Agrivoltaics-Based JCM Project for Synergistic Climate Action and Societal Resilience

Presented by:
Dipal C Barua
Founder & Chairman
Bright Green Energy Foundation (BGEF)

Collaborators: TERRA Inc, (Japan)

Bright Green Energy Foundation
Powering Our Future

Current 4% RE → 50%RE for Net Zero

RE 50%+
for Net Zero

Current power generation capacity 26700 MW

RE 4%
In 2023

RE 30% by 2041

RE 20%
In 2030

Issues

Land shortage

Absence of integrated plan and collective actions

Needs US$1.71 billion annually

Low penetration rate of innovative RE technologies

THE RENEWABLE ENERGY POLICY 2025

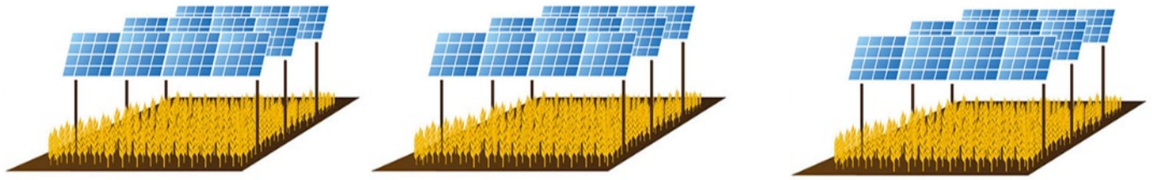
POWER DIVISION

MINISTRY OF POWER, ENERGY AND MINERAL RESOURCES

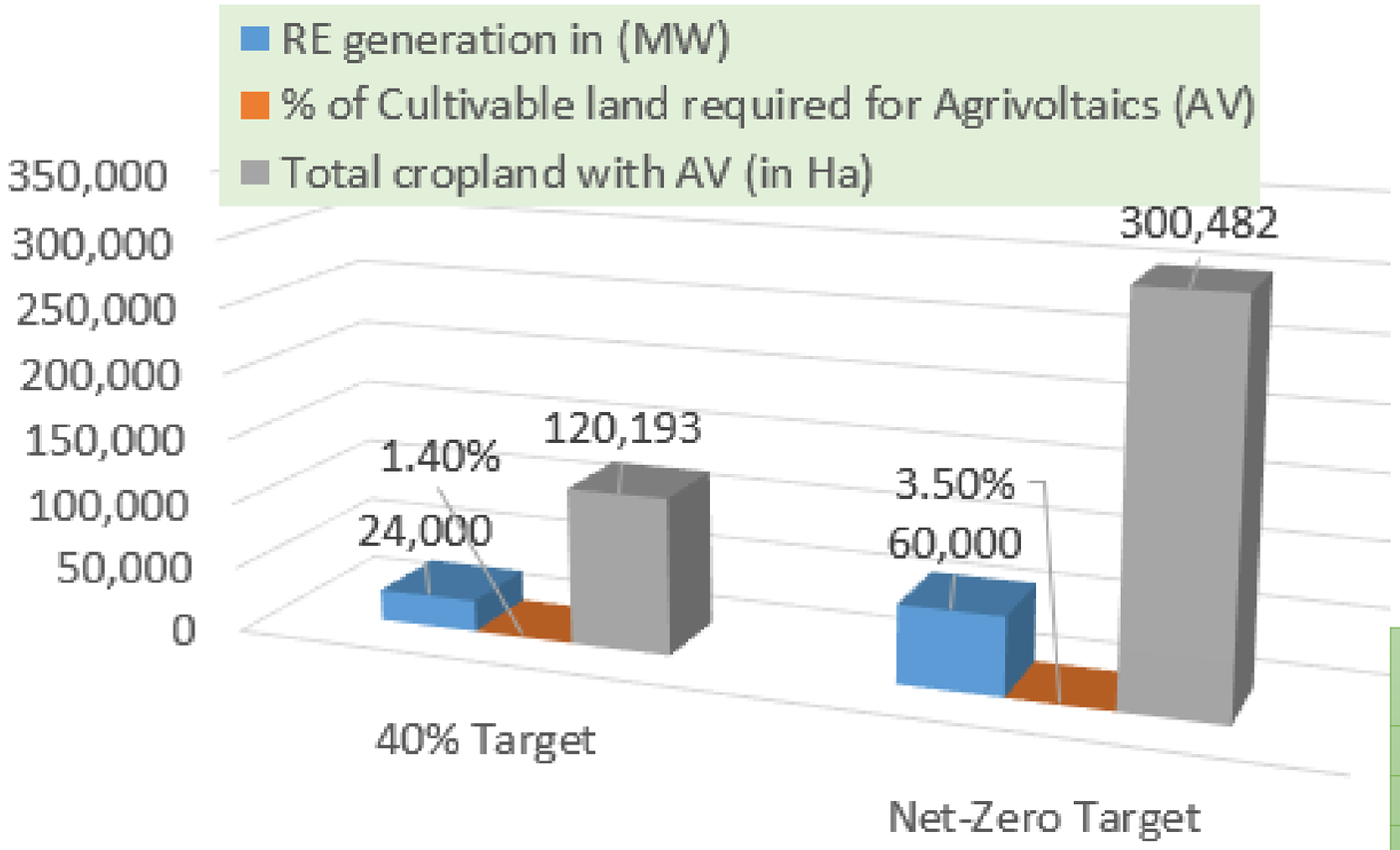
THE PEOPLE'S REPUBLIC OF BANGLADESH

28 May 2025

6.2 It is the primary responsibility of the RE project developer to acquire/lease/purchase the land required for the project development. The developer shall be permitted to set up renewable energy project on private non-agriculture land without the requirement of land conversion under the provisions of the GoB Act, and the rules made thereunder. Co-existence of agriculture with RE project (i.e. agri-voltaic) will be encouraged to ensure food security in parallel with energy security.

