Request for Proposals:
Addressing remaining needs in the charging infrastructure ecosystem

January 2021

Background and Objectives

Access to convenient charging is a key requirement for the transition to electric vehicles, but charging is far from universally available, and it is often costly and time-consuming to plan and construct. Charging technology is rapidly developing, with new technologies like ultra-rapid charging, vehicle-to-grid, wireless charging, and “plug-and-charge” payments at various stages of development. Although some segments of charging within some leading markets now offer a profitable business case, government actions are still critical for the growth of charging in cities and in rural areas, and for commercial freight vehicles. With limited budgets, especially in light of the COVID-19 pandemic, it is important for governments to target their investments toward the most crucial gaps in the charging ecosystem, while also leveraging other supportive policies to spur investments from the private sector.

This focus area seeks to create a vision for a charging infrastructure ecosystem that can efficiently, equitably, and conveniently serve the diverse needs of all electric vehicle applications in the mass market. This would include investigating several related charging infrastructure questions. Firstly, the focus area would examine different strategies and policies to ensure geographic equity in charging access, including the unique needs and challenges for dense urban areas and also remote rural regions. Secondly, it would examine business cases for the operation of chargers in different settings, including gathering costs of charger operation and installation and identifying upstream electricity-sector opportunities. Thirdly, the research would also consider the emerging charging needs for medium- and heavy-duty vehicle charging and opportunities to accelerate this development, including opportunities to coordinate infrastructure among multiple types of vehicles. To address these questions and create a path to a comprehensive charging ecosystem, the research would identify leading policy solutions, define the roles of different stakeholders, and give recommendations on priorities for government investments.

About the International Zero-Emission Vehicle Alliance

The International ZEV Alliance is a collaboration of 18 governments, founded in late 2015 to accelerate the global transition to zero-emission vehicles. The member governments are five countries (Canada, Germany, Netherlands, Norway, United Kingdom) and 13 subnational jurisdictions (Baden-Württemberg, British Columbia, California, Connecticut, Maryland, Massachusetts, New Jersey, New York, Oregon, Québec, Rhode Island, Vermont, Washington). The collaboration includes the sharing of data, best practices, and lessons learned and involves coordinating on action plans to help the group collectively achieve its ZEV deployment goals. The International Council for Clean Transportation (ICCT) serves as the secretariat to the Alliance.
Each year the Alliance selects three high-priority focus area research topics for a deeper technical understanding and policy exchange; this project is an integral part of one of the focus areas for 2021. This work builds on several previous focus area projects related to charging infrastructure, listed at the end of this document. See these links for more information on the ZEV Alliance announcement to accelerate global ZEV sales, member commitments, publications, and events.

**Project Elements**

The primary project elements are: (1) periodic engagement with the ZEV Alliance during the project; (2) an original research report as described below; and (3) one or more public webinar presentations or in-person events to publicize the event. Engagement with the ZEV Alliance includes participation in monthly project management calls with the ZEV Alliance secretariat, an initial teleconference call with interested ZEV Alliance members to discuss the approach and project priorities, a preliminary results briefing, and the incorporation of input on the consultant’s draft report from the secretariat and ZEV Alliance members.

**Scope and organization of the research report**

The key project deliverable is an original research report of between approximately 25 and 35 pages in length as outlined below:

- **Background and motivation (3-4 pages)**
  - Provide an update on charging deployment in leading ZEV markets worldwide (public, private, and workplace, as data allows)
  - Summarize changing charging needs for the mainstream versus early adopter markets

- **Vision for a charging ecosystem (3-4 pages)**
  - Create a qualitative description of how different types of charging can serve the full ZEV market
  - Identify targets for achieving a mature, flourishing charging system from the consumer perspective
  - Introduce top remaining needs in the charging ecosystem

- **Providing charging in urban and rural environments (4-5 pages)**
  - Review charging needs and unique challenges in dense cities (focused on passenger cars)
  - Catalog dedicated programs to enable convenient charging in urban areas
  - Compare (qualitatively and quantitatively) solutions for charging in urban centers (e.g., price, consumer preference, grid impacts), such as
    - Curbside “public residential” chargers (including lamppost chargers)
    - Private chargers in shared garages
    - Fast charging hubs
  - Review charging needs and unique challenges in rural areas (e.g., grid connection, awareness/finding chargers, targets for coverage)
  - Catalog dedicated programs to enable convenient charging in rural areas, including along long-distance travel corridors
Provide policy recommendations for city, regional, and national governments on ensuring geographic equity in charging

- **Improving business cases for public charging (4-5 pages)**
  - Analyze the financial viability of public charging in 2-3 major global markets, and identify the key drivers for the profitability of public charging (e.g., through sensitivity analysis)
    - DC fast
    - Level 2/regular
  - Review charging consumer-facing pricing in leading markets (equivalent cost/kWh)
  - Compare different ownership and operation models for public charging that may help support expanded roll-out, including role of utilities, government, and third-party site hosts
  - Discuss the role of government in improving business case for public charging, potentially including the following
    - Mitigating demand charges
    - Reducing permitting and approval costs and delays
    - Electricity market reforms to reduce costs for charging operators

- **Emerging solutions for local and regional commercial vehicles (4-6 pages)**
  - Catalog and compare public, private, and utility programs to build charging for medium and heavy-duty vehicles (MHDVs), focusing on urban and regional logistics applications
  - Review data on the costs (technology, installation, and operations) for MDHV charging
  - Identify examples and future opportunities to co-locate or share grid infrastructure for charging among different passenger and commercial applications
  - Discuss the role of government in growing and improving the charging network for local and regional commercial vehicles

