

Electric Vehicle Infrastructure Checklist

For Government, Community and Business Leaders

Land of Enchantment
Clean Cities Coalition

Who We Are

- **The Land of Enchantment Clean Cities Coalition** is New Mexico not-for-profit organization that is part of the larger U.S. Department of Energy's Vehicle Technologies Office's Clean Cities Network.
- More than 100 coalitions work in communities across the country to implement alternatives fuels, fuel saving technologies and practices and new mobility choices.
- We know that many communities and organizations are looking for ways to reduce pollution, convert fleets, increase tourism and show their commitment to sustainability.
- We can serve as a resource for your community or business as you identify ways to reduce costs and emissions associated with fossil fuel transportation.

The logo is contained within a white circle with a yellow border. It features the text "Land of Enchantment" in a bold, green, sans-serif font, with "Clean Cities Coalition" in a smaller, blue, sans-serif font directly below it.

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Why Invest in Electric Vehicle Charging Infrastructure?

- The move to electric vehicles is one the fastest moving areas in clean transportation.
- According to The Wall Street Journal, as of late last year, auto manufacturers had pledged to spend a total of \$225 billion developing new EVs in the near future.



Why Invest in Electric Vehicle Charging Infrastructure?

There are currently 48 electric vehicle models on the market. According to the Alliance of Auto Innovation, more than 100 models will be in the market in the next five years.



Why Invest in Electric Vehicle Charging Infrastructure?

- The need for communities to support this significant change in transportation is critical. Though the United States now has more than 20,000 electric vehicle charging stations and more are being added, many communities and thoroughfares have few to no charging stations.
- **There are many good reasons to install charging infrastructure in your community and business, including supporting emissions free transportation, attracting tourists, visitors, tenants and shoppers, and adding value to your property.**

Taking the First Steps

Identify the opportunities associated with installing EV chargers at to your specific organization, including:

- Public charging (helps build retail visibility)
- Employee charging (provides workplace availability)
- Fleet charging (helps businesses and governmental entities transition to cleaner transportation)

Taking the First Steps (continued)

- If you have a fleet associated with your entity, conduct a fleet analysis to identify gas powered vehicles that can be replaced with electric vehicles.
- Consider using the Afleet tool by Argonne National Laboratory <https://greet.es.anl.gov/afleet>



First Things to Consider

Before meeting with an EV charging provider, think through answers to the following questions regarding desired key features of your charging stations.

- How much money are you able to spend on each EV charging space?
- Will your charging stations be open to the public?
- Will you charge people to use the chargers, either from the first time or later on? (Recent NM legislation allows for operators of charging stations to set their own prices for fueling. This means that you may recover your investment and ongoing maintenance costs, and possibly turn a profit by installing an EV charger on your property.)



Other Things to Consider

- What is the average dwell time (how long do people usually park) at your facility?
- Do you want to limit the time people will be able to park and charge at your station?
- How much parking space can you dedicate to charging station parking?



More Things to Consider

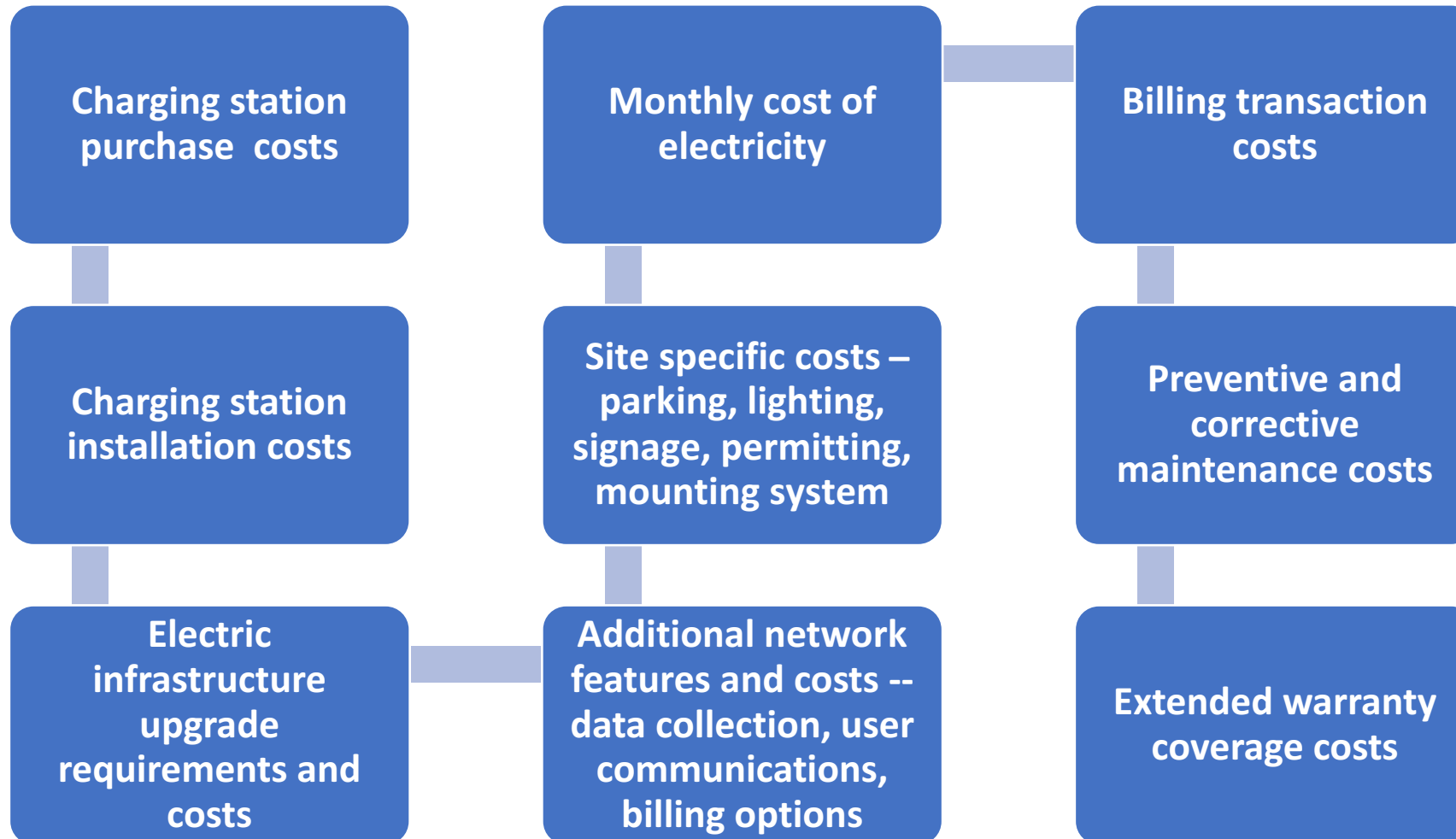
- Do you want chargers to be visible to the public and tourists traveling through the area on apps?
- Will you create spaces that are handicap van accessible for charging?
- Will your charging infrastructure be in safe, well-lit areas?
- Do you want your chargers be available 24-7?
- Have you done research to show that customers/citizens will charge at the site you are considering such as traffic data, number of EV's in the area, population, large workplaces.
- As the owner of a group of what kind of information and/or controls are important to you as the owner of the charging stations?

