

# Portland General Electric

## Workplace Charging

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EV Roadmap 9



# In the beginning.....

## Workplace charging at PGE started in 1996

- 1 station at our World Trade Center headquarters in Portland
- Used by customers, visitors and the general public
- No fee for charging or parking
- City of Portland put chargers in 2 parking garages



# 2008- Toyota Meeting of the Minds

## Transportation Focus

- 8 stations at the WTC
- 1 station each at PGE offices in Salem and Tualatin
- PGE Customers added 20 EV chargers



# 2012- The EV Project

## Launch of the Leaf and Volt

- Added the first publicly available DCQC Station in North America
- Now have 30 stations
- Mix of payment options and 6 different vendors



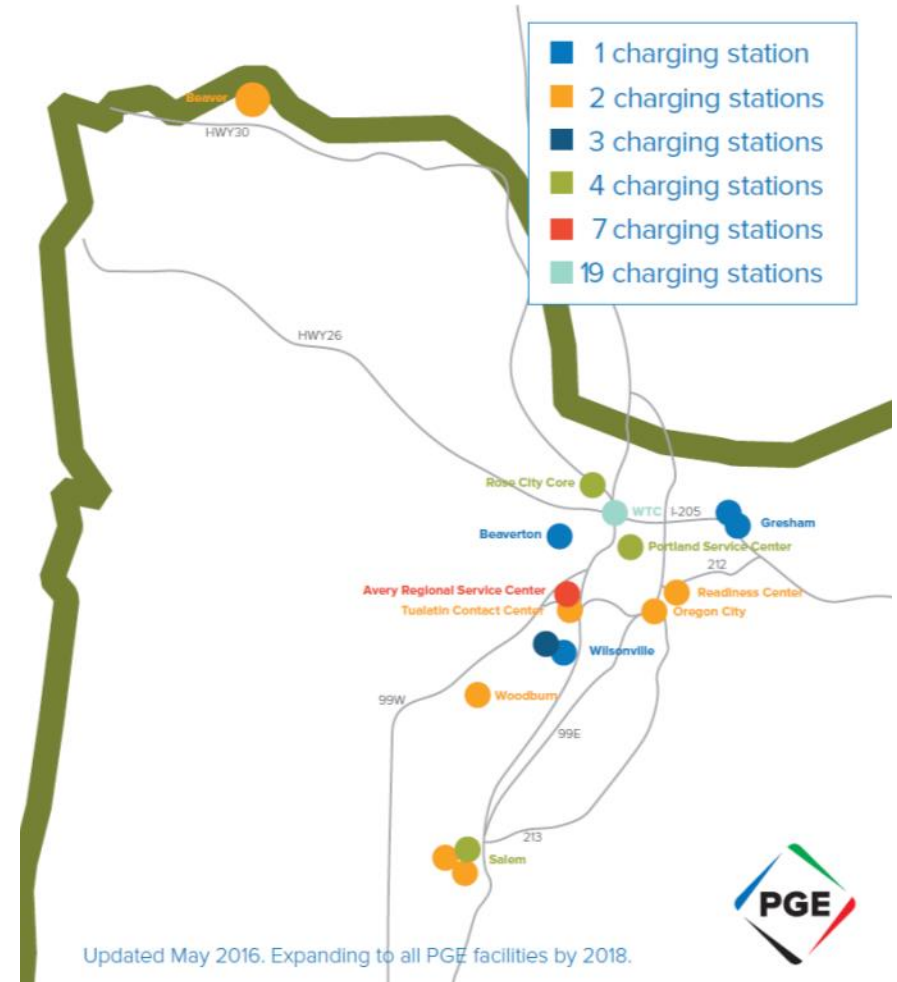
Four Charging Levels- L1, L2 6kW, Tesla 19kW, Leaf 50kW



# Workplace Charging Challenge (2013- Present)

- 59 EV Charging spots
  - 54 Level 2
  - 5 DC quick chargers
- 17 locations
- 80 EV owners
  - Over 3% of employees
- Wireless charger for PGE fleet use

## 59 EV charging ports at 17 PGE locations:



# What worked and what were the challenges

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## Things that Worked

- Employees very interested
- Customers interested
- Planned ahead
  - Bigger conduit
  - Larger panel than needed

## Challenges and Solutions

- Too many employees interested
  - 10 cars at site with 1 charger
- Customers were ahead of the standards
- Some sites needed upgrades to the building

# Making Changes for the Grid

## Demand response and smart charging demo projects

- 11 Smart Workplace chargers
- 35 Smart Residential chargers
- Grid-connected, bi-directional charger - Q3 2016



# Contact Information

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