

**DOCKETED**

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<b>Project Title:</b>	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
<b>TN #:</b>	233539
<b>Document Title:</b>	Email and Presentation - AICInext Company Overview Focus on EV Charging
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**QUESTIONS:**

- 1). Is there an interest in wireless charging of EVs?
- 2). Is there an interest in wireless charging while the vehicle is in motion?
- 3) Is there interest in AI integrating solar, storage, EV charging, microgrid, and grid?

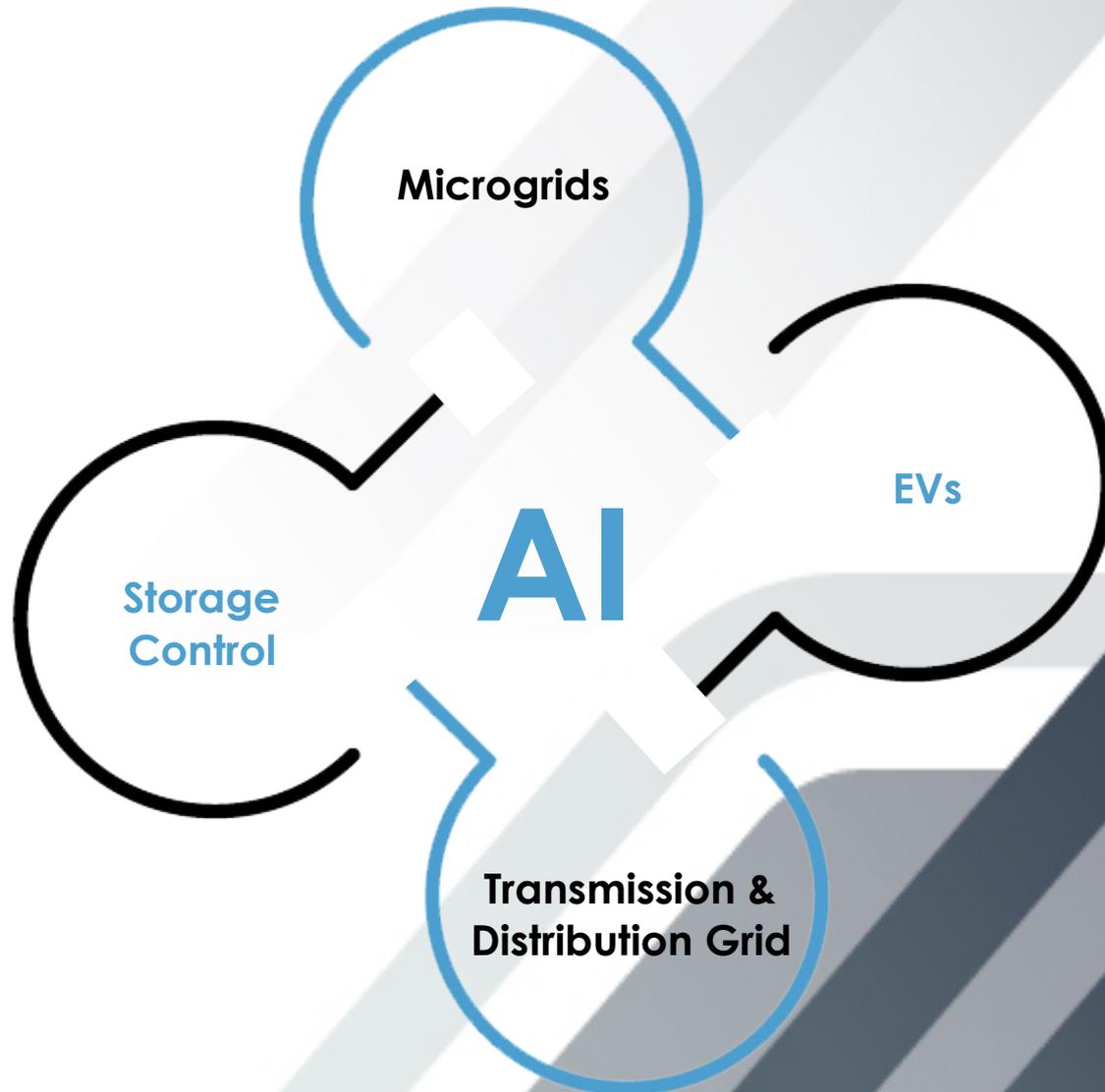
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Note: email or cell is best these days!