Taking the Next Steps

- Familiarize yourself with three different levels of charging stations. (See following information)
- Contact at least two charging station companies to get bids on recommended infrastructure and pricing.



Important Factors to Consider When Adding Electric Vehicle Charging Stations



Different Levels of Chargers

There are three levels of charging equipment that are available, ranging in costs, charging time and supply power. Your costs for charging infrastructure purchase, installation and operation will vary greatly, depending upon the charging system, its user and your local electric costs.

Charging Level	Time to Fully Charge	Supply Power	Cost Range*
AC Level 1	16 hours for an 80-mile battery 40 hours for a 200-mile battery	120 VAC/20A	\$300 - \$1,500
AC Level 2	3.5 hours for an 80-mile battery 8 hours for a 200-mile battery	208/240VAC/20-100A (16-80A continuous)	\$400 - \$18,500
DC Fast Charging	Depends on power level of charger and car model. Could be 80 percent charged within 30 minutes.	208/480VAC 3-phase (input current proportional to output power; ~20-400A AC)	\$10,000 - \$40,000



Meet with Your Local Electric Utility to Discuss Current Infrastructure

- Infrastructure needs to be in place to support your charging infrastructure plans.
- Your organization may be required to pay for system upgrades, such as a new transformer, to accommodate new charging system load.
- Once you have finalized the charging level and locations of your charging infrastructure, ask your utility for final estimates in writing on infrastructure upgrade costs and expected timing of upgrades.

Meeting with Your Local Electric Utility

- Ask the utility to estimate **the impacts of the charging system on your monthly electric bill**. An organization's customer class/billing category can be significantly impacted by the installation of charging infrastructure, especially with DC fast chargers.
- **Ask your utility if they have any incentives** for government or businesses who install charging infrastructure. This could range from rebates to time of use rates charging rates or elimination of demand charges.



Understanding Impacts on Electricity Bills

- Not only will you most likely see increased kilowatt hour usage on your bill, but you could see new or increased demand charges.
- Demand (measured in kW) is a measure of how much power a customer uses at a given time.
- Utility demand charges, usually applied to customers who have higher peak loads such as commercial and industrial customers, are based on the maximum amount of power that a customer used in any interval (typically 15 minutes) during the billing cycle. Highly affected by DC charging.

Other Factors to Consider

- **Explore the availability of local, state and federal incentives.** Until the end of 2020, taxpayers will once again qualify for a 30% rebate (up to \$1,000) on costs associated with the installation of an EV charging station. There are currently no tax credits for installing charging infrastructure in New Mexico.
- **Check on local and state regulations.** Depending upon where you want your charging infrastructure to be located, it is important to check with local and/or government officials about any regulations that might pertain to your chosen charging locations including building codes, parking codes, environmental impact regulations and PEV charging permitting and registration processes. Your chosen charging company should be available to help you through these processes.
- **Determine how your chargers will be maintained.** A frequent complaint of electric drivers is that charging stations often need maintenance. Before you move forward on installing stations, identify options for maintaining your stations.

Questions?

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