



**ELECTRIC VEHICLE (EV) SUBCOMMITTEE
LEBANON ENERGY ADVISORY COMMITTEE (LEAC)
FEBRUARY 9, 2023 - 3:00 PM
LEBANON LIBRARY, 9 EAST PARK ST., DAMREN
ROOM, WITH
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE**

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- 1. Call to Order**
 - 2. Approval of Minutes**
 - A. January 12, 2023
 - 3. Old Business**
 - A. Draft Letter to Developers - EV Charging
 - B. GM Dealer Community Charging Program Donation of L2 Charger
 - C. Multi-Town EV Infrastructure Cooperation
 - 4. New Business**
 - A. Draft Site Plan Review Regulations for EV Charging
 - B. Possible Meeting with Planning Dept. - EV Related Funding Opportunities
 - C. Proposal EV-Friendly Employers Project
 - D. Brainstorm How Lebanon Could Encourage Employees to Drive Electric
 - 5. Open to the Public**
 - 6. Future Agenda Items**
 - 7. Adjournment**

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

AGENDA
ELECTRIC VEHICLE SUBCOMMITTEE OF THE
LEBANON ENERGY ADVISORY COMMITTEE
FEBRUARY 9, 2023

AGENDA ITEM 2
APPROVAL OF MINUTES:

January 12, 2023



LEBANON ENERGY ADVISORY COMMITTEE
ELECTRIC VEHICLE SUBCOMMITTEE

MEETING MINUTES - Draft

Council Chambers, City Hall

January 12th, 2023

3:00 PM

MEMBERS PRESENT: Sherry Boschert (Chair), Greg Ames, Clifton Below

MEMBERS ABSENT: Meghan Butts (alternate)

STAFF PRESENT: Tad Montgomery – Energy & Facilities Manager (EFM)

GUESTS PRESENT: Norwich Solar Technologies staff – Robert Adams, David Lutz

CALL TO ORDER: Meeting was called to order by Sherry Boschert at 3:06 PM.

ACCEPTANCE OF MINUTES

Greg Ames moved to accept the December 2022 LEAC EV Subcommittee minutes; Sherry Boschert seconded. The minutes were approved unanimously without change.

OLD BUSINESS

Multi-Town EV Infrastructure Cooperation

Motion: That the LEAC EV Subcommittee approve the roll-out of the Upper Valley EV charging map that Sherry Boschert and the Upper Valley Lake Sunapee Regional Planning Commission have created.

Approved – 3:0.

GM Level 2 Charger

Tad Montgomery stated that the City is waiting for a contract proposal from GM. One of his tasks is to research other public EV chargers in similar municipalities. Greg Ames suggested that he contact the Hanover parking department to get data on EV charger usage, their payment system, and cost:benefit to date. parking@hanoverNH.org

NEW BUSINESS

Solar EV Chargers: Representatives from Norwich Solar Technologies gave a presentation on a new technology that they have developed – a stand-alone solar tracker that powers up to four EV charging stations. This was described as ‘daylight EV charging off the grid’ without most of the infrastructure development costs.

Community Power Announcements: Sherry Boschert made the suggestion/recommendation that a two-sentence description of Lebanon Community Power be read at the start of all City public meetings.

Legislation: Clifton Below said that he is working with Senator Watters on NH legislation that would promote vehicle-to-grid energy use and revise the net metering statute.

Advanced Transit EV Busses: Greg Ames mentioned that Advanced Transit has taken delivery of two electric busses and is working to install the charging infrastructure. The EV Subcommittee has offered to help AT do a big publicity rollout of the busses when they first hit the street.

Sherry Boschert gave a recap of a recent webinar she attended where new developments in the field of heavy duty EVs were highlighted:

- Green Mountain Power's various programs
- Pioneer Power Mobility using propane-powered mobile EV chargers
- Casella Waste -- an EV garbage truck being used in Rutland with a 100-mile range
- A company called WAVE offering attachment-free, ground-level charging plates for over-the-air EV charging

UPCOMING EVENTS

None were mentioned.

FUTURE AGENDA ITEMS

Note were captured.

