CEB Digitalization Journey

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இலங்கை மின்சார சபை
CEYLON ELECTRICITY BOARD

Sri Lanka - Country Profile

- An island nation with 22 million people.
- Has reached 100% electrification with 6.8 million customers.
- Installed capacity 4265 MW, peak load 2600 MW, 45 GWh daily Energy.
- 220kV and 132 kV Transmission voltage, 79 GSS.
- Hydro, Coal, Furnace Oil and Auto Diesel powered dispatchable generation.
- NCRE
  - Mini hydro
  - Wind
  - Solar
  - Biomass
- Target of meeting 70% of annual energy requirement from renewable and clean sources , by year 2030.

The Roadmap of CEB Digitalization

The Roadmap for Digital Transformation of Sri Lankan Power Utilities, prepared in 2018.

- Establishing a reliable Information Technology infrastructure.
- Mobile enablement of applications.
- Enterprise Resource Planning (ERP).
- Smart Meters and Advance Metering Infrastructure.
- Smart Grid initiatives.
  - For maximum NCRE integration.

Smart Meters and AMI

Several smart meter projects started on pilot basis.

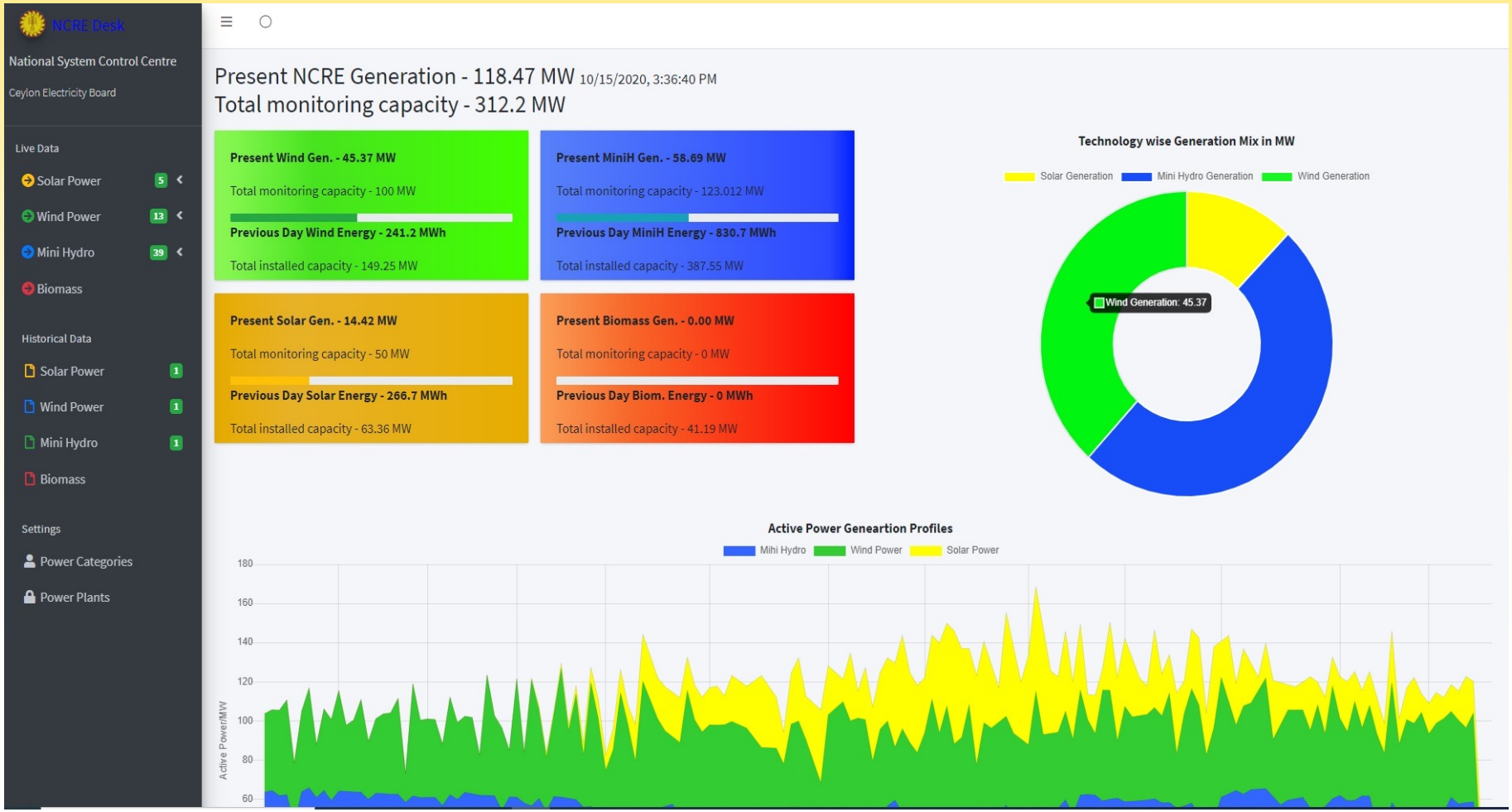
- 1000 smart metered customers.
- Extended to one Consumer Service Centre 15,000 customers.
- One Urban area with about 50,000 customers.

