Livewire Data Platform – A Solution for EEMS Data Sharing

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June 11, 2019 • eems016_levene_2019.pdf

OVERVIEW
The Livewire Data Platform provides:
• A platform allowing easy and secure data sharing and discovery using both human readable and computer-accessible application programming interfaces (API) formats.
• A community for building partnerships and collaboration around data in order to find answers to today’s biggest mobility challenges.
• A system allowing shared data to grow in size and complexity as DOE's Energy Efficient Mobility Systems (EEMS) program evolves.

RELEVANCE
• Data is a critical need for the EEMS research community and while many projects generate data, there are few ways to share data and no standard ways to find data.
• EEMS researchers produce data as a result of the technologies they study and this data can be applicable as an input, or an enhancement to another researcher’s work.
• To bring about fundamental changes in our transportation system, data sharing must be endemic.

SUMMARY
• More than 20 interviews have been conducted, validating that an EEMS data platform is necessary.
• A catalog of more than 43 EEMS-relevant datasets have been identified.
• By leveraging two existing successful platforms (https://data.energy.gov and https://data.gov), the Livewire Data Platform can be built efficiently.
• Data will be protected behind an authentication process and usage of data will be gathered for both API and data downloads.
• Three datasets will be available by the end of June—Mobility Energy Productivity (MEP), White Tractor (WT) survey and the University of Michigan’s Connected and Automated Vehicle (CAV) project.
• Ten datasets will be available by end of September 2019.
• Involving researchers and partners in the development process will aid in the reduction of human barriers to data sharing.
• The EEMS data working group will lead the cultural shift toward data sharing.
• The Livewire team continues to engage with EEMS projects and expects to be sharing new APIs and 20 datasets by September 2020.
• Future work includes building complex data management capabilities and tackling difficult legal challenges that hinder sharing.

ACCOMPLISHMENTS AND PROGRESS
Cataloged User Needs
• Conducted more than 20 interviews with EEMS researchers.
• Compiled a catalog of more than 43 potential datasets that people have or would like to have.

Received Approval from Web Governance Team
• Public Affairs, Legal, and Design approval received in Q2 2019
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APPROACH
Leverages Existing Successful Assets
API Umbrella

NREL launched data.gov in 2013 to support 14 federal agencies. The site has surfaced 2.1 billion data requests to date.

DOE’s Wind Energy Technologies Office. The site stores 195 TB of project data.

PNL launched data.gov in 2016 to support DOE’s Wind Energy Technologies Office. The site stores 195 TB of project data.

Connects Data Users and Data Providers
• Data providers control who sees their data and receive analytics on how their data is being access
• Data users benefit from the ability to easily discover relevant data and forge new partnerships with data owners.

ACCOUNTABILITY AND COORDINATION
DOE EEMS Program

SMART Mobility Lab Consortium

National Renewable Energy Laboratory (NREL)
• Overall Project Management
• Software Development (APIs)
• Complex Data Management
• FleetDNA
• Argonne National Laboratory (ANL)
• Lawrence Berkeley National Laboratory (LBNL)
• Pacific Northwest National Laboratory (PNNL)

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• Argonne National Lab (ANL)
• INL
• Lawrence Berkeley National Lab (LBNL)
• NREL
• Oak Ridge National Lab (ORNL)
• Global
• EEMS Living Lab Partners

Project Tasks and Schedule

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<th>Task</th>
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<th>Responsibility</th>
<th>Project Year</th>
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<td>Task 1 – Create data management platform and share datasets</td>
<td>NREL, PNNL, INL</td>
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<td>On track – Milestone達成</td>
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