NEXT MEETING

The LEAC EV Subcommittee generally meets the 2nd Thursday of the month, 3-4 PM, usually in the Council Chambers of City Hall with an online option **but the next meeting on Thursday, February 9th has been moved to the Damren Room of the Lebanon Library**, 9 East Park Street, Lebanon without an online option. See the calendar on the City’s home page to confirm time and place: <https://lebanonnh.gov/>. For online options visit: <https://lebanonnh.gov/live>.

ADJOURNMENT

Sherry Boschert moved to adjourn the meeting at 4:16 PM, seconded by Clifton Below. The meeting was adjourned by consensus.

Respectfully submitted,

Tad Montgomery

AGENDA
ELECTRIC VEHICLE SUBCOMMITTEE OF THE
LEBANON ENERGY ADVISORY COMMITTEE
FEBRUARY 9, 2023

AGENDA ITEM 4
NEW BUSINESS: ITEM A.

Draft Site Plan Review Regulation Amendments

DRAFT **SITE** PLAN REVIEW REGULATION AMENDMENTS*****A. **Site selection.**

- a. Prior to initiating permitting, proposed EVSE sites should have a mandatory site survey in coordination with utilities to assess physical and financial options of existing electrical power capacity or needs for bringing power to the site, if required. The purpose is to avoid conflicts that might increase project complexity or impact parking configurations. Submission of load requests to utilities for power reviews should use GPS coordinates rather than address locations. Such a strategy will lead to a more accurate assessment of the feasibility of supplying power to the site.
- b. Where justification for **Level 3** and **Level 2** EV charging station capacity is limited, **Low Power Level 2** or **Level 1** EV charging stations may be suitable.

B. **Standards.**

- a. All installations of EVSE shall meet National Electric Code (Article 625) and UL certification is recommended. The applicant should consult with the local code officials to ensure electrical code compliance as well. Level 2, including all auxiliary loads, should be metered in accordance with electric utility requirements
- b. Property owners should consider equipment that is capable of supporting demand response, time-of-use (TOU), and/or smart charging. For example, evaluation and installation of an **electric vehicle load management system** in conjunction with other EVSE is recommended for larger projects, with the system designed to allocate charging capacity among multiple EV charging stations at a minimum of 8 amps per charger (minimum allocation may vary).
- c. Battery charging station outlets and connector devices shall be no less than 36 inches and no higher than 48 inches from the ground or pavement surface where mounted.
- d. EVSE must comply with relevant **ADA** guidance including requirements and recommendations for EV Charging Station from the [U.S. Access Board](#).
- e. Equipment (including components mounted on pedestals, lighting posts, bollards, or other devices) shall be designed and located as to not impede pedestrian travel or create trip hazards, particularly for on-street charging stations and others within the right-of-way. Provide a retraction device or place to mount cords and EV pedestals or protections designed to minimize vandalism, pedestrian conflict, and potential damage by accidents, snow storage/plowing and inclement weather.
- f. EVSE shall be protected such as by wheel stops or concrete filled bollards or shall be placed a minimum of 24 inches clear from the face of the curb.
- g. EV infrastructure should be made of low-maintenance durable materials that are vandal-proof to the extent possible and operational in extreme weather conditions (including low and high temperatures).
- h. EV charging stations that are available for public use must be equipped to enable interoperability, i.e., universal access, as defined by the New Hampshire Department of Transportation and U.S. Federal Highway Administration. Until

an industry-wide standard connector is established, all publicly-accessible Level 2 and Level 3/DCFC station sites, installed or operated with the use of public funding, should be required to have at minimum one of each CHAdeMO and CCS connections available on site. Any publicly-funded networked charging station must operate using open source non-proprietary communications protocols

- i. Futureproofing. The make-ready portion of electrical infrastructure installed at publicly-funded, publicly-accessible locations should be capable of supporting chargers with a minimum 150kW capacity.
- j. The City's Energy Facilities Manager is authorized to review designs and maintain standards for EVSE.
- k. MFD and non-residential EVSE installations should include a plan for Operations & Maintenance of the chargers and related equipment, such as software.