**AICInext**  
**Company Overview**  
**Focus on**  
**EV Charging**

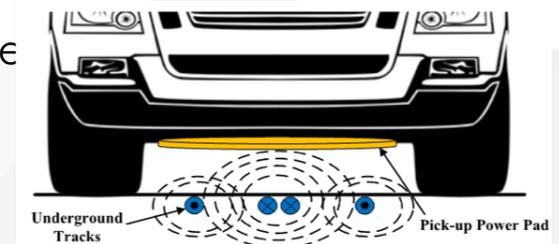


# Current Product Focus



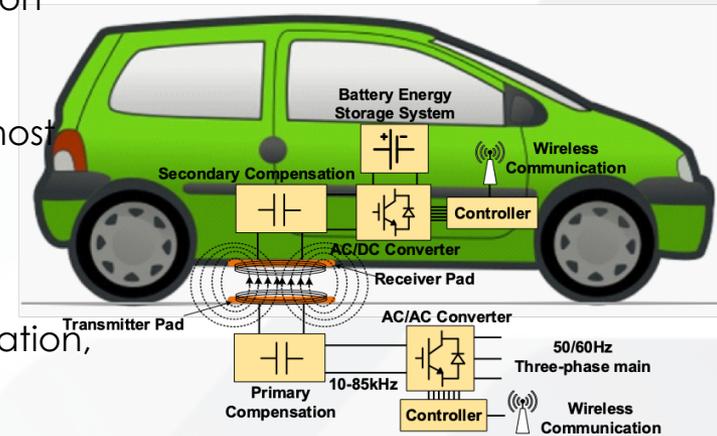
# Wireless Power Transfer (WPT)

- Contactless Electric Vehicle (EV)
  - Automated charging process without interaction of the driver: No cables to handle inside or outside the car.
  - It does not get affected by rain, snow, ice, dust, and dirt. It is clean and safe way of charging electric vehicles.
  - Bidirectional IPT systems can be used to make grid-to-vehicle (G2V) and vehicle-to-grid (V2G) connections.
  - Trucks could charge during loading/unloading at terminals.
  - Can be integrated through our PEACE AI to solar generation, storage, and the grid/microgrid.
  - Protected by an issued patent.



# DYNAMIC WPT

- **Charges while vehicle is in motion.**
- If implemented on highways (dynamic or in-motion wireless charging) unlimited range for EVs without plugging-in or stopping for recharging.
- This technology can revolutionize the future transportation systems.
- Reduces the size, weight, and cost of the battery, the most expensive part in an EV.
- Reduce/eliminate “fueling” time.
- Can be integrated through our PEACE AI to solar generation, storage, and the grid/microgrid.
- Protected by an issued patent.



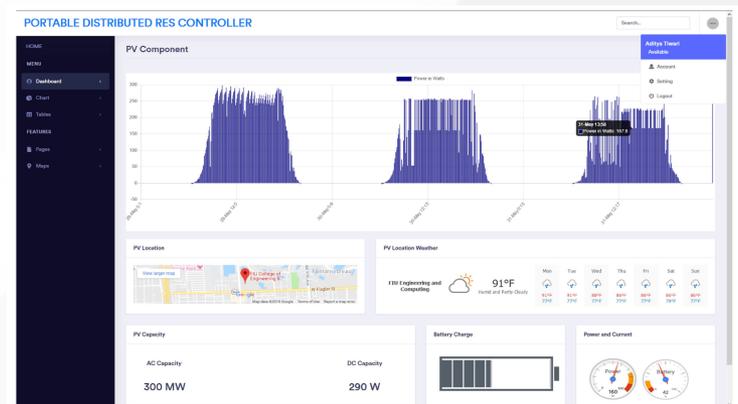
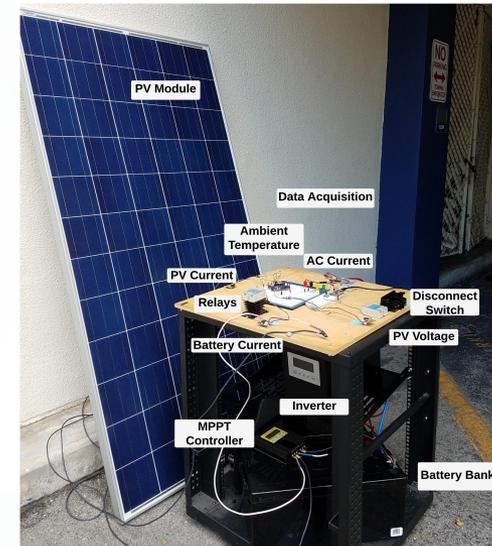
# Potential for Ports and Mines

