



Entrepreneurship, Technology & Financial Models (ANGAN Sep. 2022)

For
Energy Efficient Buildings

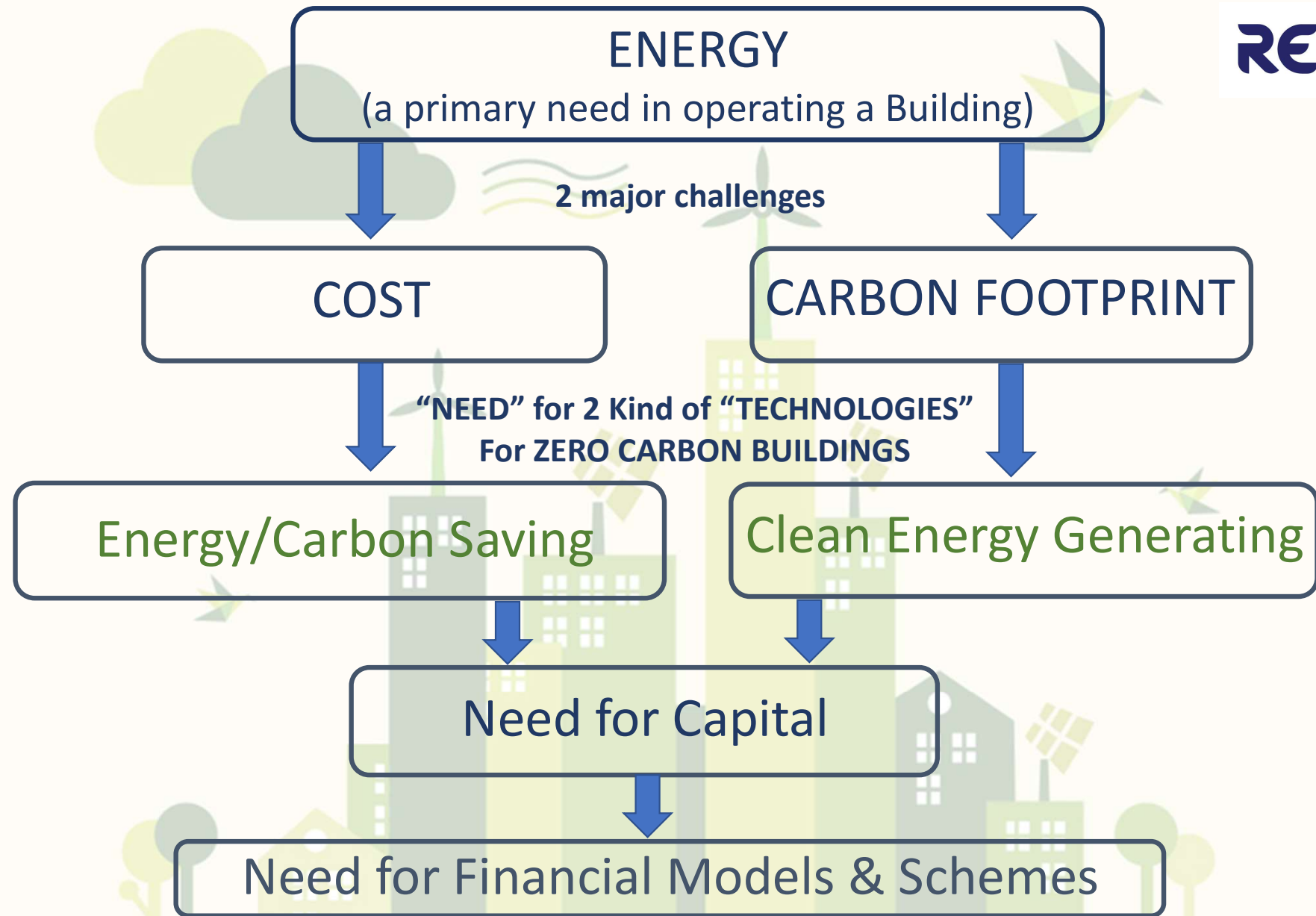
Net zero, or carbon neutral means not adding to the amount of greenhouse gases in the atmosphere

India has pledged at COP26 Glasgow Summit 2021 that India would be Net Zero by 2070

MAKING THE ZERO CARBON TRANSITION IN BUILDINGS

because

**NET ZERO BUILDING IS A FIRST STEP TOWARDS NET ZERO
NATION**



RESURGENCE OF GREEN ENTERPRENURSHIP & TECHNOLOGIES



It is a special subset of entrepreneurship that aims at creating and implementing solutions to environmental problems and to promote social change so that the environment is not harmed.

