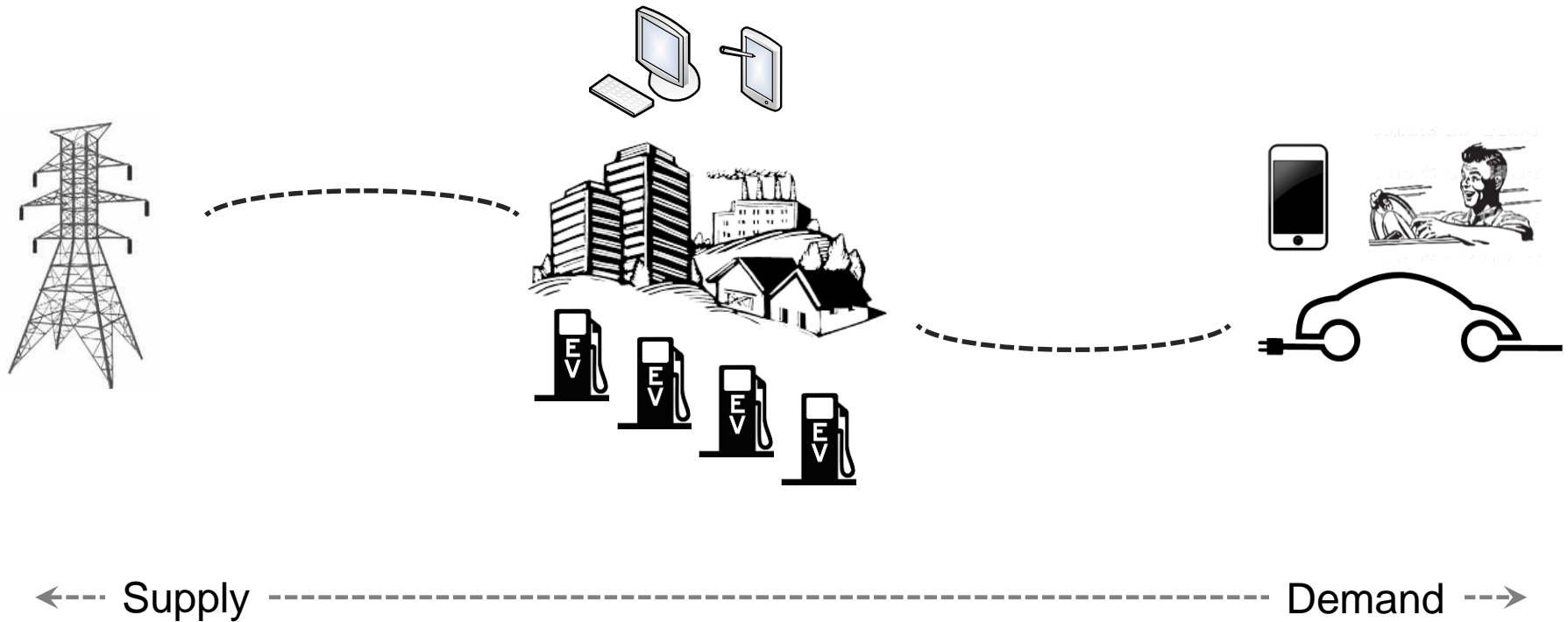# Smart Charging in the Real World

Ram Ambatipudi

VP, Business Development

EV Connect, Inc.

Agenda

- The EV Value Chain

- What is Smart Charging?

- Real World Examples of Smart Charging

- The Future of Smart Charging

The EV Value Chain

Supply ← - → Demand

Data Empowers Smart Charging

- Supply
- Price/cost
- Location
- Station
- Driver
- Vehicle

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Smart Charging Applications Depend on Customer Segment