- Bounded closed-loop environments today offer great opportunity to provide “continuous” wireless charging while the tractor is in use.
  - Expensive to operate currently.
  - Dirty operations.
- Ports and mines are major users of electricity and present issues in “islanded” environments.
  - Peak demand at ports and mines may compete with other demand driving up demand prices.
  - The cost to increase traditional generation capacity in an islanded environment can be prohibitive.
- Ports have large secured empty spaces where solar could be installed.
  - Solar combined with electricity storage has been shown to be the lowest cost of electricity while also being the cleanest.



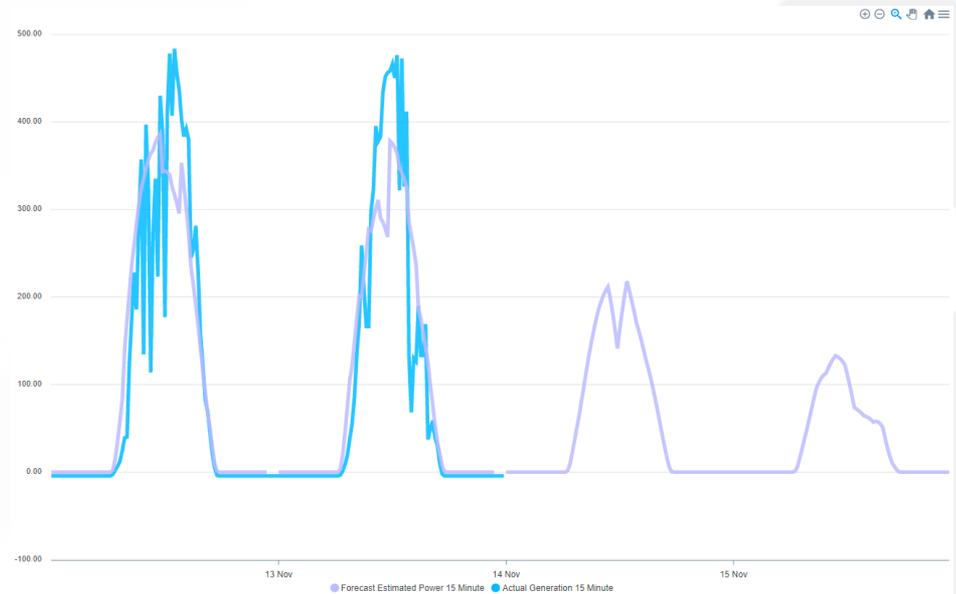
# Components of PEACE System

- Basic Capability:
  - Ensure continued availability of clean energy to consumers including during and after natural disasters to power emergency appliances.
- Extended Capabilities:
  - Scale-up as medium-to-large scale power hubs that can provide grid services and ensure network resilience with optimal power sharing.



# Weather-based Renewable Energy Prediction Tool

- A highly configurable solar energy generation prediction system using weather data from many sources, for both the small-sized and large-sized PV plant.
- Performs short-term as well as long-term prediction of energy generation, from 15 minutes ahead to up to 9 days in the future.
- Based on different kinds of weather parameters including vast quantities of past and future data from various locations such as airports throughout the United States and beyond makes it highly accurate and can enhance the value of electricity if sold to a utility.



# Artificial Intelligence-Critical Infrastructure: Overview

- Focused on delivering world-class AI solutions for critical infrastructure.
- Based on IEEE standards and knowledgeable of regulatory environment.
- **Scalable** technology for **microgrid** to distribution and transmission grid solutions.
- Developed and trained AI in the world's largest smart-grid environment.
- Integrates solar/wind generation with storage, EV charging, and the grid.
- Predictive analytics support **Transactive Energy**.
- Experienced partnering with major utilities, universities, and governmental organizations, e.g. Oak Ridge National Laboratory.

**1.4MW solar generation over a parking lot with predictive AI and integrated with FPL.**



**Analytics used here and elsewhere routinely monitor and predict future solar generation and can be factored in EV charging and storage management.**