“Profit with Purpose”

EXAMPLES OF GREEN /SUSTAINABLE ENTERPRENURSHIP (key element to Net Zero mission)

- Energy Recovery (RE)
- Clean Energy - Solar & Wind (RE)
- Energy efficient technologies
- Waste to Energy (RE)
- Waste Recycling
- Rain Water Harvesting
- Vertical Gardens
- Sustainable Construction
- Green Financing



Technology Driven, Service Oriented Hybrid Renewable Energy Company

CHALLENGES OF ENTERPRENURSHIP – REVAYU IS NO EXCEPTION



- Capital Intensive R&D and Proof of Concept – Telecom Tower top & Exhaust Energy Recovery



Bharti Infra Limited, Rajasthan



Ultratech Cement, Ratnagiri



IOCL, Vizag

- Loss making start-ups considered risky & face rejections by the financial institutions - UB & IREDA
- Journey from successful proto type to commercial viability may take several years - Took 2 years from prototyping to first sale to stable & smooth operations
- Caught in a chicken and egg situation - In absence of commercial viability there is very limited sale conversion and cash flow. And without sale volumes commercial viability cannot be achieved.
- Scarce talent with risk taking appetite - On-field training for new technology can be exhausting and time consuming for technology provider as well as newly hired employees.

Core Leadership Team



Prateek Gupta - Founder & CEO, Revayu Energy

Prateek has a mechanical engineering degree from Punjab Engineering College, Chandigarh and then did his masters in management degree from University of British Columbia, Vancouver, Canada. Post the MM degree, he went to Harvard University, Boston, USA for International Business & E-Commerce. Prateek worked for two years in GMR Group where he had experience in technical design & later worked in procurement & contracts.



Siddharth Arora – Promotor Director & Co-Founder (also Angel Investor)

Siddharth has done his masters in Business Strategy from Thames Valley University, London. Have over 10 years of experience in startups in diverse verticals. Before venturing into the field of clean energy, had successfully ventured into Indoor Air Quality Vertical which is growing & doing exceptionally well.



Govind Tiwari - Corporate Affairs Officer, Revayu Energy

Govind has been a veteran in Breweries business for over 4 decades. During this period he worked with reputed organizations such as Mohan Meakins, Jupiter breweries (a UB Group company) etc. His tenure with UB Group has been the longest comprising of 27 years. During this period he worked as CEO for UB plant in Goa.



Sameer Singla – Director - Global Strategy, Revayu Energy (Pre Series Round Investor)

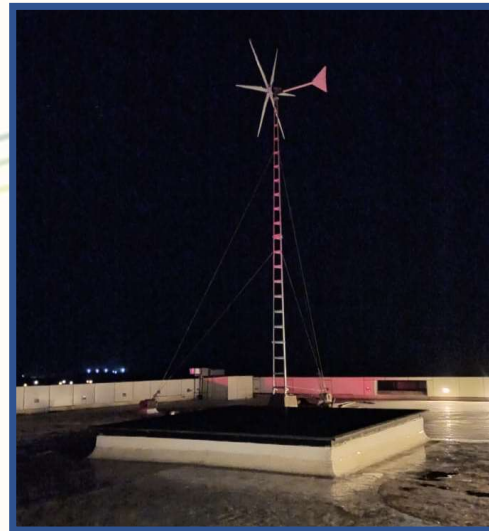
Sameer Singla brings to Revayu more than 25 years of global operating experience, having operated and invested in companies across three continents. After spending his early career in engineering management and marketing, Mr. Singla began his business-management career in China, where he grew a \$20 million division of Ashland Inc. by 280% and grew EBITDA by 200%. Since then, he has managed P&Ls up to \$950 million, at companies with manufacturing, sourcing and distribution locations worldwide. As a shareholder and director in Revayu, he will guide the company on financial strategy, developing global strategic alliances and geographic expansion.