Workplace

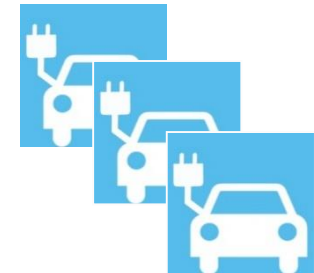Transit

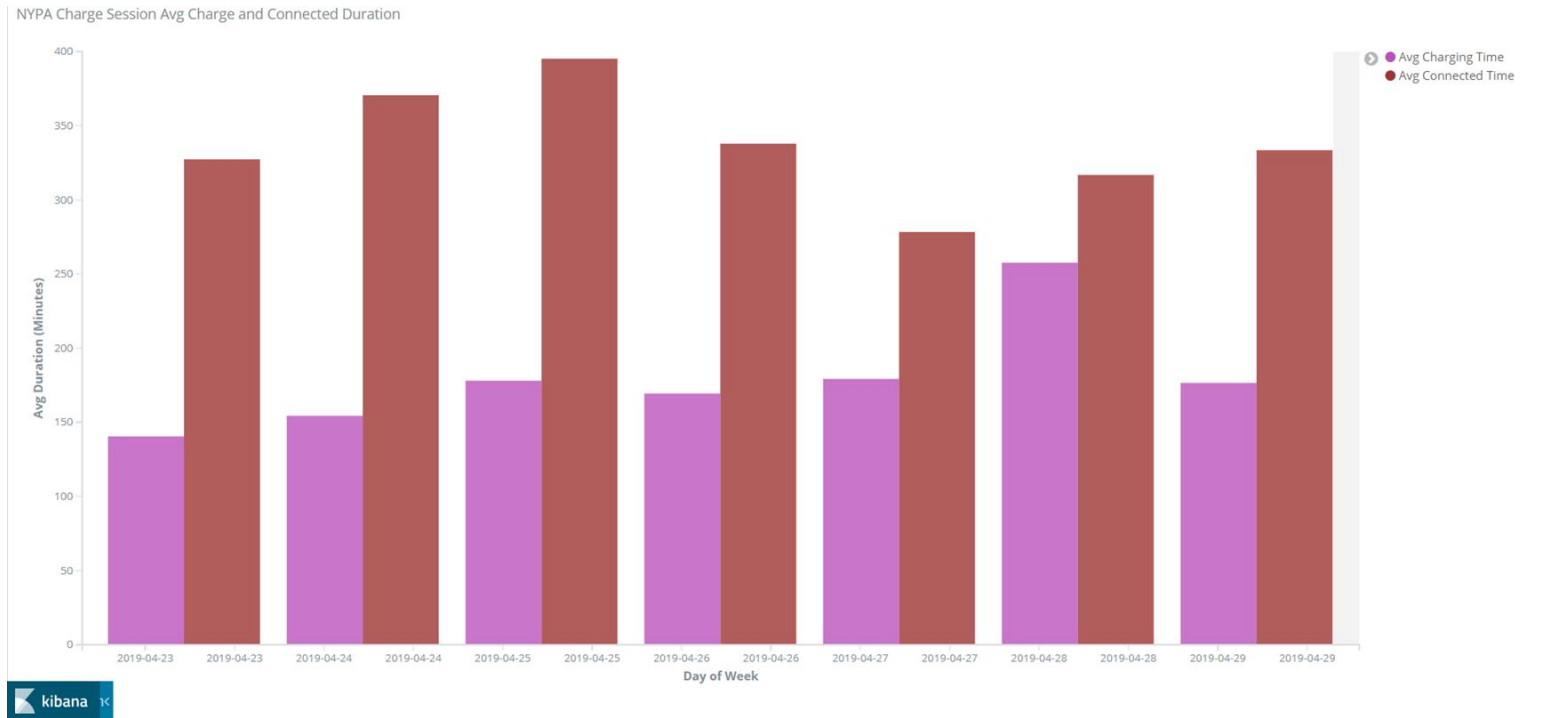Utility

Residential

Hospitality

Destination

Public

Fleet

Smart Charging Considerations

- Site host goals
- Driver need / vehicle
- Energy prices/costs
