Sustainable Mobility:

Strategies to shave off 10% / 20% oil consumption by 2030

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Sustainable Mobility

- **Energy Security**
  - Reduction in crude oil import
    - 64% reduction in oil demand (by 2030)
- **Climate Preservation**
  - Reduction in CO2, SOx and NOx emissions
  - 37% reduction CO2 (by 2030)
- **EV can support grid for balancing**

Driving Forces

- **Availability of EV**
  - Cost & Various models
- **Charging Infrastructure**
  - Types
  - Space
  - Standardizations
  - Connectivity Standards
- **Policy & Regulatory**
  - EV Charging infra as ‘Service’ – Not Sale of Electricity
- **Change in Mind-set**

Charging Infrastructure

- **Private Charging**
  - **Slow Charging**

    Location: Individual Home / Apartment Charging , Office premises)
- **Public Charging**
  - **Slow Charging**

    (Locations: Parking lots in Malls, Airport, Metro Station etc.)
  - **Fast Charging**

    (Locations: Parking lots in Airport, Metro Station, Bus stands etc.)

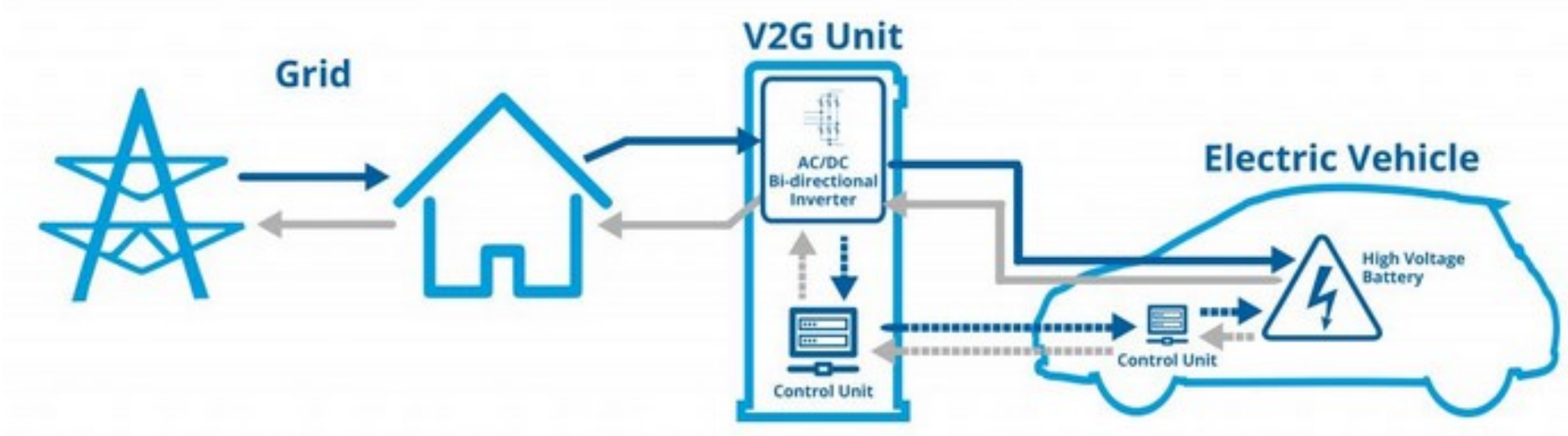
- **Charging Station**
  - Within city - Every 5 km
  - On Highway - Every 50 km
- Facility Charge : Electricity Charge :: 65% : 35%

Grid Impact

- Penetration of 5 – 6 Millions of EV by 2020
  - Additional capacity: 5000 MW (1.5 – 2% of current installed capacity)
  - Negligible impact on National Grid
  - Feeder level impact is not substantial

Vehicle-to-Grid (V2G)

- EV battery storage system can support the grid as a reserve capacity
- The centralized battery charging station for 3-Wheeler can also serve the purpose
- Special controller and Protection mechanism