CLEAN ENERGY PRODUCTS OFFERED BY REVAYU

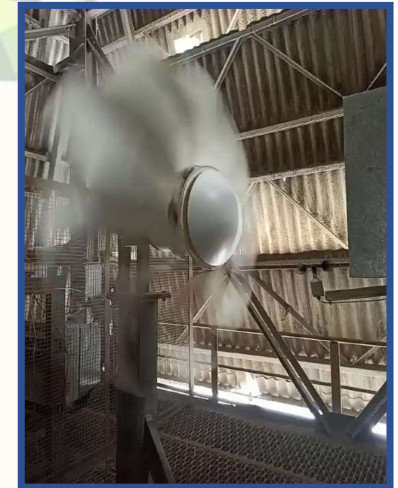
REVAYU
Energy



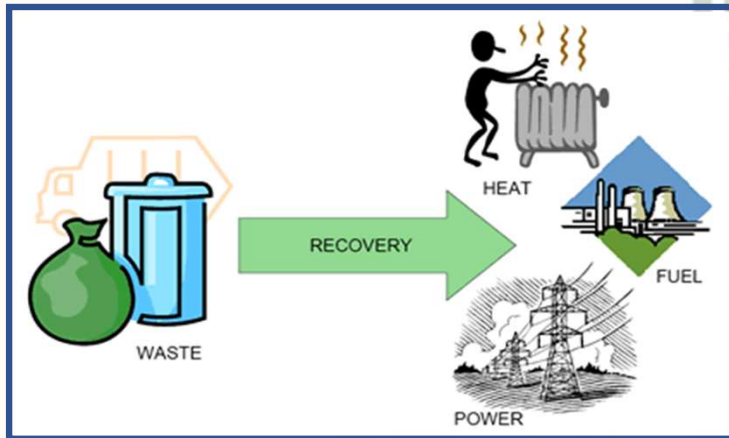
BMS Integrable SOLAR PV



**BMS Integrable Micro Wind
(2-5 KW models)**



**BMS Integrable Waste Wind
to Energy**



BMS Integrable Organic Waste to Energy

Revayu Ventures Into



BMS Integrable Semi-Utility Scale Storage

SOLAR ENERGY PRODUCTS & SOLUTIONS OFFERED BY REVAYU



Technological advancements, Most commercially viable RE, Easy access to expertise, Clear policy



Solar Ground Mounted



Solar Car Ports



Solar Street Light



Vertical Solar / BIPV



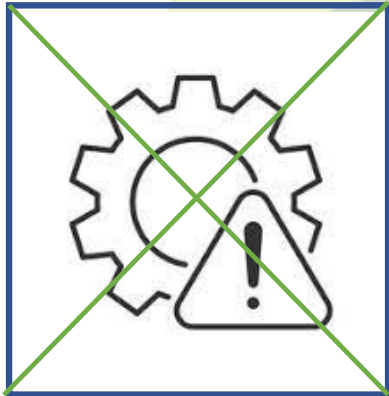
Solar Rooftops



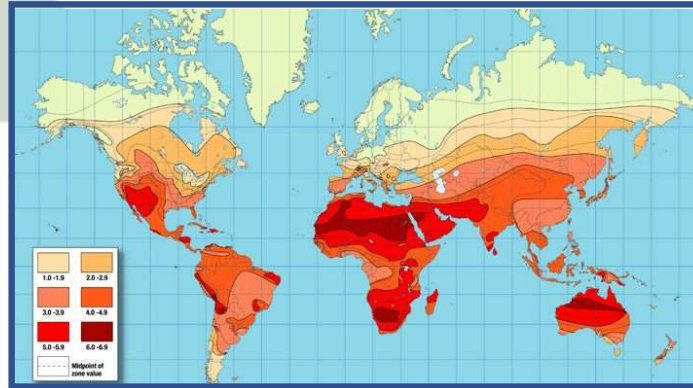
Solar Trees



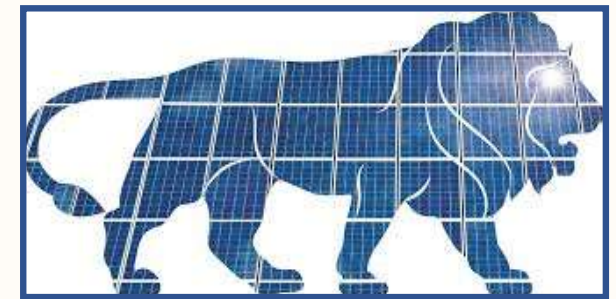
WHAT MAKES SOLAR PV MOST ACCEPTABLE RE TECHNOLOGY?