- Load limits at a location
- Peak loads for utility nodes
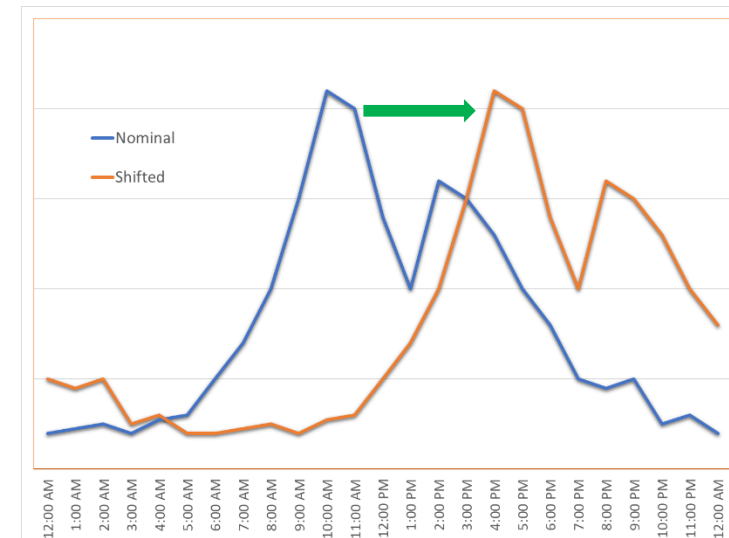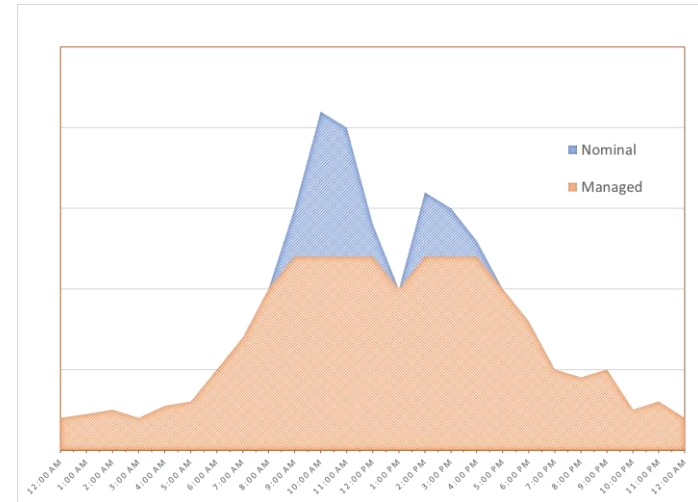- Station location & power
- Local DERs

Average Charge and Connected Duration
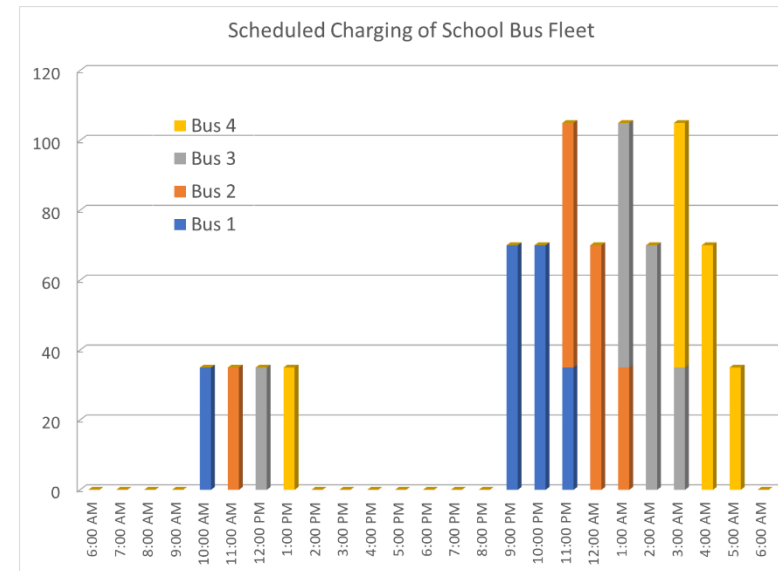
SCE Charge Ready Program