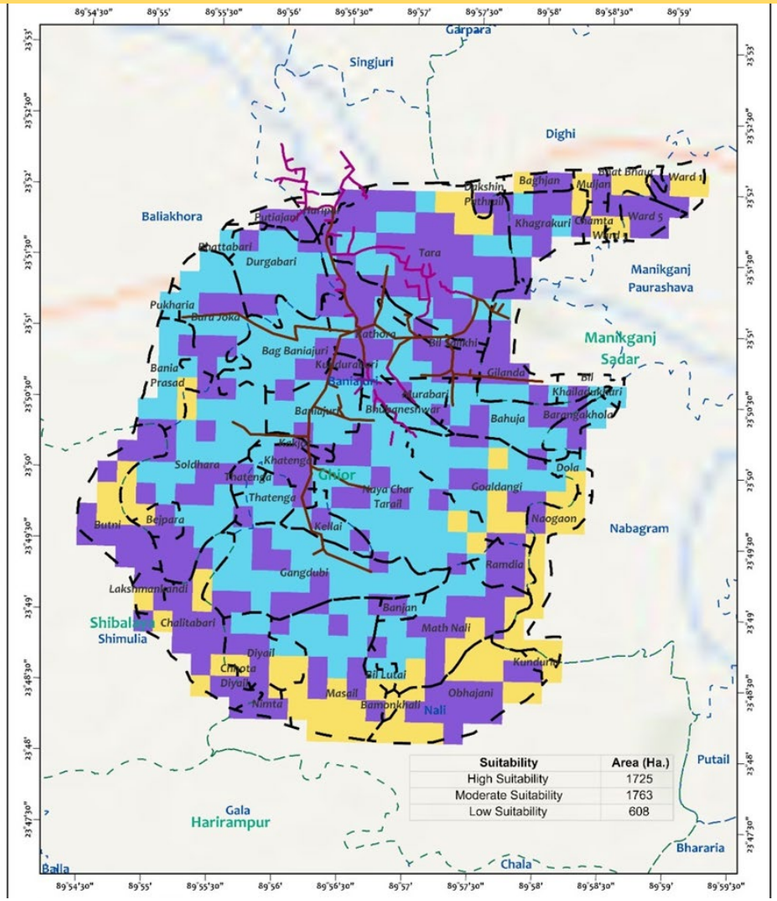


Potential of Agrivoltaics in Bangladesh



Source: Mitra et al. 2024

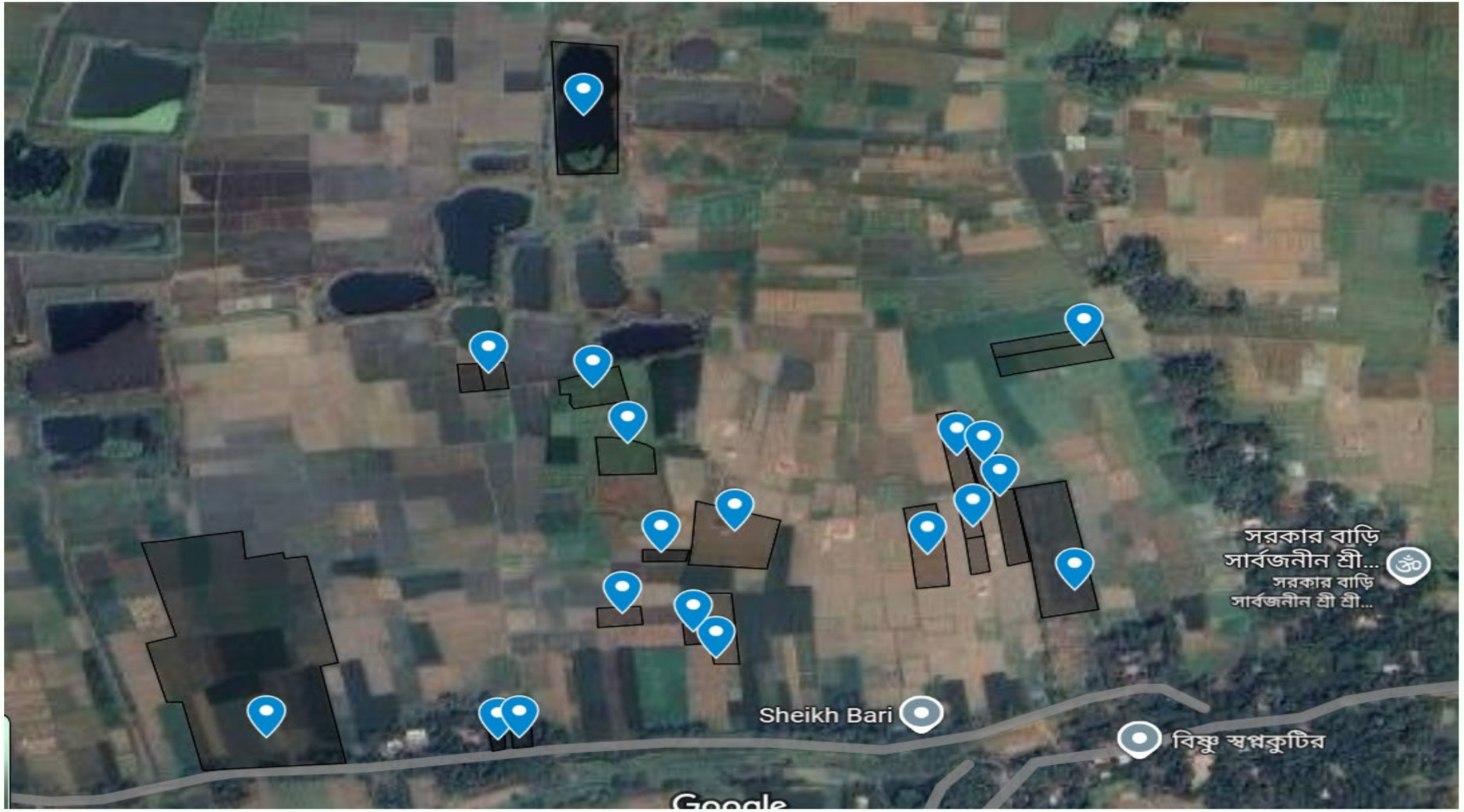
Suitable areas for AV in Ghior Upazila, Manikganj



Suitability	Area (ha.)	RE Generation potential (MW)	**Carbon mitigation potential (tCO2/year)**
High	1725	345	**174703**
Moderate	1763	353	**178754**
Low	604	121	**61273**
Total		818	**414730 (~.5 M tCo2/year)**

Japan Inspired Design is the key feature of the proposed 1 MW for AV project: Lessons from visit of MEN X ENE (Chiba) and Aomori Kenmin Energy project in Hachinohe

Proposed 1 MW Agrivoltaic Site in Ghior, Manikgonj



Proposed Model of Agrivoltaic based local actions towards decarbonized society

Agrivoltaics-based JCM project

An innovative approach for synergistic realisation of decarbonized society and revitalisation of farm livelihoods

Ground-mounted solar plant

Conventional Farming

Clean Energy Generation

Carbon mitigation

Air quality improvement

Improved Food security

Creation of green jobs

Farm-based livelihoods

Efficient landuse

Health benefits

Increase land productivity

Resilient and smart society

Annual Emission Reduction 854 tCO2

Homes + Facilities

Schools

Cold Storage

7% Uninterrupted supply of energy

8% Increased durability of farm produce

Microgrid

Local use of solar energy 1400 MWH/year

Utility Grid

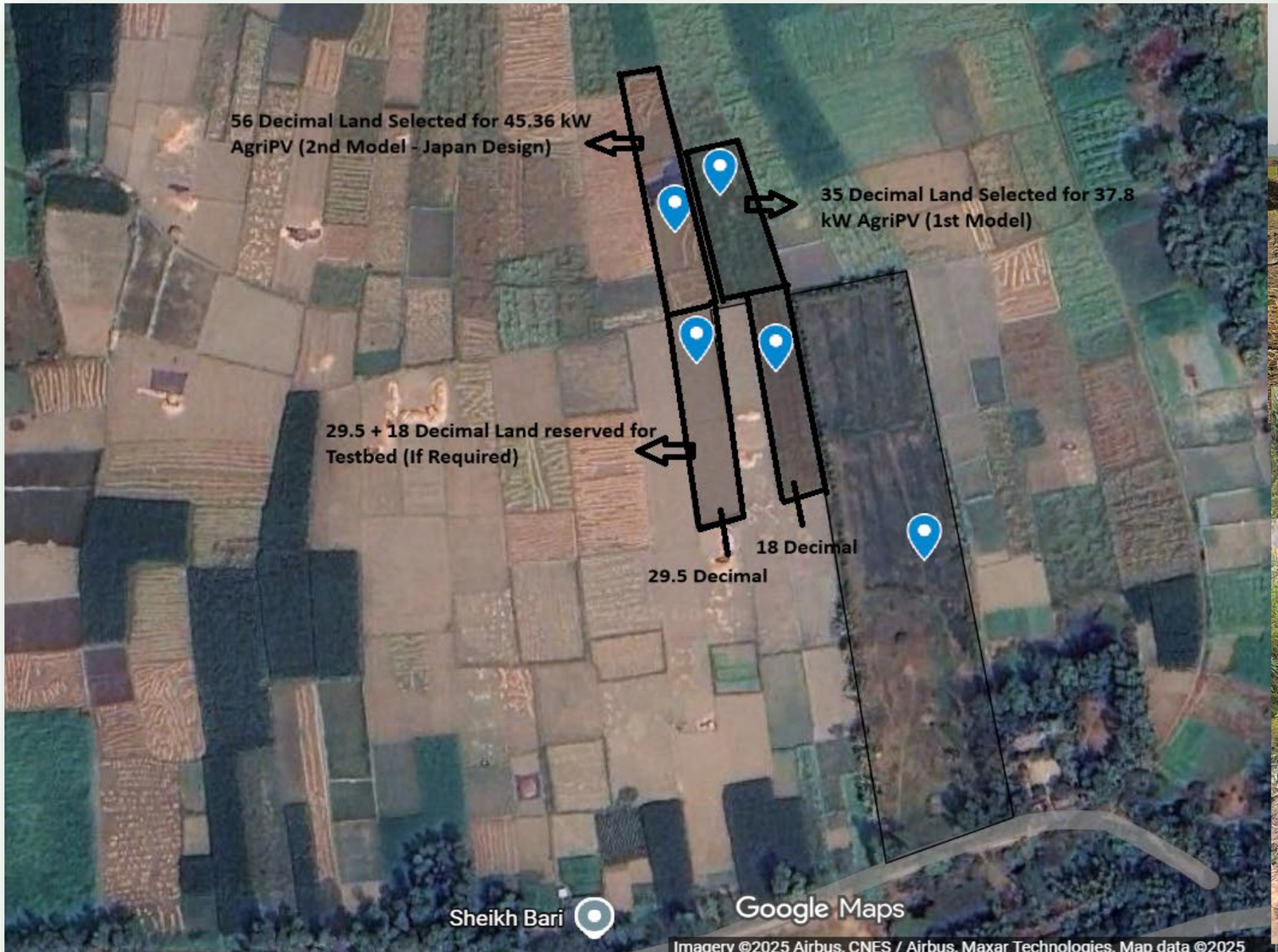
70% Surplus Revenue through excess energy

10% Technological reform for smart irrigation and mechanisation

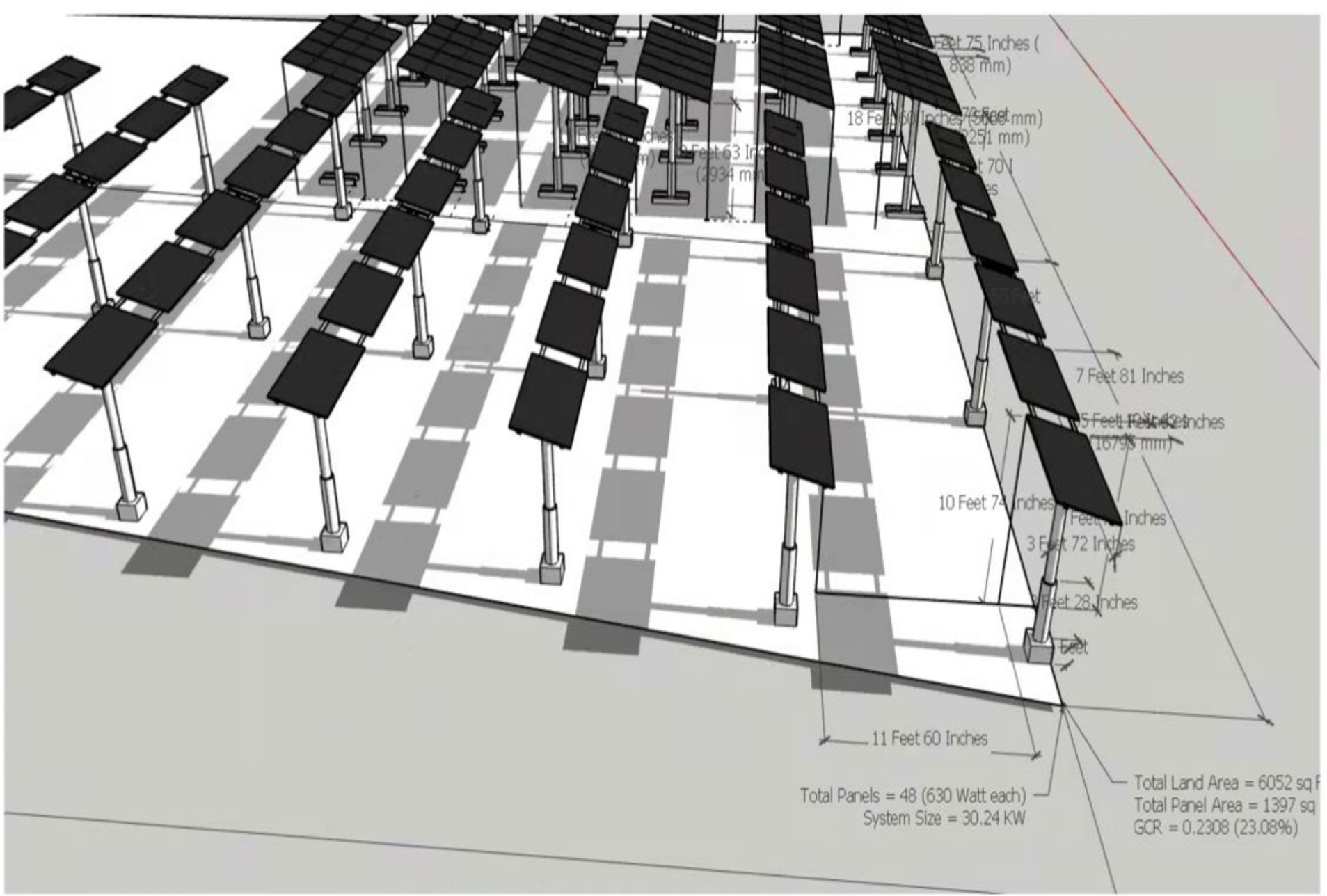
7% Resilience of local energy systems and alternative income

Ongoing Agrivoltaics Pilot Project

In Collaboration with BRAC Institute of Governance and Development (BIGD), BRAC University, H&M Foundation and Bright Green Energy Foundation (BGEF)



DESIGN OF THE PILOT PROJECT (2nd PHASE)



1. Gap between rows is 11 feet 60 inches
2. Total no. of panels are 48 with 8 rows & system size is 30.24 kW
3. Total land area is same as 6052 sq feet and total area of the panels is 1397 sq feet
4. The GCR is 0.2308 (23.08%)

Thank You for your Kind Attention