AMI solutions need to be evaluated taking Economic and HR factors.

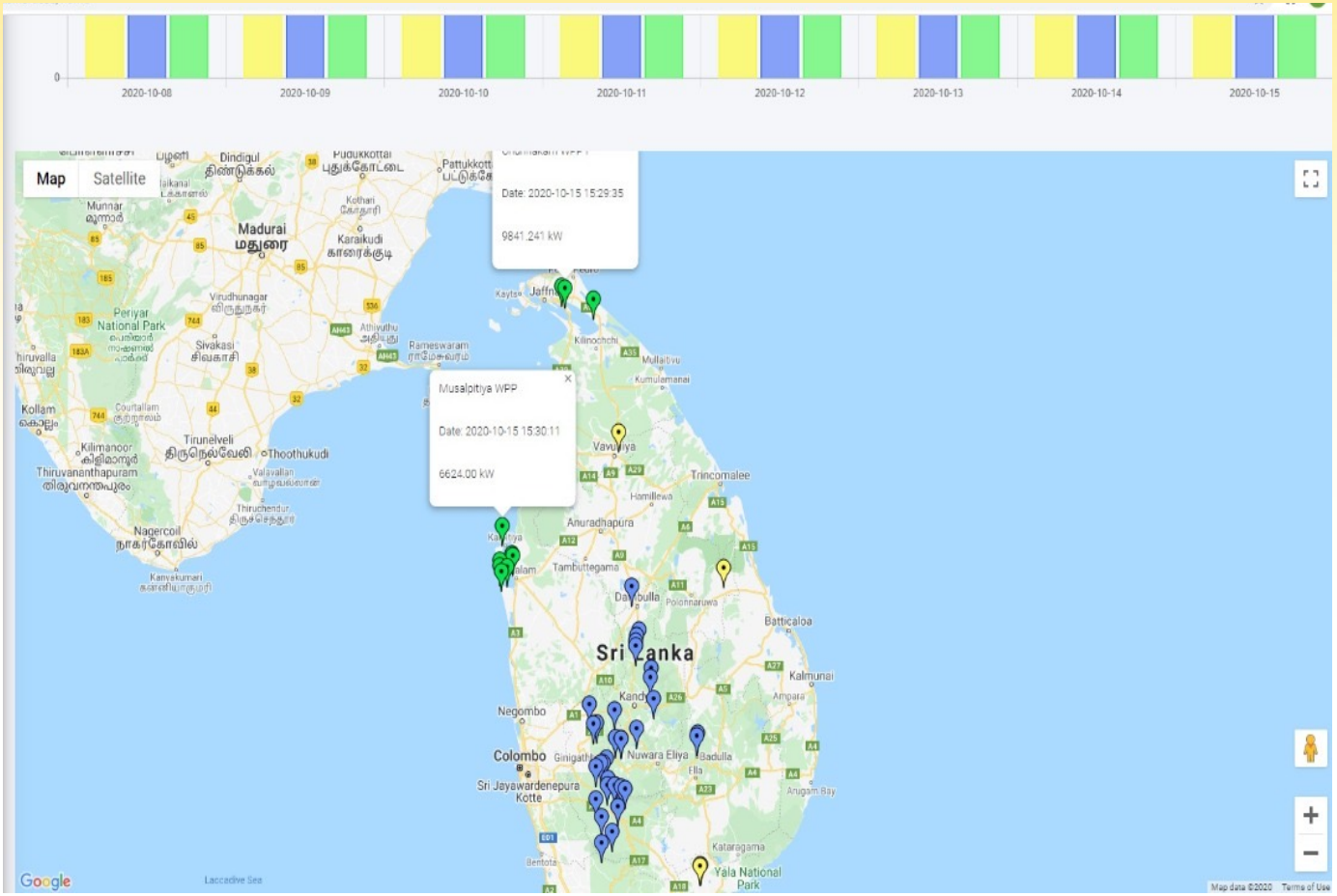
- Connecting selected subset of customers.
- Solar rooftop customers.
- Customers at the ends of power distributed lines.
- High end customers.
- Customers with electronic meters.
- New customers.

Renewable Desk at the System Control Centre

- Around 800 MW generation is from non dispatchable NCRE (total installed capacity 4,265 MW)
  - Mini Hydro Stations 208Nos, capacity 410 MW
  - Grid connected Solar, Biomass 125 MW
  - Wind installed 250 MW (148MW in 2020)
- Rooftop solar > 300MW from > 22,000 customers.
- Almost all NCRE are not telemetered and not visible to SCC.
  - Mostly Embedded generation
  - Appears as negative loads to the system
- NCRE is weather dependent.
  - Can be predicated if correlated to weather forecast.
  - Especially useful in solar generation where total generation is not metered.
- Renewable Desk is now installed at SCC.
- **We have an Ambitious target of generating 70% of energy from renewable and clean energy sources by year 2030**.


NCRE Desk
National System Control Centre
Ceylon Electricity Board
Live Data
Solar Power 5
Wind Power 13
Mini Hydro 39
Biomass
Historical Data
Solar Power 1
Wind Power 1
Mini Hydro 1
Biomass
Settings
Power Categories
Power Plants
Present NCRE Generation - 118.47 MW 10/15/2020, 3:36:40 PM
Total monitoring capacity - 312.2 MW
Present Wind Gen. - 45.37 MW
Total monitoring capacity - 100 MW
Previous Day Wind Energy - 241.2 MWh
Total installed capacity - 149.25 MW
Present MiniH Gen. - 58.69 MW
Total monitoring capacity - 123.012 MW
Previous Day MiniH Energy - 830.7 MWh
Total installed capacity - 387.55 MW
Present Solar Gen. - 14.42 MW
Total monitoring capacity - 50 MW
Previous Day Solar Energy - 266.7 MWh
Total installed capacity - 63.36 MW
Present Biomass Gen. - 0.00 MW
Total monitoring capacity - 0 MW
Previous Day Biom. Energy - 0 MWh
Total installed capacity - 41.19 MW
Technology wise Generation Mix in MW
Solar Generation
Mini Hydro Generation
Wind Generation
Wind Generation: 45.37
Active Power Geneartion Profiles
Mihi Hydro
Wind Power
Solar Power
Active Power/MW
180
160
140
120
100
80
60

Renewable Desk at SCC



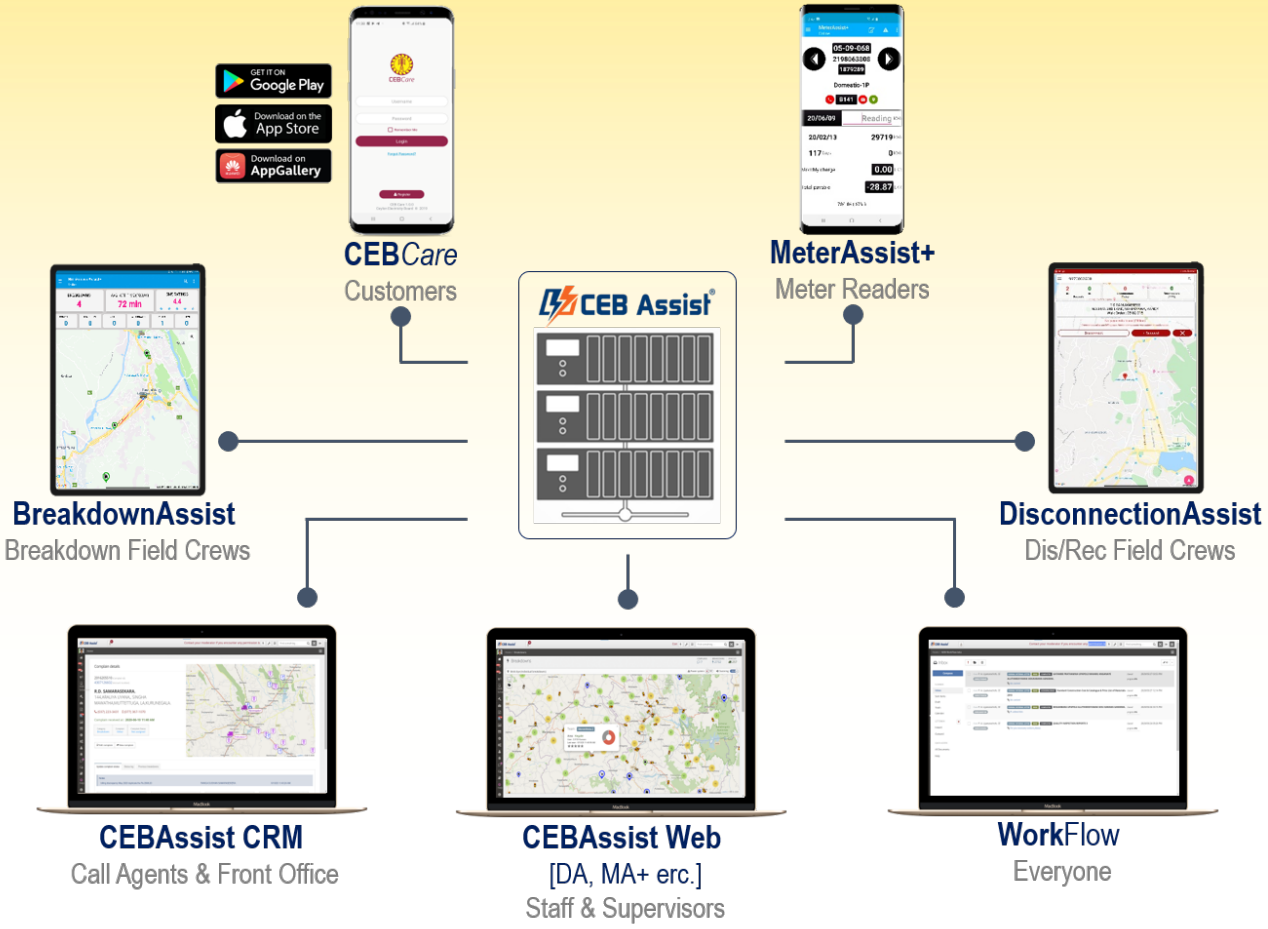
Smart Grid for Ceylon Electricity Board

- National System Control Centre for monitoring and controlling of the network.
- Substation automation systems (SAS)
- All GSS are connected to SCADA System via Optical Fibre network
- Energy Management System (EMS)
- Wide Area Monitoring System, A framework for Demand Response are planned.