- Workplace application
- Pre-planned DR events
- Load shed / load shift
- EV Connect participation
  - 400+ ports managed
  - OpenADR 2.0b
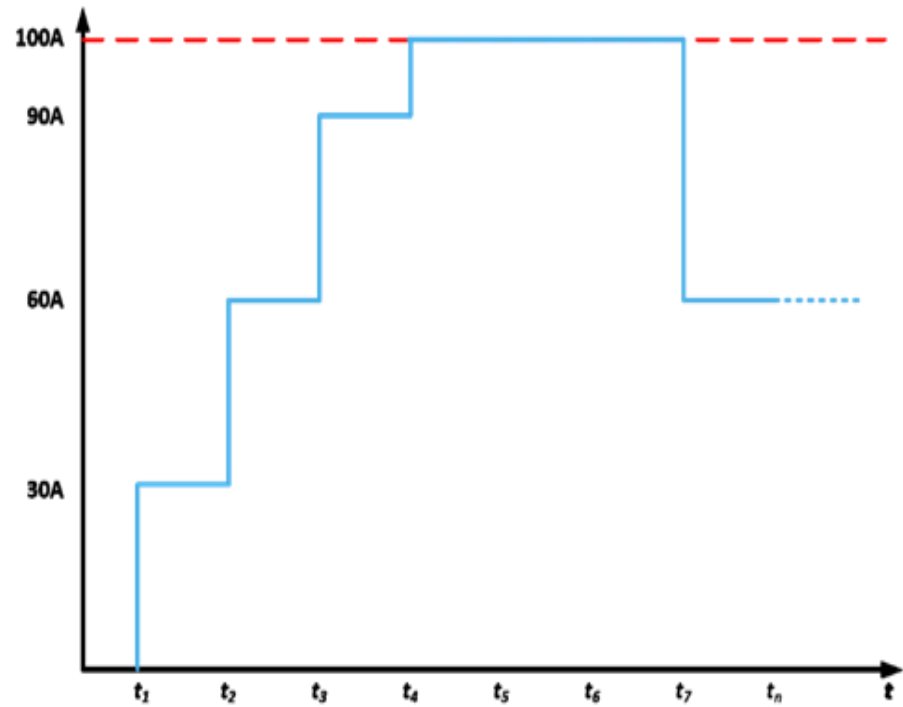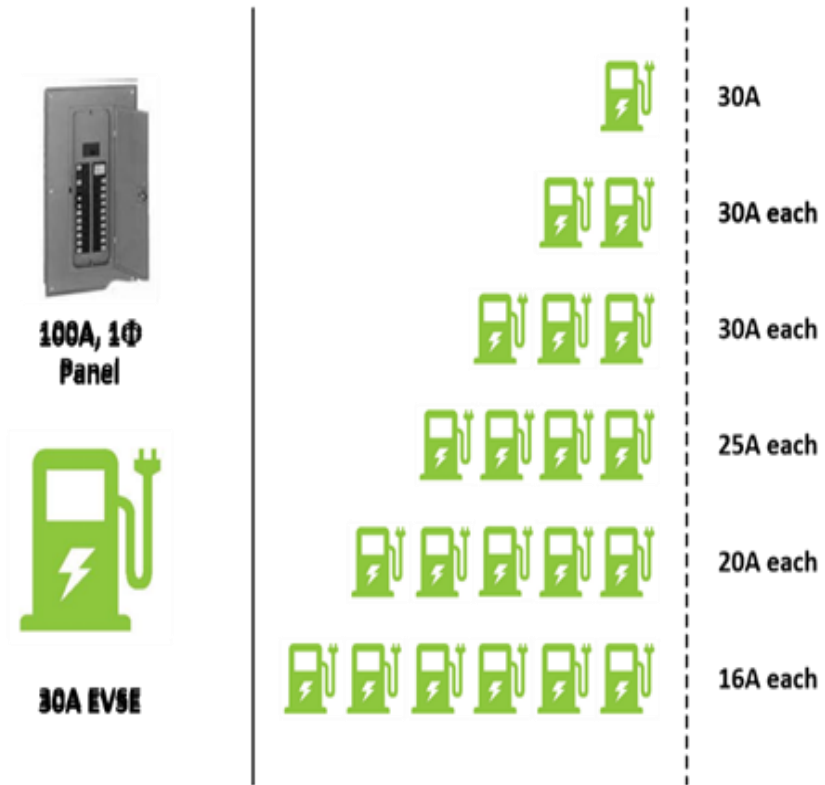 - Dynamic shed
  - Opt in/out enabled