No Mechanical Breakdowns



Uniform potential across geographies



Subsidy, Net metering & other Govt Policies in place



Cost Effective
(payback less than 5 years)



Public Acceptance



Reliable O&M & Support system
(Post sales support has become critical & if required there is option to switch)

BUT THERE ARE CERTAIN MAJOR CHALLENGES WITH SOLAR?



No power during night & Snow
(Very less during cloudy, rainy & foggy whether)



Consumes Expensive & Scarce Space
(which limits the installable capacity)



Frequent Cleaning required
(Which leads to higher operating cost, water consumption and breach in security)

Small Wind Power is Complimentary to Solar PV & not its substitute

Provides power also during evenings & nights
(Monsoon brings strong winds, wind compensates for solar loss)

Does not consume entire ground surface like solar
(can be roof mounted)

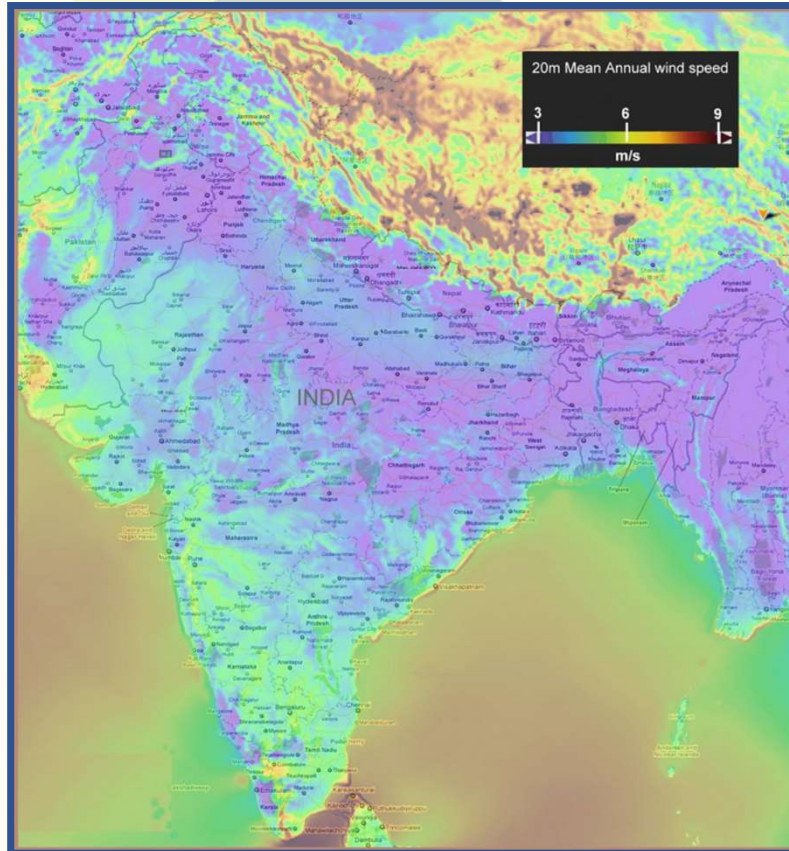
No cleaning or regular site intervention required

HENCE REVAYU PROVIDES, SOLAR & WIND HYBRID SOLUTIONS TO PROVIDE MORE CONSISTENT & RELIABLE CLEAN POWER THROUGHOUT THE YEAR



