Getting Juiced on the Job

Workplace Electric Vehicle Charging

Kelly A. Bragg, W.Va. Office of Energy
Coordinator, W.Va. Clean State Program
https://energywv.org/alternative-fuels-and-vehicles/clean-state-program

October 7, 2019
W.Va. Clean State Program

Celebrating 25 years!

- **Formed:** Oct. 19, 1994
- **Host agency:** W.Va. Office of Energy
- **60+ stakeholders**
- Coalition funded through U.S. Department of Energy
- In 2018, stakeholders reduced 654,182 gasoline gallon equivalents through EV use, reducing idling, and the use of alternative fuels (E85, biodiesel, CNG and propane)
- 20 percent improvement over 2017

www.energywv.org/alternative-fuels-and-vehicles/clean-state-program
Three types of electric vehicles

- Hybrid electric vehicle (HEV)
- Plug-in hybrid electric vehicle (PHEV)
- Electric vehicle (EV)

2017: 40 Teslas, 44 Volts, 4 Bolts, 13 Leafs
2018: 74 Teslas, 38 Volts, 14 Bolts, 11 Leafs
Level 1 charging

12 amps/120V
～1.4kW or 4.5 miles per charge-hour
36 miles per 8 hours

Information from JNS Power & Control Systems Inc.
Level 2 charging

14-32 amps/240 single phase
~3.3-7.7kW or 11-27 miles per charge-hour
92-215 miles per 8 hours
What makes up the cost of charging?

Information from JNS Power & Control Systems Inc.

- Electrical
- Equipment and installation
- EV charger management

Level 2 charger at South Charleston Public Library
EV charging impacts on electricity costs

Demand charge ($): RATE of electricity consumption

Billed as peak 15-minute interval of consumption rate $ \times $ utility demand charge

6 KW $ \times $ $7.0/KW = $42$ monthly demand charge

Electricity charge ($): AMOUNT of electricity consumption

Billed as total monthly electricity $ \times $ electricity rate

600 kWh $ \times $ $0.06/kWh = $36$ electricity charge
Strategies to reduce installation costs

- Work with electric utility provider
- Locate chargers close to electrical service
- Avoid trenching
- Rough in capacity for future chargers
- Locate chargers between parking stalls
- Bundle installation with other site upgrades

Pipestem ribbon cutting for new chargers, October 2016
EV charging at Argonne

Pilot program
- No fee
- 3 month trial
- Test reservation system
- Users kept log of issues
- Winter conditions

Program details
- Program Policy
- Program Procedure
- EV Charging FAQs
- Program Application
- Online Registration Form (induces payroll deduction)

Program details
- Argonne Employees
- $7.75/month
- Payroll Deduction
- Outlook Reservation System
- Daily, 4-hr sessions (max)
Champion! Key players! Plan!

- Establish program oversight and enforcement
- Decide on station access
- To charge or not to charge ... for charging
- Maximize utilization by sharing

ECOSYSTEM

AN AMBASSADOR, someone who will personally own it!
Establish program oversight, enforcement

---

**Administration**
- Sustainability
- Facilities
- Transportation services
- Security
- Human resources

**Policy enforcement**
- Security
- Employees self-police
- Signage detours
- Misuse of space

---

Pickering Associates carport structure and 4 EV charging stations; 40kW solar, Parkersburg
Decide on station access

Visitors and/or fleet use

- Access controlled by technology
- Signage

Registration

- Submit request and assigned parking space
- Book spot daily just like conference room
- Issued access card
- Register with security and set up account with charging station provider

Pickering Associates carport structure and 4 EV charging stations; 40kW solar, Parkersburg
Decide on station access

Liability waiver and/or use agreement

- Employee accepts responsibility for any risks
- Employer held accountable for reliable access
- Confer with legal counsel

By my signature below, I, [EMPLOYEE NAME], as an employee of [NAME OF ORGANIZATION], hereby:

- Attest that I am experienced in and knowledgeable with respect to the proper use of [NAME OF ORGANIZATION]'s electric vehicle charging stations
- Accept and assume all risks – foreseen and unforeseen, known and unknown – associated with my use of the charging stations; and
- Waive, release, and discharge [NAME OF ORGANIZATION] from any and all liability, claims, demands, losses, damages, causes of action, or suits of any kind or nature on account of my use of the charging stations, including for any and all personal injuries or property damage that may occur or develop in the future.

[Employee Signature]
“Fee vs. Free”

- 80% offer free charging
- 15% charge fee based on usage – kWh or time
- 5% charge fixed fee

Consistent pricing policy

Review free charging with financial office to determine if any tax implications.

Fees can offset initial costs and address fairness.

Careful consideration not to discourage charging.

Government owned? Taxpayer considerations/perceptions.

WV Wesleyan’s carport structure and 4 EV charging stations; 60kW solar, Buckhannon
Maximize utilization through sharing

Strategies

- Assign stations based on driver needs
- Management assigns AM & PM slots
- Charging Buddies share station and coordinate
- Stations reserved on shared calendar
- First come, first served but time limit
- Honor system – only use when charging

Information from Chicago Area Clean Cities, 2015

WV Wesleyan’s carport structure and 4 EV charging stations; 60kW solar, Buckhannon
Resources

www.workplacecharging.com/home.html

https://fueleconomy.gov/


Kelly A. Bragg
Tiffany Bailey

(304) 957-2004 kelly.a.bragg@wv.gov
(304) 957-2050 tiffany.j.bailey@wv.gov