- **Conclusions and policy recommendations (4-5 pages)**
  - Summary of charging needs across vehicle and user segments in a mainstream ZEV market (text and/or graphic)
  - Guidance for directing public funding
  - Policies and practices to improve consumer experience of locating and using charging
  - Ensuring coordination and continuity across borders (e.g., within Europe, US-Canada)

**Project Timeline and Engagement Steps**

This project timeline is set by the schedule in Table 1 below. The secretariat (International Council on Clean Transportation) expects to notify the selected consultant by early March and sign a contract for this work with the consultant by the end of March. There are several critical dates related to this project. A January 12th ZEV Alliance meeting will serve as a project kickoff with ZEV Alliance members to discuss priorities, approaches, and related activities for the focus area; the Secretariat will share results of this meeting with the consultant. The consultant’s work would primarily be done from March through September. An informal discussion between the consultant and interested ZEV Alliance members will offer an opportunity to further refine the project scope, tentatively scheduled for April 7. The consultant would provide a briefing on early
findings on a **June 8th** teleconference with ZEV Alliance members, who may provide feedback to incorporate into the report. A preliminary draft report would be submitted to the secretariat by **July 16th** and a draft final report to the ZEV Alliance members by **August 13th**.

The secretariat will serve as the project manager to help coordinate with the consultant and meet ZEV Alliance member expectations throughout the project. This includes assisting in collecting and managing ZEV Alliance member input. The engagement also includes short monthly project management check-in calls with the consultant and secretariat from March through November. Following the draft report submission to the ZEV Alliance members by August 13th, the members will have two weeks to review the draft. The consultant would incorporate input, with support from the secretariat, by September 24, at which point the report would be submitted for final publication and design layout steps. Ideally, the report would be released in conjunction an event in fall 2021 (for example, at New York Climate Week, COP26, or a member-hosted event). The report will be made publicly available at the ZEV Alliance page (see [publications](#)), and its findings publicized via a public webinar.

**Table 1.** Timeline for proposed 2021 ZEV Alliance project

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* = major project milestone; / = interim milestone with the secretariat

**Evaluation Criteria for Proposals**

Evaluation of submitted proposals will be based on the following six criteria.

(1) Commitment to complete the scope of work (Maximum 2.5 pages)

The selected consultant must commit to completing all elements of the research report, engagement with the secretariat and members of the ZEV Alliance, and presentations. Simply copying the above “Project elements” text within the proposal is sufficient, including any additional proposed supporting actions, and the rationale for excluding or modifying any of the scope elements.

(2) Commitment to the project timeline (Maximum 1 page)

The selected consultant must commit to meeting the specified project timeline. The commitment can be satisfied by copying the “Project timeline” table and text above into the proposal, along with a description of the consultant’s internal process, use of internal milestones and contingency planning to quickly troubleshoot issues, method for updating
and working with the secretariat, and any additional steps needed to ensure the project timeline is met.

(3) Prerequisite technical and policy experience (Maximum 1 page)
- The selected consultant must provide sufficient evidence that it has the prerequisite technical and policy expertise and experience to complete the proposed work by:
  o Sharing (link okay) exactly 3 public reports authored by the consultant that are most directly related to this work; and
  o Summarizing (in up to 150 words for each public report) how each report relates to this proposed project.

(4) Staff management plan (Maximum 1 page)
- Identify up to three key individual staff members who will work on this project, and for each:
  o Describe (in 300 words or less for each member) their individual roles in completing the work elements above and why they are well suited for the work; and
  o Include the curriculum vitae for the principal investigator who will be the primary contact and responsible for executing the project (max. 3 pages, separate document).

(5) Knowledge sharing and outreach (Maximum 1 page)
- The selected consultant must commit to presenting the findings of the work at a public webinar.
- The proposal should provide ideas and a process to release and publicize the report in a way that will maximize knowledge sharing by:
  o Suggesting venues where a launch event could take place; and
  o Advising the ZEV Alliance members on actions they could take to continue promoting and sharing the findings of the report with relevant stakeholders.
- The proposal should provide examples of past consultant experiences communicating related work.

(6) Additional value add (Maximum 1 page)
- Please name any additional tools, data, case studies, knowledge-sharing opportunities, or project experience the consultant can offer to advance the overall project objectives in a unique or exceptional way (limit of 500 words).

**Budget**
- The maximum allotted compensation for the proposed work is $50,000 (total, including all taxes and fees). Any proposals exceeding this amount will not be eligible for consideration.
- Please provide a high-level overview of your budget (e.g., amount to be spent on staff time, subcontractors, travel, software and data purchases, etc.) Also include preferred payment timing to match the project timeline and milestones (300 words maximum).

**Format, References and Submission**
We emphasize the importance of succinct proposals. Proposals should be between five and eight pages in length and submitted in Word format using 11- or 12-point font. Proposals exceeding 8 pages will not be accepted.
Please include two references that can personally attest to the consultant’s experience in successfully executing similar projects, ideally on a similar topic. A complete submission should include only the following: (1) the proposal in Word or pdf format of 5-8 pages; (2) the principal investigator’s curriculum vitae of up to 3 pages; (3) 3 examples of related projects, if not publicly accessible online; and (4) contact information for two professional references.

The proposal should be submitted to secretariat@zevalliance.org by no later than February 8. If potential bidders express initial interest in submitting a proposal by February 1, the secretariat will email any potential updates to this Request for Proposals. The secretariat may answer or ask questions for clarification but is not obligated to respond to inquiries.

**Related ZEV Alliance work**

This focus area research should build upon and complement previous ZEV Alliance research, including the following:


