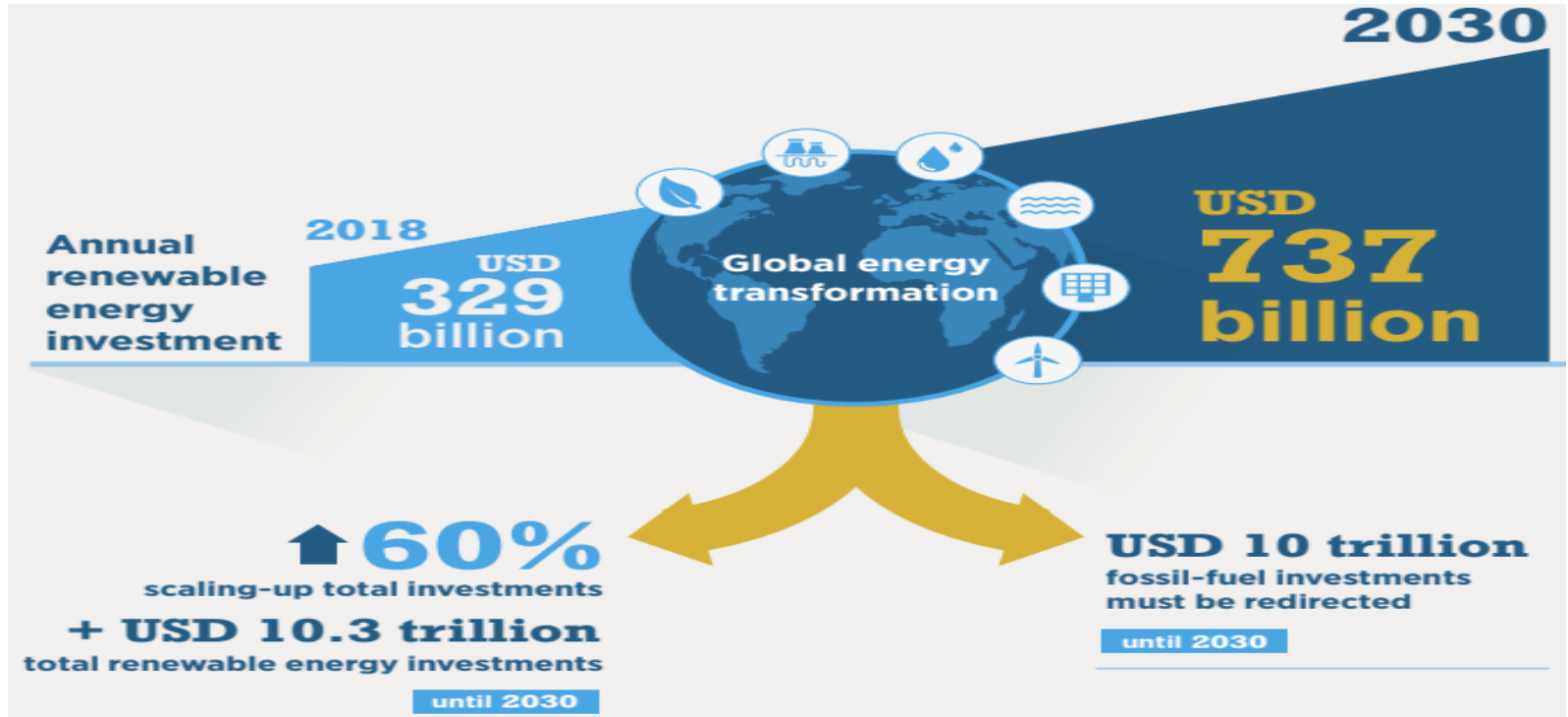
Incentives

- Exemption from corporate income tax
- Foreigners are exempted from income tax for 3 years since their arrival.
- Tax exemption on interest on foreign loans.
- Tax exemption on Royalties, Technical know-how & Technical Assistance Fees.
- Exemption of import tax, VAT & supplementary duties (if any) on 16 items of solar panel.

Challenges

- Scarcity of land
- Comprehensive RE map
- Variability
- Limited institutional capacity
- Quality assurance of the products & services
- Financing/investment

Investment in Renewables in 2030



GoB has invested around \$ 800 million in Renewable Energy in last 10 years while investment from development partners through IDCOL remained \$ 582.

“Investing in clean energy is investing in sustainable future “

Thank You

Increasing access to renewable electricity and smart home in the UK

Toby Ferenczi

**Director of International,
OVO Group**



Traditional energy value chain



Generation



Transmission and
Distribution



Retail



Customer

Traditional energy value chain



Generation



Transmission and
Distribution



Retail



Customer

OVO Energy



**Many
countries still
look like this:**



Generation



Transmission and
Distribution



Retail



Customer

State owned monopoly

Or this:

State owned monopoly



Generation



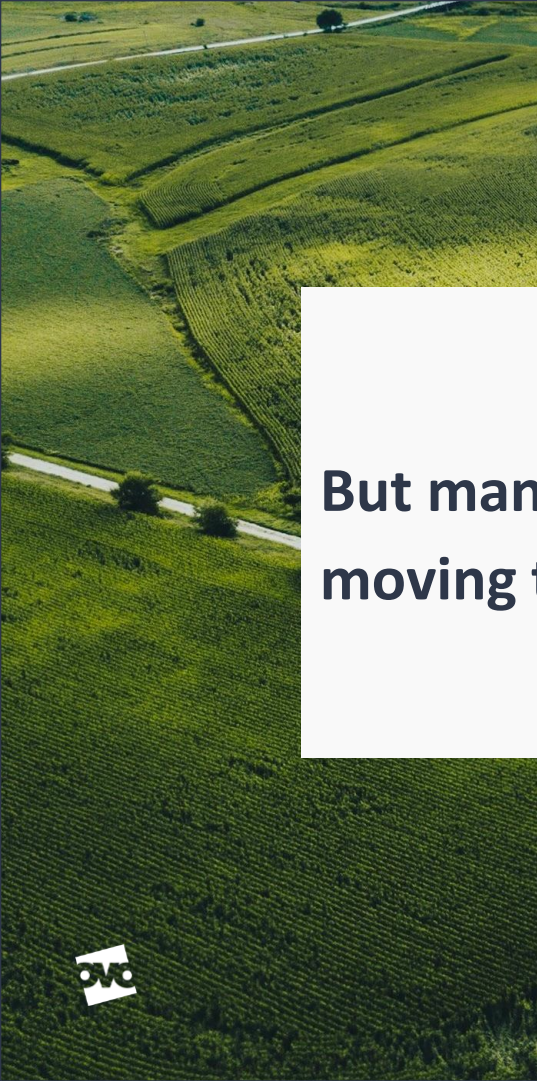
Transmission and
Distribution



Retail



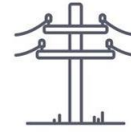
Customer



**But many are
moving to this:**



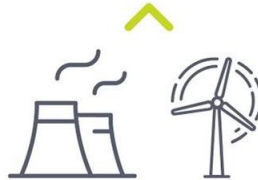
Transmission



Distribution



Smart meters, EVs, electric heat, solar and other tech means consumers play a bigger role in the energy system

