Technical Assistance Request

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Ready! America-Made Solar Prize

Our proposal to develop a customer engagement portal for consumers pursuing the integration of Electric Vehicles, solar and potentially energy storage will benefit from several key areas. Because we have successfully developed a commercialized software platform to engage solar customers, we can provide the basic expertise to adapt this platform to include additional energy system integrations.

We will need to draw on the fields of behavioral economics, behavioral psychology, urban transportation economics, game theory and electric grid dynamics. Our proposal hinges on the intersection of personal transportation habits, personal resource management and the dynamics of the electric grid. It is a new proposition to consider that an individual can have a contributing effect on the optimization of the electric grid's functionality.

Our aim is to avoid the black box technological solution, rather emphasizing the personal experience in relation to market signals, gamification and domestic economics. We will leverage the delivery of relevant data and cogent, compelling visualizations to steer behavior towards new models of energy management.

Specifically, we will need to understand the habits of transportation as a function of demographics, geography and temporal patterns in order to build models to test against the grid's operation and profile. We will compare energy data as specific as the home energy profile as well as the grid level dynamics represented as the market pricing signals.

Once a framework for the relationship between personal transportation preferences and grid operation can be built, we will need to verify the ability to integrate varied sources of data. We have identified Smartcar.com as a potential source to connect to multiple EV manufacturers through a single API. We will need to validate the availability and cost of this data compared to the needs to provide real time feedback to our users. Additionally, we will need to consult with
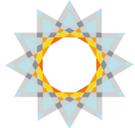
grid operators to determine the availability of real time data commensurate with the data available through the transportation outlets.

Because we have validated that the visualization of real time data from solar production and home energy consumption can produce active engagement, we believe it is possible to extend this to another mode of behavior. What we will need to test is the sensitivity that driving habits, specifically with EV, have against energy consumption and production.

Furthermore, we will need to control for variables including range anxiety, access to charging infrastructure, time to charge and sunk cost consideration to determine which if these barriers we can target to lower. Our thesis hinges on the ability to lower critical barriers of adoption to spur more accelerated growth of EVs.