Elk Grove Unified School District

- Fleet application
  - 8 school buses
  - Peak load management
  - Peak load timing
- EV Connect participation
  - 8 stations managed
  - Scheduled charging

Scheduled Charging of School Bus Fleet
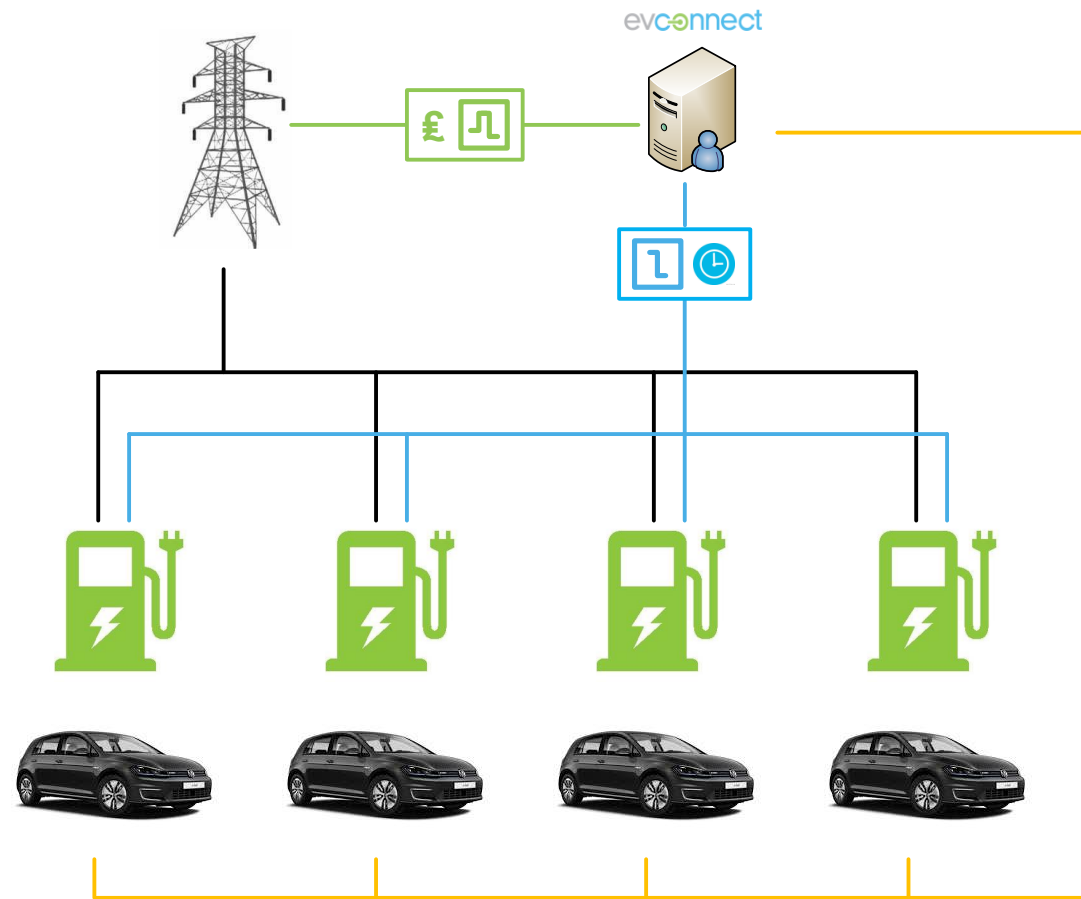
Bus 4
Bus 3
Bus 2
Bus 1