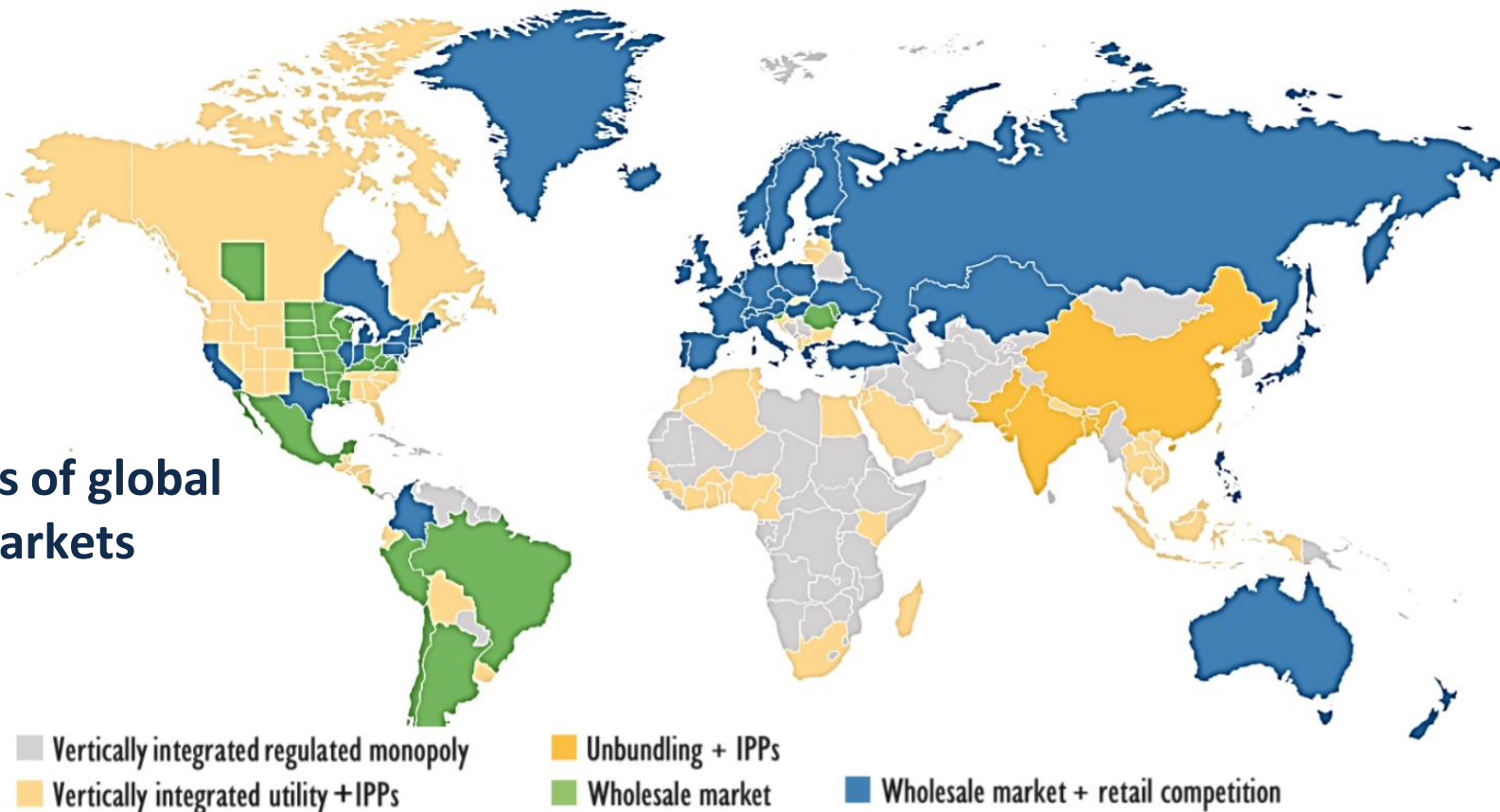


Reduction in thermal usage, increase in large renewables

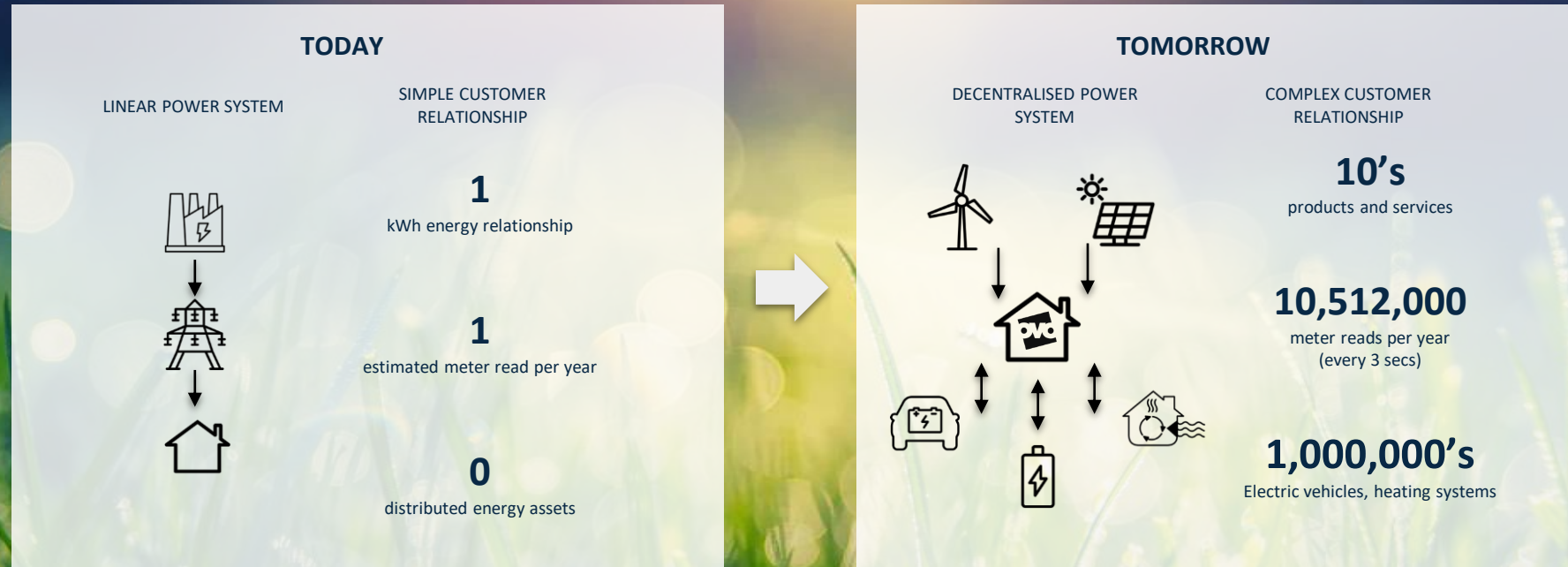


Increase in embedded generation e.g. wind, solar

The status of global energy markets



To have a world with 100% renewable energy, you need to flip the power system on its head - controlling demand to meet uncontrollable supply - requiring data mastery and unyielding customer centricity

