

## Technology that moves the world



**Efacec DC Fast Chargers**





# EFACEC USA OPERATIONS



**Norcross, GA**

- 15,000 sq. ft.
- 8 employees
- Activities:
  - EV Charger Mfg.
  - Sales
  - Administration



**Rincon, GA**

- 226,000 sq. ft.
- Around 300 employees
- Activities:
  - Engineering
  - Transformer Mfg.
- 2012 – Built largest “Shell Type” transformer to be built in the USA in the last 20 years.

# EFACEC USA OPERATIONS



## Rincon, GA



Transformers



Mobile Substations

## Norcross, GA



EV Chargers

# Current Charging Technologies



## Level 1

120 Volts / 15 Amps

### LEAF Charging Time:

- 0%-100% = 20 hrs
- 50%-100% = 6-8 hrs



## Level 2

240 Volts / 15-30 Amps

### 2012 LEAF Charging Time:

- 0%-100% = 7.2 hrs
- 50%-80% = 2.2 hrs

### 2013 LEAF Charging Time:

- 0%-100% = 4 hrs
- 50%-80% = 1.1 hrs



## DC Fast Charging

480 Volts / 100 Amps


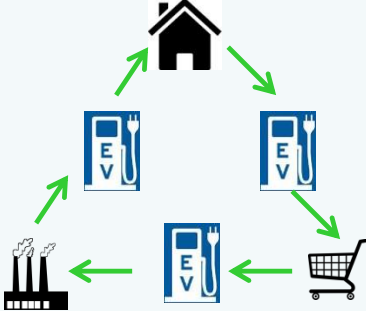
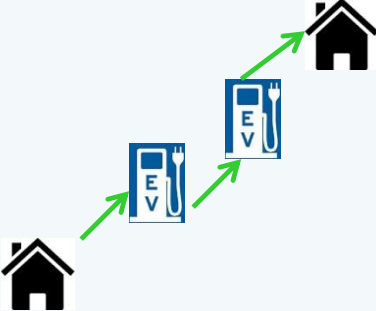
### LEAF Charging Time:

- 0%-80% = 25-30 mins
- 50%-80% = 10-15 mins



# Infrastructure Opportunities



Focus	Primary	Secondary	Tertiary
Distance	Short	35+ miles Suburban	60+ miles Urban
Charging Type	Home 	Destination Charging 	Pathway Charging 
Charger Type	<b>Normal</b> (L1 or L2)	<b>Normal</b> <b>DCFC</b>	<b>DCFC</b>
Charging Site	Home / Community	Super market, Mall, Grocery, Gym, Gas Station	Major roads, Highways, Rest Areas, Gas Stations



# Nissan LEAF Charging Ports



# CHAdEMO Vehicles

**Nissan LEAF**



**KIA Soul EV (Q4 2014)**



**Mitsubishi i-miev**





# SAE J1772 combo port & connector

## Combines L1/L2 and DC Fast Charge

**\*\* Available on the Chevy Spark EV,  
BMW i3 & Volkswagen e-Golf**



**VW e-Golf (coming Q4 2014)**





# Efacec Dual Connector DC Fast Charger Supports Both SAE and CHAdeMO

## SAE Combo



CHRYSLER



Intertek  
4004326



## CHAdeMO



1<sup>st</sup> EV Charger Manufacturer  
to obtain ETL Certification on  
SAE/CCS charging standard.

# Efacec QC50 DC Fast Charger



(1 piece)

## Input Voltage:

- 480 v, 3 ph, 60 Hz
- 3ph + Grd + Neutral
- 100 Amp service
- 79 FLA

## Dimensions:

- 31.5" x 31.5" x 82" tall
- 1,760 lbs.



## Output:

- 62.5 KW Max
- Up to 500 VDC
- Up to 125 Amps
- **Dual Connectors** –  
CHAdeMO and SAE Combo

**Charge Time = 15-30 min\*\***

*\*\* Depends on vehicle and battery state of charge.*

# QC50 DC Fast Charger (2 piece: 1 Power Unit + 1 Kiosk)



Power Unit



Can be separated by up to 65 ft. with standard CAN-Bus communication.



Kiosk (CHAdeMO + SAE)  
(customizable)



# Efacec QC20 DC Semi-Fast Charger



Coming Q3 of 2014!

## Input Voltage:

- 208 v, 3ph, 60 Hz
- 3ph + Grd
- 56 Amps

## Dimensions:

- 24" x 16" x 72" tall
- ~800 lbs.



## Output:

- 20 KW Max
- Up to 500 VDC
- Up to 50 Amps
- **Dual Connectors** –  
CHAdEMO & SAE Combo

**Charge Time = approx 1 hr\*\***

*\*\* Depends on vehicle and battery state of charge.*

# Over 40 QC50s installed in US

- **(26) – Chicago, IL & Metro Area**
- **(1) – Belmont, CA @ VW Research Labs**
- **(1) – Sacramento, CA @ SMUD HQ + 3 more to come in 2014**
- **(1) – Longmont, CO**
- **(1) – Waimea, HI**
- **(1) – Atlanta, GA @ GA Power Customer Resource Center**
- **(3) – Portland, OR and surrounding areas**
- **(5) – Various private sites for Auto Manufacturer testing**

# Chicago Midway Airport



Power cabinet in the back  
Central controller and user interface in the front



# Chicago, IL – O'hare Tollway Oasis



**A total of 8 DC Fast Chargers at 4 Tollway Oases around Chicago**

# Belmont, CA – VW-ERL



**Dual Connector for both CHAdeMO and SAE Combo**



# Sacramento, CA – SMUD



**1 of 4 Chargers to be installed in Sacramento.  
Dual Connectors for both CHAdeMO and SAE Combo**



# Atlanta, GA – GA Power



**Installed at Customer Service Center in North Atlanta  
Dual Connectors for both CHAdeMO and SAE Combo**

# QC50s Coming to the US

At least 60 – 70 QC50s coming to the following areas in 2014

- Portland, OR and surrounding areas
- Sacramento, CA
- Northern CA area (*near the coast*)
- Los Angeles, CA
- Denver, Colorado
- O'ahu, Hawaii
- (26) in Northeast US – NY, CT & NJ
- Aruba

**THANK YOU!**

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