**Data Analysis (CASE -1)**

**Real-time data being collected through smart LED street lights connected to Centralized Control & Monitoring Systems (CCMS)**

* USED FOR MONITORING AND CONTROLLING GROUP(S) OF STREET LIGHTS
* ONE CONTROLLER CONTROLS ABOUT 20 – 150 STREET LIGHTS,
* ACCUMULATES THE DATA (Including on and off time, supply voltage, load current, energy consumption, etc.) FROM STREET LIGHTS AND COMMUNICATES IT TO THE REAL TIME DASHBOARD SERVER.

THE DATA THAT IS BEING CAPTURED THROUGH THE CCMS SYSTEM IS FOR GROUP(S) OF STREET LIGHTS.

**CHALLENGE 1–**

HOW TO DETECT/IDENTIFY THE DEFECTIVE/NON-FUNCTIONAL LIGHTS, NUMBER OF LIGHTS CONNECTED TO A PARTICULAR CCMS THAT ARE NOT FUNCTIONING AND THE WATTAGE OF THESE FAULTY LIGHTS.

EXTRAPOLATE THE DATA AVAILABLE IN THE CCMS TO FIND OUT THE NON – FUNCTIONAL STREET LIGHT(S) CONNECTED TO A PARTICULAR CCMS.

**CHALLENGE 2 –**

**COMPLAINT HANDLING SYSTEM (CHS)** – THE PRESENT CONSUMER COMPLAINT DATA TO BE ANALYSED FOR PREDICTIVE ANALYSIS OF THE FAULTS AND UNDERSTANDING SO THAT EESL COULD TAKE PRE-EMPTIVE MEASURES AND ADDRESS THE COMPLAINTS BEFORE THEY EVEN OCCUR.(SUGGEST WAYS TO REDUCE FAULT RATE.)

**Data Analysis (CASE -2)**

**DATA BEING RECORDED BY SMART METERS INSTALLED IN HOUSEHOLDS.**

ENERGY EFFICIENCY SERVICES LIMITED (EESL), UNDER ITS SMART METERS NATIONAL PROGRAMME (SMNP) IS DEPLOYING ADVANCED METERING INFRASTRUCTURE BY REPLACING EXISTING METERS INSTALLED IN HOUSEHOLDS WITH SMART METERS. It is also installing GPRS based communication systems, Head End and Meter Data Management Softwares hosted on cloud which is seamlessly integrated with distribution company’s (DISCOMs’) billing system TO HELP DISCOMS TO CUT DOWN ON LOSSES (AGGREGATE TECHNICAL AND COMMERCIAL LOSES, TRANSMISSION AND DISTRIBUTION LOSSES, ETC). This makes full value chain from Smart Meter to Billing automatic without any manual intervention. WITH INSTALLATION OF THESE SMART METERS, CONSUMERS WILL ALSO BE ABLE TO MONITOR AND CONTROL THEIR ENERGY CONSUMPTION PATTERN.

DATA BEING COLLECTED USING THE SMART METER INCLUDES ENERGY CONSUMPTION, MAXIMUM DEMAND, PHASE WISE CURRENT AND VOLTAGE, POWER FACTOR ETC.

**Challenge**

What all inferences can be drawn from this data to enhance consumer experience.

Typically, a smart meter consumer has real time access to their energy consumption, pattern of consumption etc, while DISCOMs will get visibility towards Load Pattern, Sanctioned load violations, phase unbalance, peak load management etc.

**Expected outcomes**

**A** lot of business intelligence is already being created with implementation of Advanced Metering Infrastructure (AMI) under the smart meters programme. However, with the availability of big data coming from millions of smart meters, EESL would like to develop advanced analytics tools that can create strong value for DISCOMs and their consumers. There can be many ideas like

* Can we increase non-tariff revenue?
* Can we predict collection?
* Can we reduce cost of power purchase by doing peak load management?
* Can we improve consumption behaviour to manage peak load?
* Can we improve cash flows?
* Can we improve customer satisfaction?

**Data Analysis (CASE -3)**

**Data being collected through Electric Vehicles Charging Stations**

Government of India is giving a big push for Electric Mobility adaption in India targeting around 30% of electric vehicles by 2030, which is approx. 100 million Electric Vehicles on Indian roads.

EESL, under its National E-Mobility program, aims to enhance adoption of electric vehicles and provide e-vehicle owners with an infrastructure for the e- vehicles and hence it is setting up a network of public charging stations across the country to encourage adoption of electric vehicles in India.

**Challenge**

What kind of interface can EESL built to increase the use of public charging stations?

Expectations

* A solution where electric vehicles can communicate with charging stations to provide automated information to EVs users in order to identify and reach out to the nearest charging station
* What can EESL do to upscale adaption of e-mobility in India.