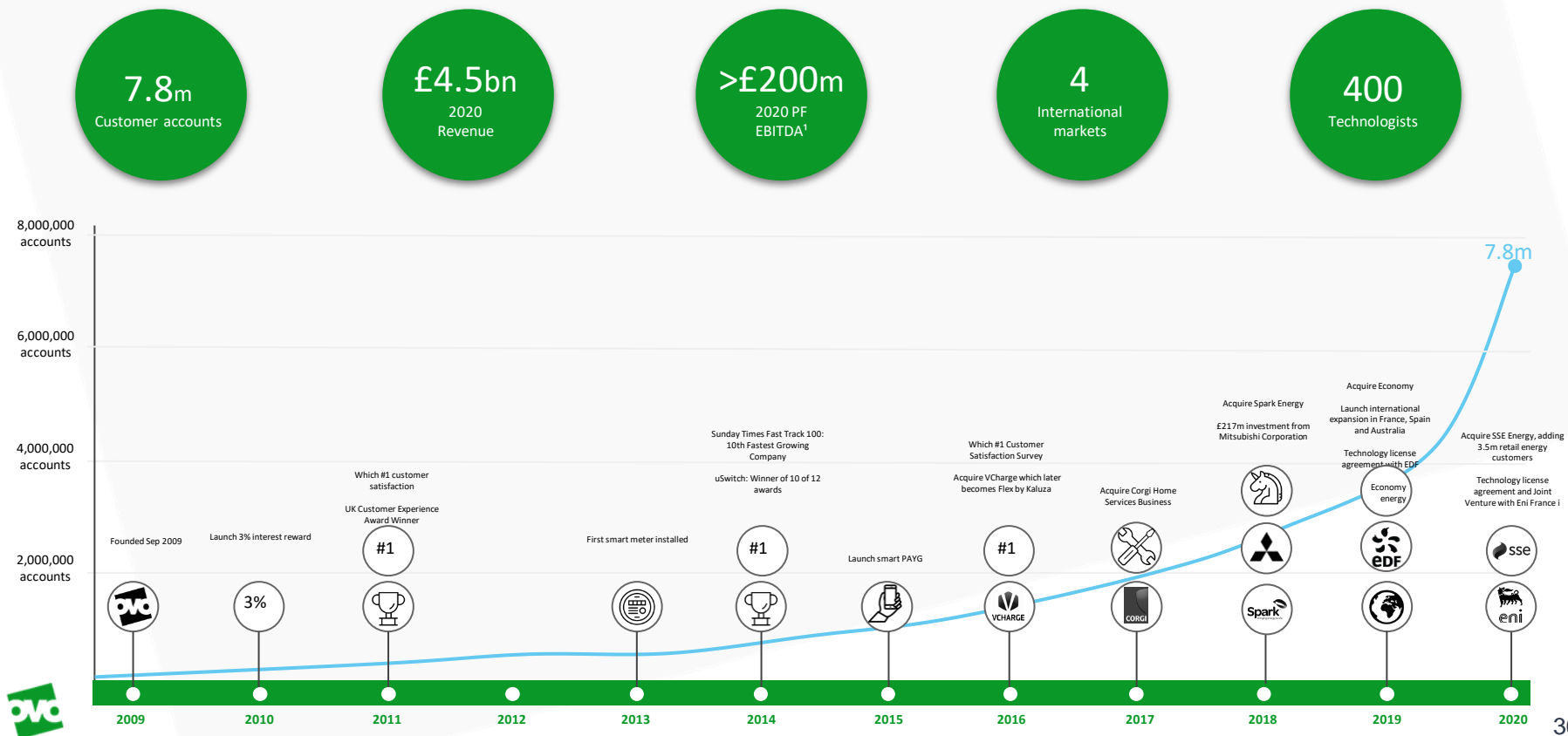


A platform driving electrification and decarbonisation



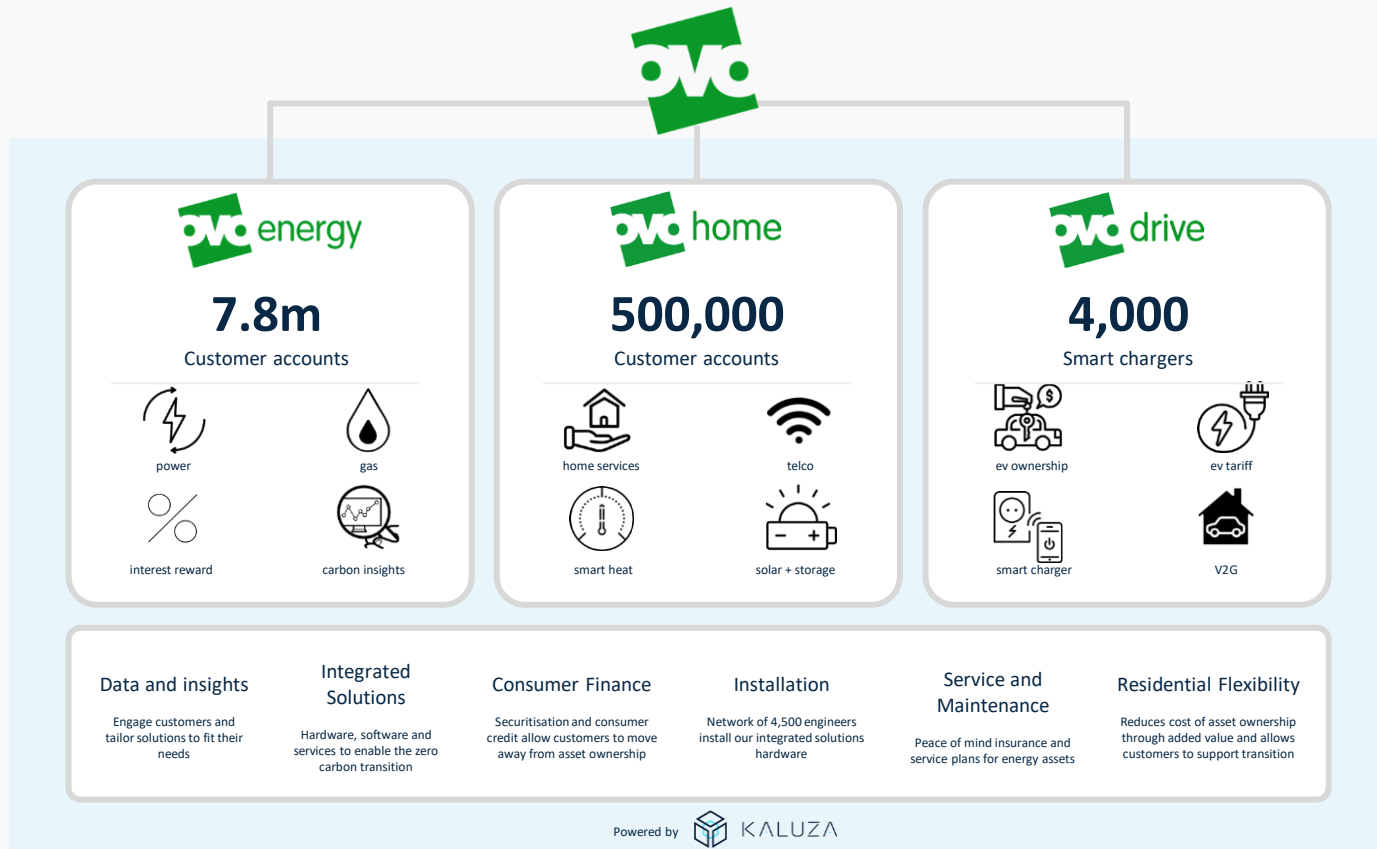
OUR JOURNEY

The only digitally enabled energy retailer at scale - Now we're commercialising our technology globally



