

FAQs - AI Innovation Challenge | SPT Energy AI LAB.

SPT Energy AI Innovation Challenge - Riverside Edition FAQs (Updated)

Here is an updated list of frequently asked questions about the SPT Energy AI Innovation Challenge - Riverside Edition, incorporating the questions from the participant's email.

General Information

- **What is the SPT Energy AI Innovation Challenge - Riverside Edition?** This is a competition partnered with UCR for open students focused on innovative smart energy system designs that leverage Artificial Intelligence to optimize battery storage technologies for real-world energy challenges. It coincides with the launch of the SPT Headquarters and SPT ENERGY AI LAB in Riverside City.
- **What is the competition theme?** The theme is "Future Forward: Energy Management Innovation Showcase".
- **Who are the organizers of the event?** The organizers are SPT, SPT ENERGY AI LAB, Greater Riverside Chambers of Commerce, and UCR.
- **Who is supporting the event?** The event is supported by the City of Riverside.
- **In short words, this challenging problem is about "use AI to solve environment issue", focusing on things like solar panels, energy, etc?** Yes, the challenge is centered around using AI to develop innovative smart energy system designs that optimize the use and application of battery storage technologies to address real-world energy challenges. This involves leveraging AI in the context of clean energy, including areas like solar energy and energy management.

Eligibility and Participation

- **Who can participate in the challenge?** The competition is for open students, including undergrads, grads, and PhD candidates.

Submission Details

- **What are the submission requirements?** Submissions require a Project Proposal (PPT or PDF) and a Required Supplement which can be either a Demonstration Video (maximum 3 minutes) or a Mini Simulation/Model Prototype.
- **What should the Project Proposal include?** The proposal should detail the specific AI model(s) used, explain how the AI will be trained and the data sources leveraged, clearly define the real-world energy challenge addressed and how smart energy storage, powered by AI, plays a crucial role, and quantify the anticipated benefits and impact of the solution, specifically considering the potential impact within the context of Riverside's energy landscape.
- **What kind of energy storage applications can be considered?** Examples include Microgrid Optimization with Battery Storage, Intelligent Energy Dispatch for Battery Systems, AI-Enhanced Battery Management Systems (BMS), Smart Home Energy Management with Battery Integration, Electric Vehicle (EV) Smart Charging and Grid Services, and Second-Life Battery Applications.
- **What should the Demonstration Video showcase?** The video should showcase the core functionality of your smart energy system concept. This could illustrate the AI in action, the user interface (if applicable), or the predicted behavior of the system.
- **What should the Mini Simulation/Model Prototype represent?** It should be a tangible representation of your system's logic. This could be a software simulation demonstrating the AI's control over energy storage, a small-scale hardware model illustrating the interaction of components, or a visual representation of the data flow and decision-making process.
- **Is there a specific focus for the solutions?** Yes, students are strongly encouraged to tailor their solutions to address specific energy challenges relevant to the Riverside area.
- **Do we find some potential issue, sub-problem under a topic like "EV Charging", and is it solvable by AI (software)?** Yes, you should define a real-world energy challenge and how smart energy storage, powered by AI, addresses it within your chosen topic. The focus should be on solutions that leverage Artificial Intelligence to optimize the use and application of battery storage technologies, implying a software-based AI approach. Issues that are primarily hardware-related and cannot be solved by software or do not specifically utilize an AI model for their core solution should be excluded, as the challenge emphasizes AI-powered solutions.

- **How many sub-problems are you looking for under a topic?** The documents do not specify a required number of sub-problems. The focus is on clearly defining a real-world energy challenge and how your AI-powered smart energy storage solution addresses it.
- **For "AI Model & Implementation", do we only need to describe a way to achieve it, or would you prefer that we can actually find some data online and run a simple model?** The submission requirements state you should "Detail the specific AI model(s) being utilized" and "Explain how the AI will be trained, the data sources it will leverage, and the rationale behind its selection". While the documents don't explicitly require running a model with online data, providing evidence of your model's potential through simulations or data-driven projections for the projected outcomes is encouraged.
- **For "Projected Outcomes & Impact", do you expect to see the impact for every sub-problem? Do we need to find data from the internet to support it? Run a sample model?** You are asked to quantify the anticipated benefits and impact of your solution. This could include improvements in energy efficiency, cost savings, reduction in carbon emissions, enhanced grid stability, or increased reliability. You should be specific and, where possible, use data-driven projections. Considering the potential impact within the context of Riverside's energy landscape is also encouraged. While finding data online and running a sample model could support your projections, the documents do not explicitly mandate this for every sub-problem. The focus is on demonstrating the potential positive impact of your overall solution.
- **For "Video", I can't think of a way what to put in the video if everything is written very clearly in a PDF file. Does AI-generated video count? What kind of video, or is a specific part you are looking for?** The Demonstration Video should showcase the core functionality of your smart energy system concept. This can illustrate the AI in action, the user interface (if applicable), or the predicted behavior of the system. The goal is to provide a visual representation that complements your proposal. The documents do not specify if AI-generated videos count or a specific format beyond showcasing functionality. Consider demonstrating how your AI model would work in a simulated environment or a visual representation of the data flow and decision-making process.

Important Dates

- **What is the submission deadline?** The submission deadline is May 16, 2025 (Friday).

- **When will the finalists be announced?** Finalists will be announced on May 19, 2025 (Monday).
- **When is the Final Presentation?** The Final Presentation is on May 30, 2025 (Friday) at 1:00 PM.
- **When is the Award Ceremony?** The Award Ceremony is on June 3, 2025 (Tuesday).

Awards and Opportunities

- **What awards are available?** Awards include the Innovation Award, Practicality Award, Future Talent Award, and Jury's Choice Award.
- **Are there internship opportunities?** Yes, winners will earn internship slots at the SPT ENERGY AI LAB, with priority access to join the SPT Summer Internship program.

Event Location

- **Where is the event taking in place?** The event will be held at the SPT Headquarters Multi-Function Conference Hall (2990 Myers St, Riverside, CA 92503).

About SPT ENERGY AI LAB

- **What is the SPT ENERGY AI LAB?** SPT ENERGY AI LAB is SPT's flagship R&D center in North America dedicated to advancing the integration of artificial intelligence in the clean energy industry. The lab focuses on AI-driven power forecasting, battery storage optimization, microgrid control systems, and smart user-side energy solutions.
- **What is the role of the SPT ENERGY AI LAB in Riverside?** The lab plays a vital role in building Riverside into a true smart energy city.
- **Who is the Director of the SPT ENERGY AI LAB?** The Director is Dr. Alex Liu.

Judging Process

- **In the event description, it says all undergrads, grads, and PhD can participate. But during the judge process, how would you guys make this fair since there is a big jump in knowledge level across different degrees? For example, a PhD must know much, much, much more than an undergrad; this can be reflected in the solution, the AI model they provided.** The provided documents do not contain information on how the judging process will be made fair for participants across different degree levels.