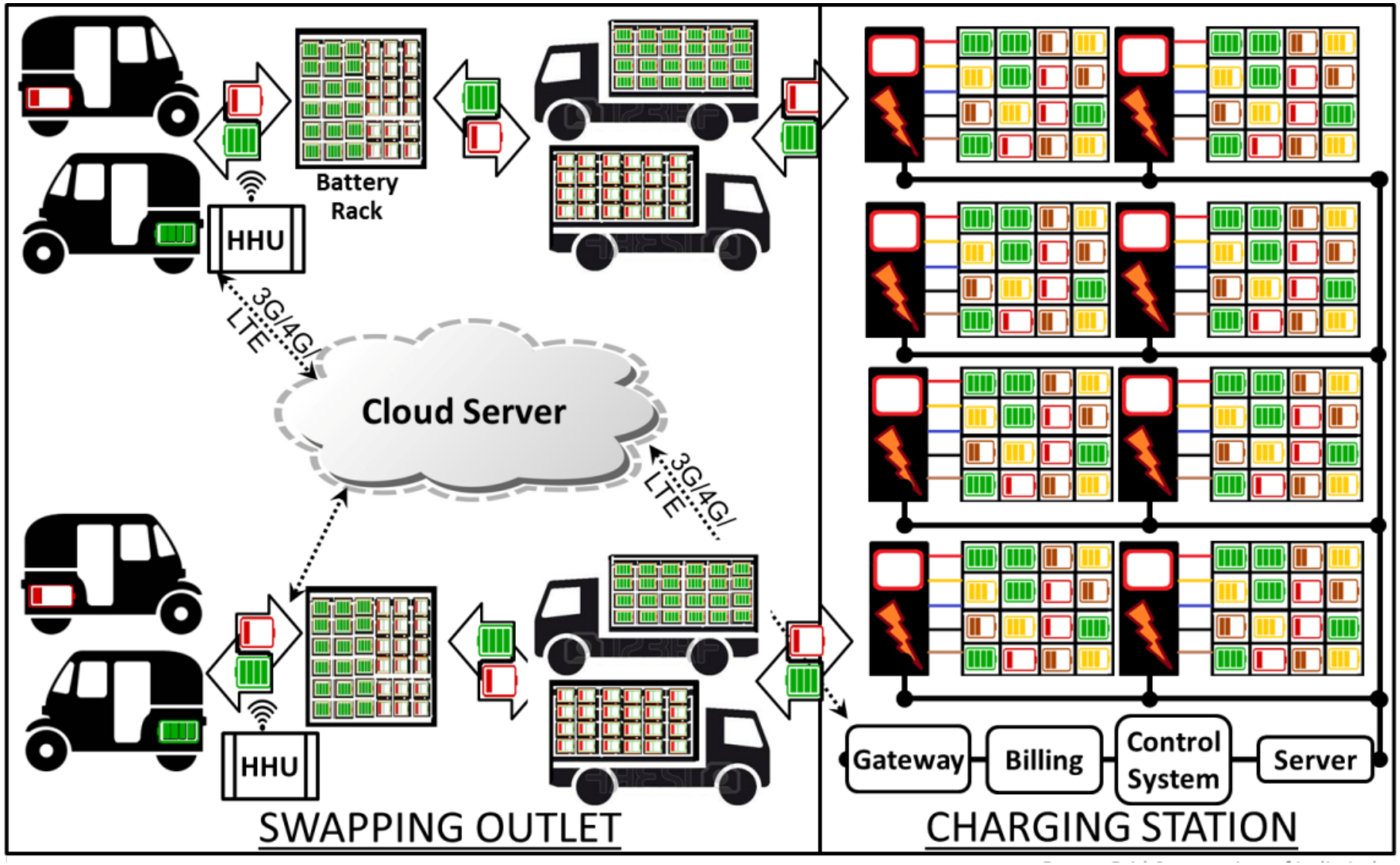
Strategies

- **Convert Commercial Vehicle into Electric Vehicle - Priority**
  - **Shared Mobility**
  - **Electric Vehicle**

POWERGRID's Initiative in E-Mobility

- **Using three E-Cars**
  - 15kWh, 80-100 km range,
  - 15 amp socket for charger
- **Establishing E-Rickshaw charging and swapping station**
  - At Gurgaon with DMRC
  - To cater 500 E-Rickshaws demand
- **Establishing E-Taxi/Car charging station at Hyderabad**
  - 15 kW DC fast charger , near 2 no. of Metro Stations

Charging Station and Swapping Out let



POWERGRID : Establishing in Gurgaon near Metro Station

EV Charger

POWERGRID : Establishing in Hyderabad near two Metro Stations

Thank You