(1) Proforma for realised synergies and adjusted for CV19 related effects and restructuring costs

We give our customers the tools to make the transition to a zero carbon life driving attractive product and cross sell opportunities



Powering OVO's UK and International retail businesses - Kaluza's platform delivers a market leading customer experience whilst also delivering the lowest cost to serve in the industry



CUSTOMER



UI + PRODUCTS



INSIGHTS



DEMAND SIDE
RESPONSE

DRIVING INCREASED CUSTOMER LIFETIME VALUE

THROUGH CUSTOMER & DATA LED NEXT BEST ACTION

850k

OVO accounts
(powered by Kaluza)

+75%

Happier
(increased NPS vs legacy)

-70%

Reduction in EV
charging costs
(per annum)

DRIVING LOWER COST TO SERVE¹

THROUGH DATA, OPTIMISATION AND LOWER PTC

-50%

Agent Handling Time

-75%

Unbilled

+350%

Customers per FTE



OPERATIONS



DATA PLATFORM



AI + ML

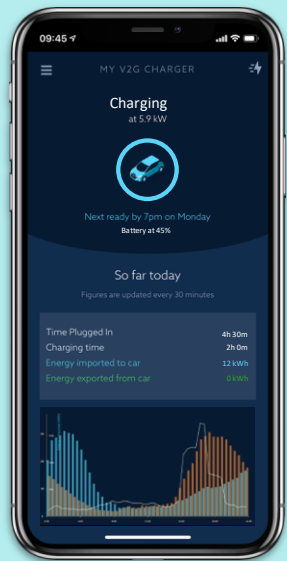


OPTIMISATION

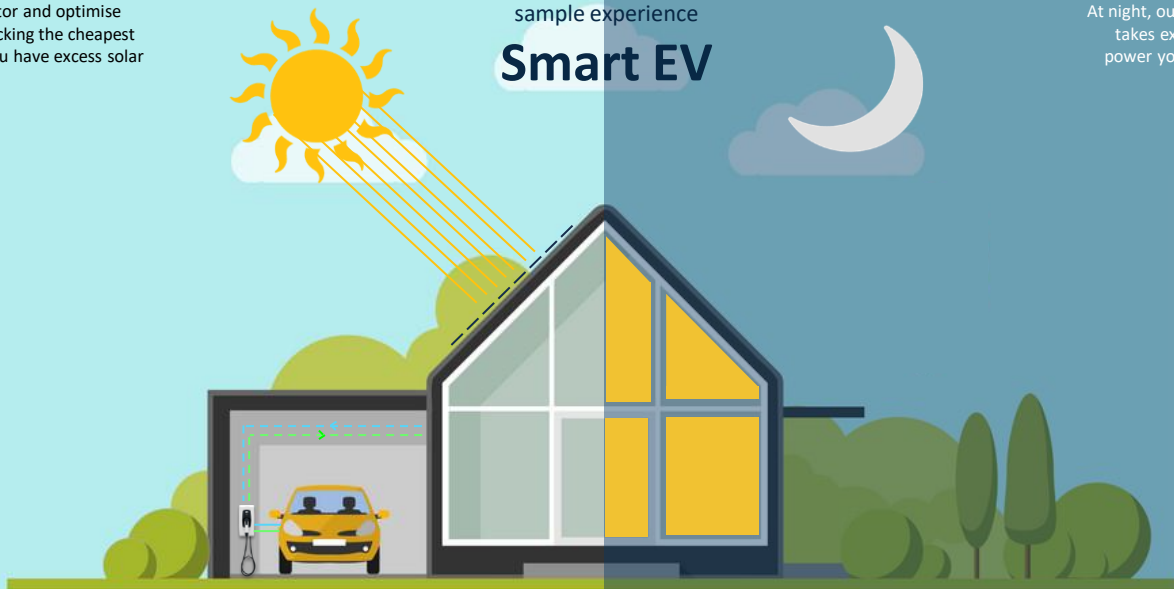
LEVERAGING TECHNOLOGY TO DELIVER VALUE

We deliver a feature packed customer experience, engaging our customers in the energy transition and creating value for them (and us)

