

Development of Electrification by Solar PV in Bangladesh

C. M. Iftexhar Hussain

School of Civil and Structural Engineering

Supervisors:

Professor Brian Norton

Professor Aidan Duffy



Current scenario

- Approximately 3.5m of 36m houses use Solar Home Systems
- 65,000 new connections in every month
- 150MWp total installed and commissioned solar plants
- GoB imposed 5-7% load of a building has to be run by solar.
- Large scale solar power plants are being encouraged in local government facilities.
- Many solar grid-tie, off-grid and hybrid systems are coming in operation with capacity range: 10kWp – 200kWp
- More than 100 solar irrigation pumps are currently operating
- Mobile operators are using solar system to support their BTS.

Major Financers

- Infrastructure Development Company Ltd. (IDCOL)
 - World Bank
 - Asian Development Bank
 - Japan International Corporation Agency
- Climate Change Trust Fund (CCTF)
 - Government of Bangladesh (GoB)



My Experience in Bangladesh Renewable Energy Industry

Electro Solar Power Ltd.

- 15 × 30kWp Plant for Bangladesh Rural Electrification Board.
- 80kWp plant for Bangladesh Water Development Board.
- 40kWp plant for Bangladesh Power Development Board.

GRAM Ltd.

- 55kWp plant for Civil Aviation Authority of Bangladesh.



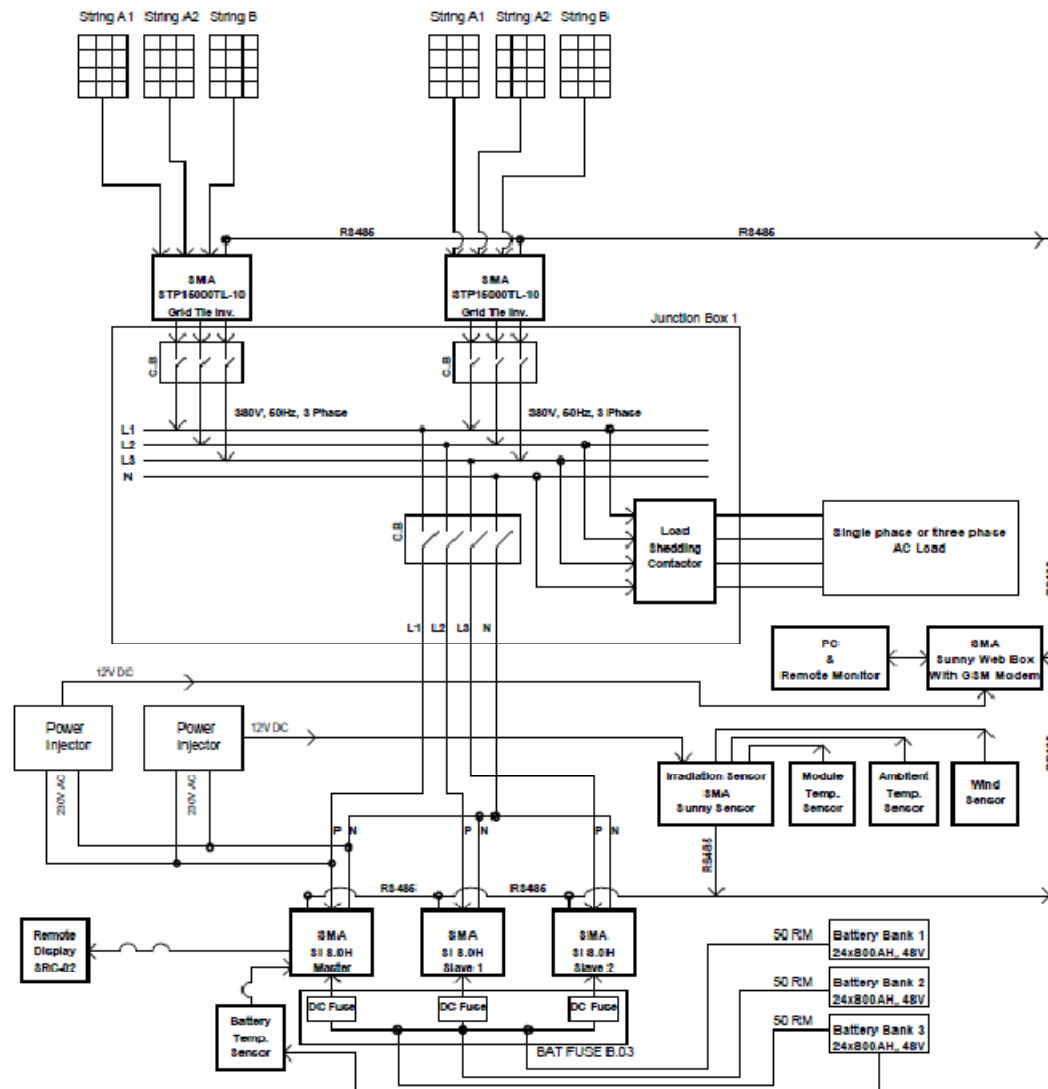
30kWp PV System in 15 Local Government Facilities



Project Features:

- 6hr Battery Storage
- 100 × 300Wp PV panels
- 2 × 15kW Grid-Tie Inverters
- 3 × 6kW Off-Grid Inverters
- Project Investment: **EUR 95,903**
- Expected Service Life: 25 Years

30kWp System Schematic Diagram



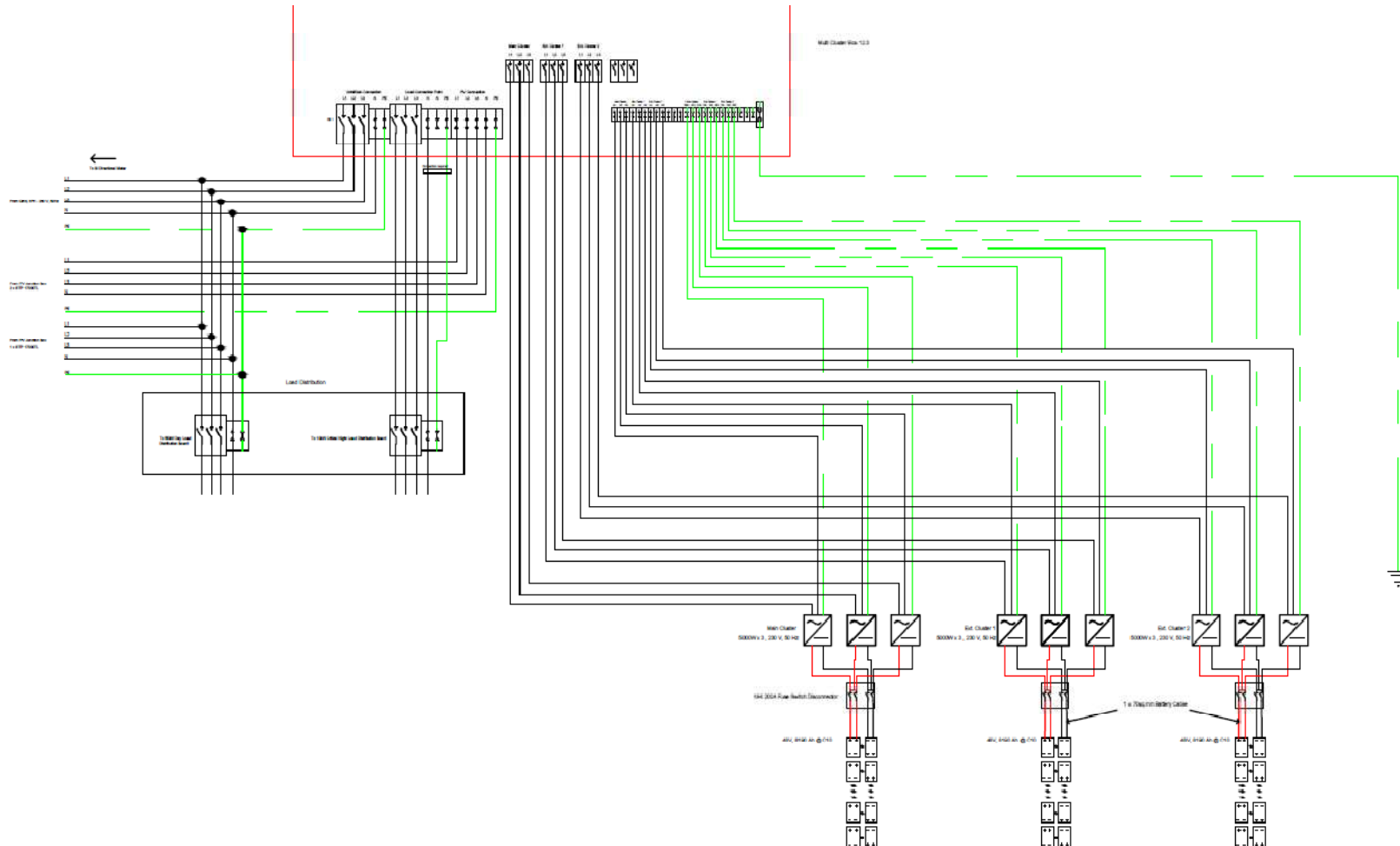
55kWp PV Plant at CAAB



Project Features:

- 12hr. Battery Storage
- 216 × 255Wp PV panels
- 3 × 17kW Grid-Tie Inverters
- 9 × 6kW Off-Grid Inverters
- 1 Multi-cluster Unit
- Project Investment: **EUR 585,573**
- Expected Service Life: 25 Years

55kWp System Schematic Diagram



Challenges

- Old and weak building structures
- Difficulties finding suitable place for panel mounting and control room
- Insufficient awareness
- Unauthorized connections
- Replacement of faulty items
- Delay in product deliveries

Thanks...