Power Sharing – MUD Example

Utility Managed Charging

- Residential application
  - 400+ participants
  - 400+ NW'd EVSE
  - BEV & PHEV
  - Vehicle integration
  - "Supplier managed"
  - "Driver managed"
- EV Connect participation
  - Station management
  - Energy price integration
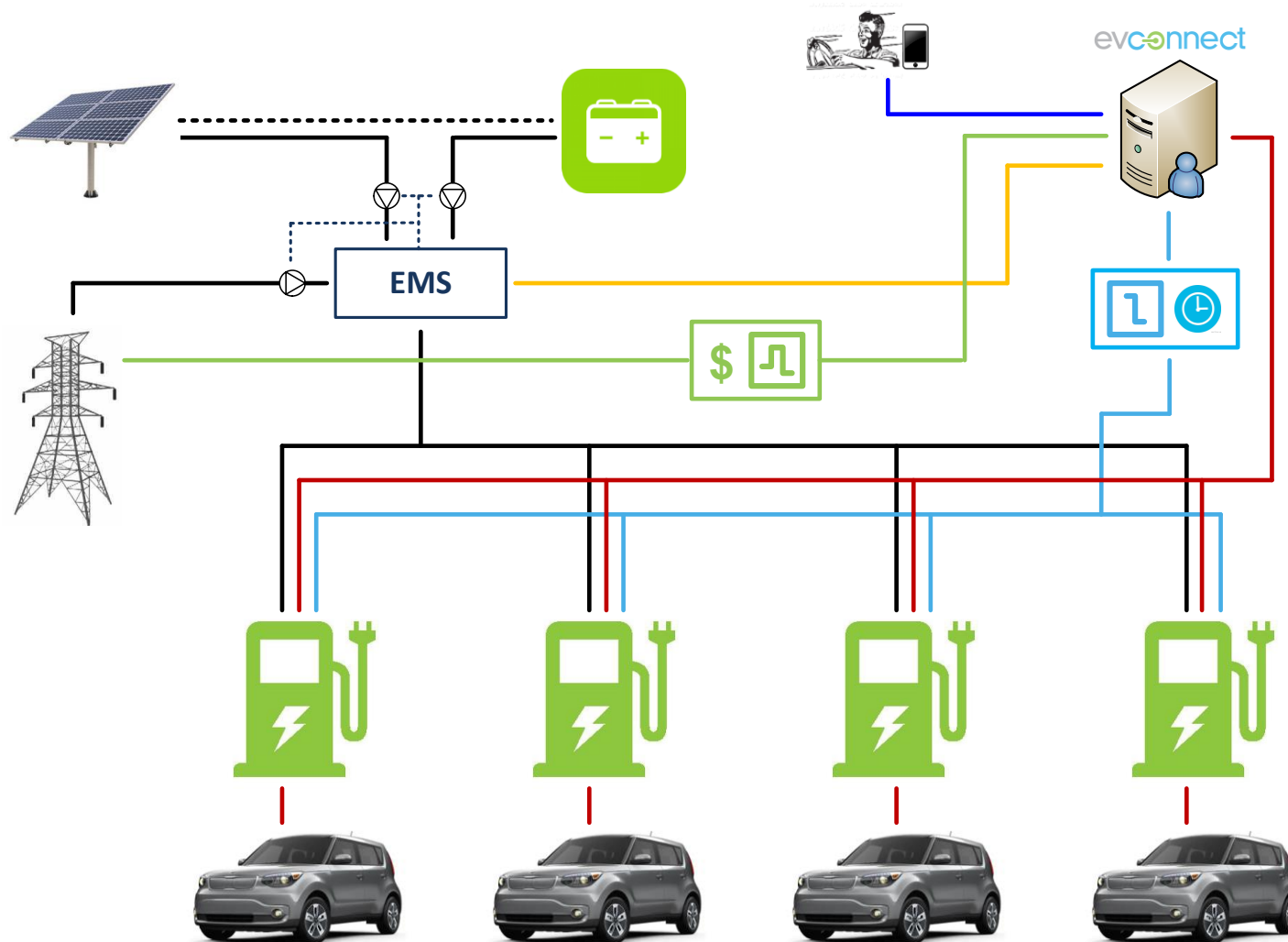 - Mobile app
  - Charge scheduling

Keys to Success

- Clear use case
- Holistic view point
- Stakeholder inclusion
- Driver engagement
- Management Platform
  - Support implementation
  - Collect data
  - Provide feedback

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The Future of Smart Charging

Summary

- Smart charging is real – ***today***

- Successful solutions require:
    - Good scope definition
    - Consideration of the applicable ecosystem
    - Stakeholder buy-in & support

- Platform to unite disparate systems

Questions & follow-up:

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