India Hybrid Wind Solar Map

Wind Map of India



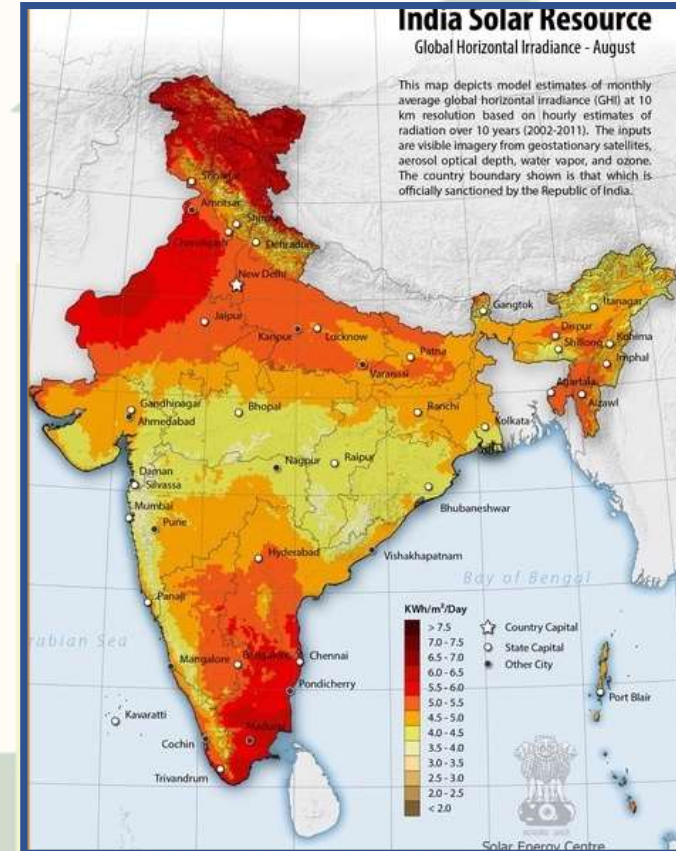
Hybrid Ratio

Wind:Solar = 20:80

Wind Speed > 4m/s

Solar Irradiation > 6 kWh/m²/day

Solar Map of India



Hybrid Ratio

Wind:Solar = 50:50

Wind Speed > 6m/s

Solar Irradiation > 5 kWh/m²/day

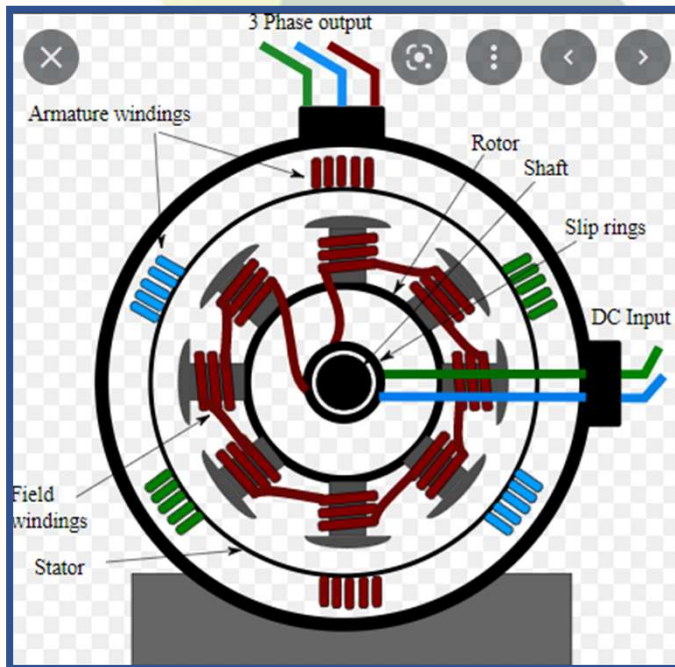
Hybrid Ratio

Wind:Solar = 80:20

Wind Speed > 7 m/s

Solar Irradiation < 4 kWh/m²/day

PROBLEMS OF SMALL WINDS ADDRESSED BY REVAYU...



ELECTRO-MAGNETIC INDUCTION BASED WIND GENERATORS

(No mechanical wear & tear of mechanical parts as there is no direct contact & friction between rotor & stator)

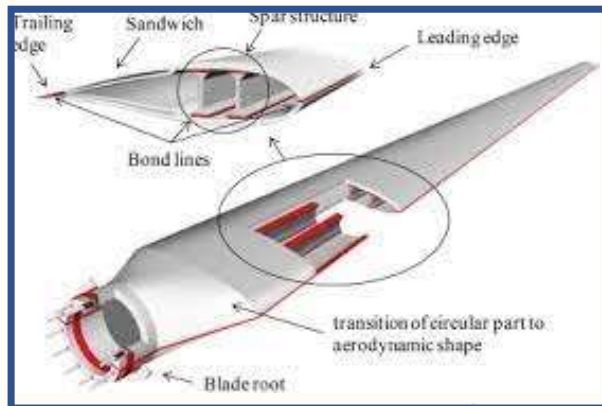


**TOWER & TURBINE CAN BE BROUGHT
DOWN WITHOUT CRAINE**
(Working at height can be risky & team work not possible. Use of craine increase I&C and O&M cost)