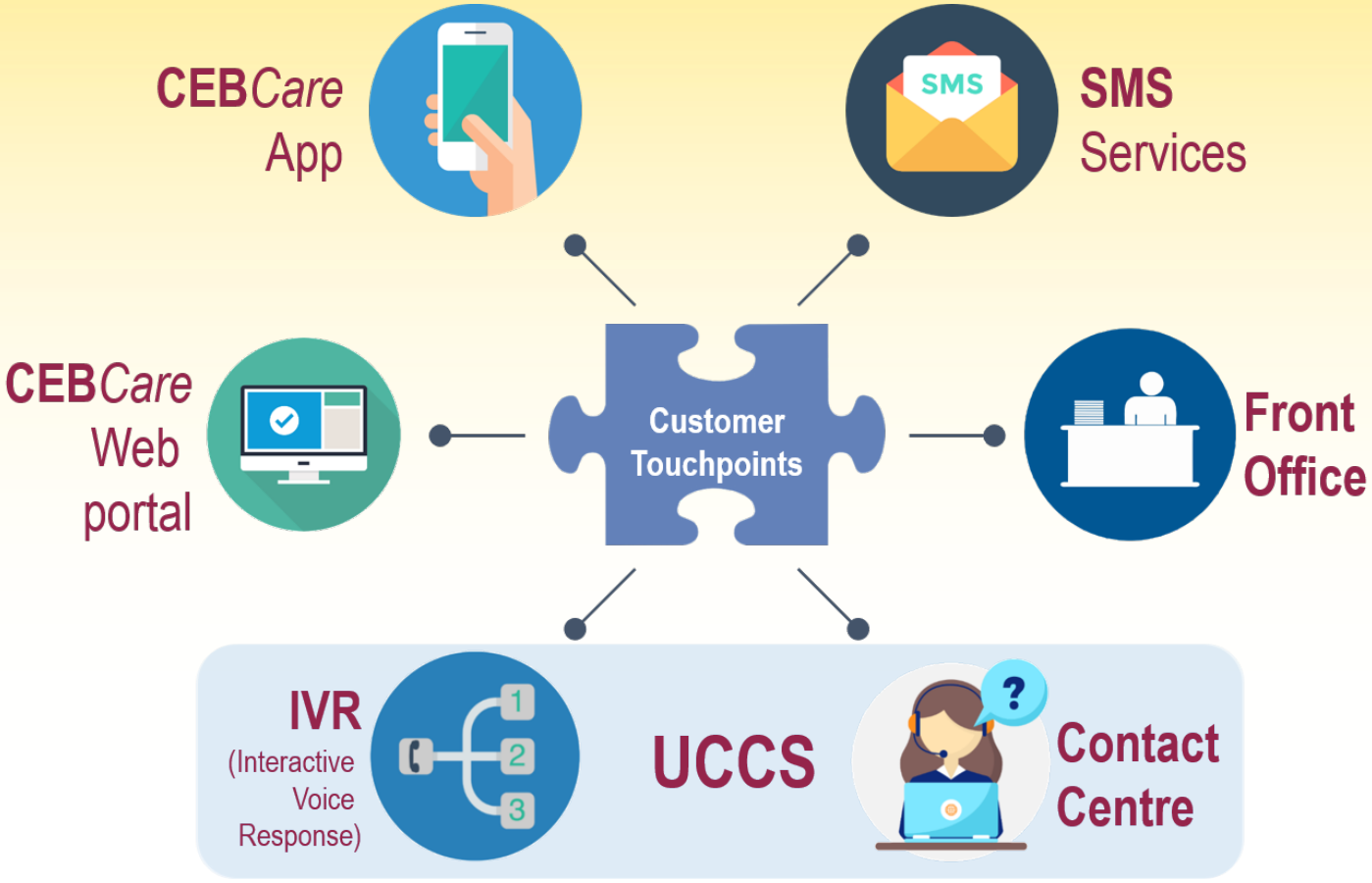
Digitalization in the Distribution Sector

- Digitalization of the core processes.
- Mobile enablement of work force.
- Seamless integration.
  - Meter reading and billing
  - Outage management system
  - Revenue collection
  - Disconnection handling
  - New service connection
  - Unified call center
  - Customer self service

CEBAssist Solutions



Customer Touch Points



Call Centre and Customer Self Service

- Distributed but unified call center.
- Work from home facility for call agents.
- Machine to Machine integration with other managed services.
- Interactive Voice Response (IVR).
- Customized Automated Voice Response (AVR).
- Reliability index calculation automated.
- CEBCare Mobile App.
- CEBCare Web Portal.
- SMS & Email.
- Chat Bots.

Thank You