C. EVSE siting and parking.

- a. Dimensions. EV parking spaces shall meet standard dimensional and related requirements of the Site Plan Regulations, Section 6.5E and applicable ADA parameters, and address siting requirements for EVSE (e.g., pedestals).
- b. Accessibility. EV parking spaces should be located adjacent to the principal use. All EVCS shall be connected to a barrier-free accessible route of travel. Accessible electric vehicle charging stations should be located in close proximity to the building or facility entrance and connected to a barrier-free accessible route of travel. The owner of the property may designate the accessible electric vehicle charging station exclusively for use by people with disabilities.
- c. Site design. Provide a statement of explanation for where EV spaces are proposed; while EV parking spaces are encouraged to be sited in visible (readily identified by EV users), desirable and convenient locations on-site, installation costs and similar practical factors may be influence site design and should be described. Facilities should blend with the surrounding landscape/architecture for compatibility with the character and use of the site.
- d. Public EVSE. The owner or operator must disclose the location and characteristics of each public EV charging station to the U.S. Department of Energy's Alternative Fuels Data Center. Information that must be disclosed includes, but is not limited to, address, voltage, and timing restrictions.
- e. Energy optimization. When selecting a charging station location, site hosts and developers should consider existing and future needs for incorporating on-site distributed energy resources, and prioritize areas that can easily accommodate these assets, which in turn could reduce the cost of future upgrades. It is best practice to identify existing locations with excess load capacity that can support the deployment of curbside EV charging; for example, for publicly accessible charging, consider repurposing of light poles.
- f. Conditions. EV batteries are degraded in hot conditions and not charged fully in cold weather; the applicant may wish to provide shade or other shelter (i.e., enclosed structured parking), noting that 60-70 degrees (F) is the ideal charging temperature.
- g. Enhanced charging infrastructure. Innovative charging strategies are encouraged, such as battery pack storage integration with EVSE for TOU

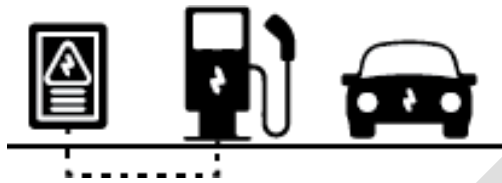
demand management, solar canopy parking, co-location with electric bike storage and charging, and bidirectional EV chargers for vehicle-to-grid, -home, or -building.

D. EVSE signage.

- a. Parking space access. Identify EVCS as EV-parking only. Except when located in conjunction with single- or two-family dwellings or with assigned/permitted spaces, electric vehicle charging station spaces must be individually signed or otherwise marked for the dedicated parking and charging of electric vehicles only. Provide painted marking of spaces and posted signage according to the FHWA/MUTCD Interim Approval (IA-13) for Electric Vehicle Charging. Electric vehicles may be parked in any space designated for public parking, subject to the restrictions that apply to any other vehicle. When a sign provides notice that a parking spaces is a designated EV charging station, no non-electric vehicles may occupy or otherwise obstruct the space (NH RSA 236:134). Except when located in conjunction with single- or two-family dwellings, with assigned/permitted spaces, or where no policy is otherwise provided and posted, no EV user may occupy the space when not actively charging or beyond the hours designated on any posted signs or policies.
- b. Required information. At each location (EVCS parking space) or cluster of EV charging stations, except when located in conjunction with single- or two-family dwellings or with assigned/permitted spaces, and only if to be enforced, signage must be posted and include: time limits for charging, safety information (e.g., voltage and amperage levels), contact information for service problems, hours of operation (e.g. MUTCD R7-5), charging pricing, and penalty warnings (e.g., idling/maximum duration of charging sessions, non-EV parking).
- c. Price signals. Usage fees must be transparent. Related considerations for programming include time of use rates and demand charges. Charging stations should display on their face the rate of charge, unit price (in whole cents or tenths of one cent) per mega joule or kWh at which the EVSE dispenses electricity during a transaction, and total kWh delivered per charging session.
- d. Payment. Multiple payment operations should be enabled. Each newly installed publicly-funded, publicly-accessible charging station must accept payments, with appropriate consumer protections, via credit card reader and at least one other accessible form of payment.
- e. Format. As an alternative to posting all information, details subject to change (e.g. rates) may be provided via a digital screen, website or similar. All published physical and digital content must be kept up-to-date. Signage must be included in the specifications package for Site Plan approval.
- f. Visibility. EV charging station wayfinding signage and markings are highly encouraged to effectively guide motorists. Refer to MUTCD for standard design.
- g. Adequate lighting (may be on timers) must be provided where EV charging stations are installed unless charging is for daytime purposes only.
- h. Other labels. Plans and associated equipment by be clearly and permanently labeled as follows: 1) service panels must identify full circuits available for EV charging as "EV Ready", 2) service panels designated for future additional EV