TRAIN & INCETIVISE LOCAL TECHNICIANS
(As first line of service)

PROBLEMS OF SMALL WINDS ADDRESSED BY REVAYU



JOINT LESS BLADES
(As first line of service)



REMOTE MONITORING
(User & Service interface)



LAUNCHED 6 & 9 BLADE VERSIONS
(Worked on elementary issues like
Vibrations, sound & energy efficiency)

FINANCIAL CHALLENGES & FINANCIAL MODELS



**Renewable Energy Projects for
commercial establishments can be highly
CAPITAL INTENSIVE**



RE Industry (including Revayu) introduced RESCO (Renewable Energy Service Company) to its clients.

RE COMPANY INVESTS CAPITAL TO SET UP A PLANT (Under BOOM/BOOT Model)



CONSUMER IS CHARGED BY THE RE COMPANY AS PER THE NO. OF UNITS SUPPLIED AT MUTUALLY AGREED TARRIF



**THE SURPLUS POWER GENERATED IS FED INTO THE GRID AND ADJUSTED IN THE BILL AS PER
POWER DISTRIBUTOR POLICY**



IF THE TARRIF IS LOWER THAN GRID POWER DISTRIBUTOR, CONSUMER STARTS SAVING WITHOUT CAPITAL

LOOKS SIMPLE & SORTED BUT MAJOR CHALLENGES STILL LOOM....!!!

CHALLENGES THAT STILL NEEDS TO BE ADDRESSED THROUGH INNOVATIVE FINANCIAL STRATEGIES & FINANCIAL MODEL



- **FINANCIAL INSTITUTIONS & BANKS STILL DON'T CONSIDER SOLAR / RE PLANT AS AN MORTGAGABLE ASSET**
- **TECHNOLOGY & R&D DRIVEN STARTUPS USUALLY HIT LOSSES IN INITIAL YEARS AND GETS DISQUALIFIED FOR EVEN PROFITABLE PROJECTS**
- **ALL FINANCIAL INSTITUTIONS AIM FOR HIGHEST CREDIT RATING OF CLIENT & DEVELOPER – AS A RESULT MSME SECTOR & MID SIZE INSTITUTIONS ARE DEPRIVED**
- **THIS FINANCIAL MODEL IS NOT SUITED TO EMERGING RE TECHNOLOGY LIKE CAPTIVE STORAGE OR SMALL WIND TURBINE**

REVAYU'S RECENT INNOVATIVE STEP TO ADDRESS THESE CHALLENGES

DEFERRED CAPEX MODEL

Where we can get the consumer directly financed with 75% loan AGAINST MORTGAGE OF UPCOMING SOLAR PLANT

Technology provider provides minimum generation guarantee to the consumer to ensure that Solar plant becomes VIRTUALLY EMI FREE (Earned out of Savings from Clean power generated)

INNOVATIVE FINANCIAL MODEL TO ADDRESS THESE CHALLENGES

DEFERRED CAPEX MODEL

It is called DEFERRED CAPEX model as CAPEX transforms into Operating Expenditure across 6-10 years

Where we can get the consumer directly financed with 75% loan AGAINST MORTGAGE OF UPCOMING SOLAR PLANT

Technology provider provides minimum generation guarantee to the consumer to ensure that Solar plant becomes VIRTUALLY EMI FREE (Earned out of Savings from Clean power generated).

After the completion of virtual loan term, the consumer becomes the owner of Solar Plant

Primary difference is that financing is disbursed to consumer instead of technology provider

RECOMMENDATIONS TO UNLEASH THE POTENTIAL & ACCELERATE ADOPTION CLEAN ENERGY IN MSME SECTOR

Banking should think of TREATING SOLAR PLANT AS MORTGAGEABLE ASSET like in case of auto financing

And value of asset can be ascertained on the basis of (say 80% off) estimated value of clean power it can generate over the life time.

Even the non-profitable registered start-ups with some experience criteria shall be eligible for such financing

THANK YOU