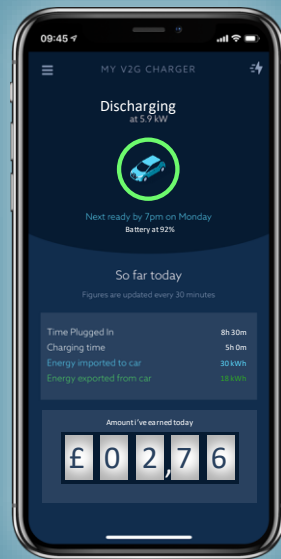
In an OVO zero carbon home, we monitor and optimise the charging of your electric vehicle, picking the cheapest half hours of the day, or times when you have excess solar to charge up



sample experience
Smart EV



At night, our revolutionary smart vehicle-to-grid charger takes excess energy out your cars battery, using it to power your home when prices are highest, saving you money



customer benefit

£250 a year

savings equivalent to 6,000 miles of free driving



Ovo to launch 'half-price' electric vehicle charging tariff

New Drive Anytime rate bids to mirror rivals' off-peak tariff with savings of 60% a year, supplier claims



▲ Ovo claims its 'type of use' tariff will be less than half the typical rate of rival suppliers by automatically charging vehicles when prices are low. Photograph: Andrew Matthews/PA

Ovo Energy plans to launch an electric vehicle charging tariff, at half the usual price, to compete with typical off-peak rates even when electricity demand is at its highest.

The UK's second-largest energy supplier will set the tariff at a flat rate of 6p per kilowatt-hour no matter what time of day their customers choose to charge their vehicle, in direct competition with suppliers which offer cut-price charging during set hours overnight.

GLOBAL EXPANSION

Across the globe, energy retail markets are deregulating and becoming more competitive, creating a global opportunity for us to realise value in multiple ways

B2C Retail

Leverage our UK experience and operating synergies to run capital light operations - bringing the best of OVO to international markets

Live in France, Spain and Australia



B2B Solutions

License our Kaluza technology solutions to incumbent utilities and energy retailers - allowing access to scale customer bases

Live in UK with EDF Energy (Flex)



Joint Venture

Combine Kaluza technology, OVO retail operating capability and incumbent energy retailers creating a winning joint venture.