charging must be identified as “EV Capable”, and 3) Conduit endpoints must be marked as “EV Ready” for full circuits and “EV Capable” for inaccessible conduit installed. The electric service panels for EVSE ready circuits should be positioned near EV parking and shall provide sufficient capacity and space to accommodate the circuit and over-current protective device. A permanent and visible label stating “EV-READY” shall be posted in a conspicuous place at both the service panel and the circuit termination point.

Definitions



Electric vehicle supply equipment (EVSE)/ EV charging station: The apparatus installed specifically for the purpose of transferring energy between the site or building wiring and the Electric Vehicle. EVSE does not include any equipment affixed to the electric vehicle.

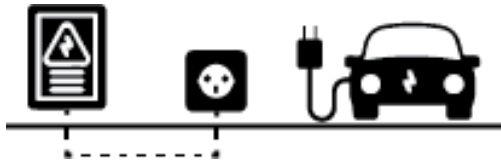
Electric vehicle infrastructure: Structures, machinery, and equipment necessary and integral to support an *electric vehicle*, including *EV charging stations* and electrical outlets.

Electric vehicle (EV): An automotive-type vehicle for on-road use primarily powered by an electric motor, including any battery electric vehicle, fuel cell electric vehicle, or plug-in hybrid electric vehicle, that draws current from an onboard battery charged through a building or site electrical service, *EVSE*, or other source of electric current.

EV-capable space: An *off-street parking space* with electrical panel capacity and space for a branch circuit dedicated to the parking space that is not less than 40-ampere and 208/240-volt and equipped with raceways, both underground and surface mounted, to enable the future installation of *EVSE*. For two adjacent EV-capable spaces, a single branch circuit is permitted.



EV-ready space: An *off-street parking space* provided with a full dedicated branch circuit that includes not less than 40-ampere and 208/240-volt panel capacity, conduit, wiring, receptacle, and overprotection devices terminating in an outlet, receptacle or junction box that will support an installed EVSE and which is located in close proximity to the location of the parking space. For two adjacent EV-ready spaces, a single branch circuit is permitted. These spaces are “ready to go” with the addition of an EV charging station (EVSE).



EVSE-installed space: An *off-street parking space* with a dedicated branch circuit and *EVSE* for *Level 2 EV charging stations*, at minimum.

Level 1: “Trickle” charging level for *EVs* that operates on a 15-20 amp breaker on a 120 volt AC circuit (wall outlet) while drawing 1.4-2.4 kW to add 2-6 miles of range per hour of charging.

Low Power Level 2: Charging level for *EVs* that operates on a 208 or 240 volt, 20-amp circuit while drawing around 3.8 kW to add approximately 13 miles of range gained per hour of charging.

Level 2: Charging level for *EVs* that operates on a dedicated 40-100 amp breaker (same kind used by a clothes dryer or stove) on a 208 or 240 volt AC circuit while drawing 6.2+ kW to supply 19+ miles of range gained per hour of charging.

Level 3: Fast or rapid charging level for *EVs* that operates on a 60 amp or higher breaker on a 480 volt AC electric circuit or higher three phase circuit with special grounding equipment and mounting on an equipment pad.

Electric Vehicle Load Management System: An automatic load management system designed to distribute load across one or allocate charging capacity among multiple EV charging stations at a minimum of 8 amps per charger (minimum allocation may vary) and intended to increase cost-effectiveness by allowing the system to “share” the load across multiple EVs in the parking lot depending on their charging needs.