JV with ENI in France



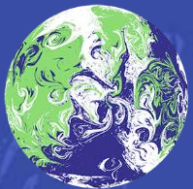
LIVE OVO OPERATIONS


NEXT TARGET MARKETS

The future of energy begins with Bangladesh

Eshrat Waris

**Principal, Product and Business,
SOLshare**



solshare 

Create a network. Share electricity.
Brighten the future



THE FUTURE OF ENERGY BEGINS WITH BANGLADESH

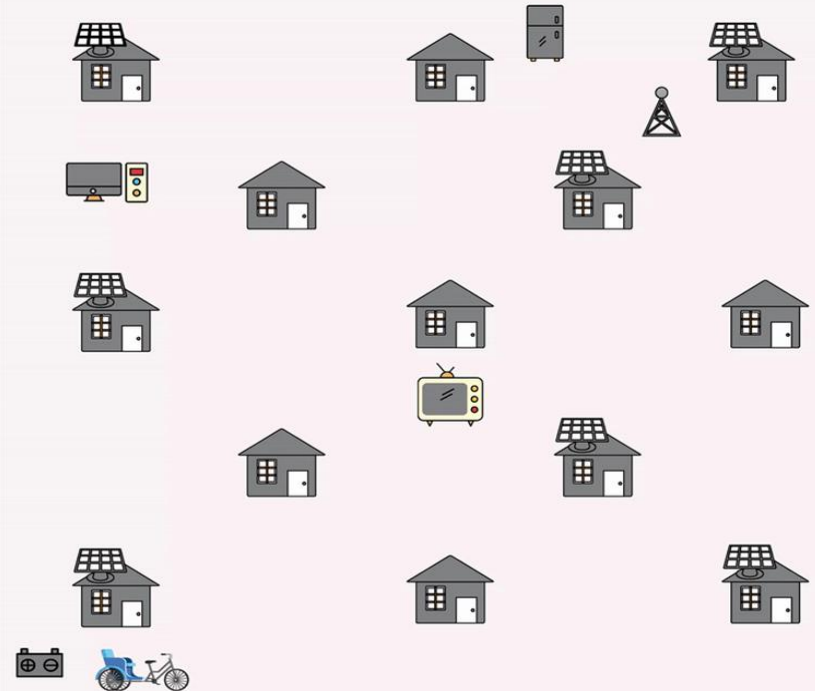
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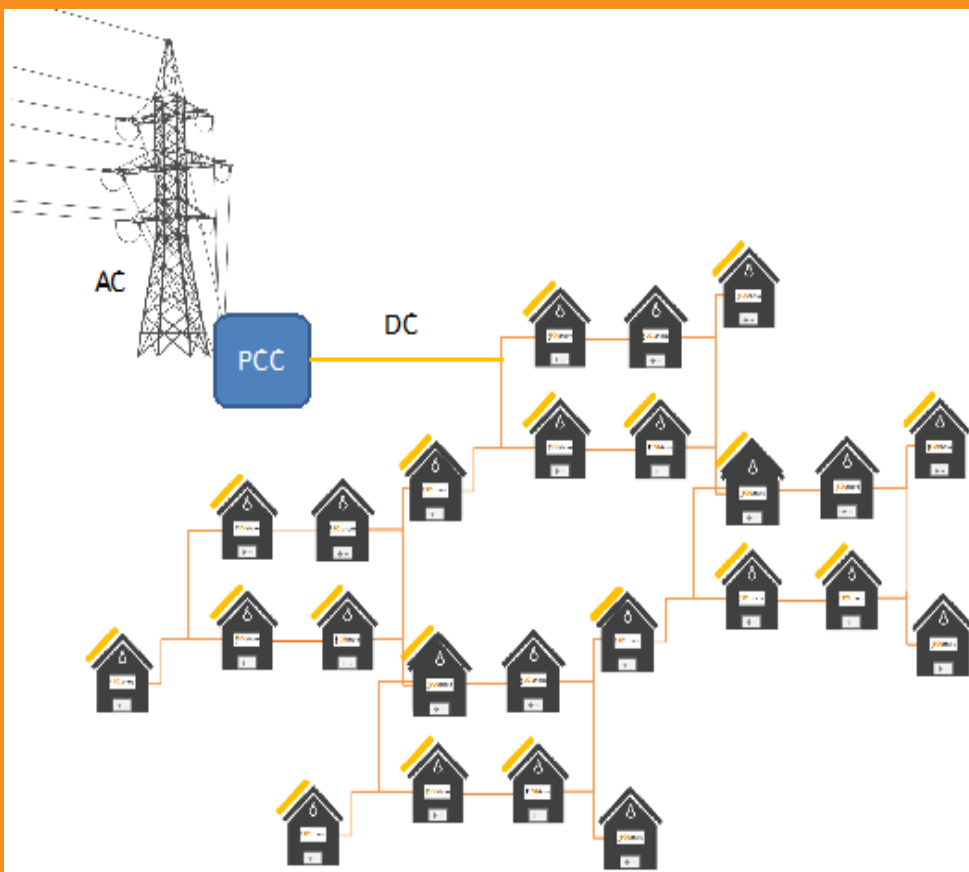
ME SOLshare Ltd.
www.me-solshare.com

solshare 



Peer to Peer Energy Trading





Point of Common Coupling



Charging Local Teslas

Next event

Climate Finance

Wednesday 3 March

1pm UK time / 7 pm BD time

Speakers will include amongst others:

- Dr. Atiur Rahman, Governor, Central Bank of Bangladesh 2009-2016
- Greater Manchester IGNITION Project
- Prof. Mizan R. Khan, Deputy Director, ICCCAD and Programme Director, LUCCC



FINANCING A CLIMATE-RESILIENT AND LOW-EMISSION FUTURE

WEDNESDAY 3 MARCH

UK-Bangladesh Climate Partnership Forum virtual series



Updates via [MottMac.com/UKBDcop26](https://mottmac.com/UKBDcop26).
Registration link in the chat →



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Moderators



Simon Maxwell

**Senior Research Associate
Overseas Development Institute**



Prof. Saleemul Huq

**Director of the International Centre for
Climate Change and Development**