

Automation of the Simplified Performance Rating Method Energy Modeling in Commonly Used Simulation Tools

The Simplified Performance Rating Method (S-PRM) is a modeling-based compliance path with commercial energy code that targets smaller and simpler buildings that account for most of the US building stock. It is slated for inclusion into ASHRAE Standard 90.1 2025 and is expected to significantly increase the number of projects that use energy modeling to optimize design and document compliance. The proposed scope includes automating S-PRM compliance in popular simulation tools including cove.tools, EnergyGauge, eQUEST, NEO and OpenStudio; developing a test suite to validate the implemented feature; performing the testing; and piloting the updated tools in several jurisdictions and utility programs.

The project addresses the following key areas of interest targeted by this FOA:

1. State and Local Code Adoption: The project will integrate S-PRM compliance into five popular simulation tools, facilitating S-PRM adoption by jurisdictions. It will include piloting the new functionality in Minnesota and Florida. New York City may also participate.
2. High Impact States and Local Jurisdictions: The project includes updating EnergyGauge software used by the majority of projects in Florida, a high impact state, and piloting the implementation in selected Florida jurisdictions.
3. Rural Communities: Studies have shown that due to cost and complexity, modeling-based compliance is currently largely limited to large, complex buildings common in metropolitan areas. Automating S-PRM compliance will bring benefits of energy modeling to rural communities where most buildings are smaller.
4. Implementation and Compliance: The project will reduce the time and cost of documenting compliance by design teams and streamline submittal reviews by jurisdictions through automating the compliance modeling in commonly used simulation tools and verifying the implemented automation through testing.
5. Utility Data and Partnerships: The proposed scope includes piloting the updated software tools in several utility incentive programs. Snohomish County Public Utility District (SnoPUD) and Xcel Energy (Minnesota territory) expressed interest in participating.
6. Partnerships: The proposed project team includes members of ASHRAE Standard 90.1 and developers of five simulation tools; the work will be completed in partnership with jurisdictions and utility incentive programs.

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Team Member Organizations: Karpman Consulting LLC; Willdan; cove.tool; Florida Solar Energy Center (FSEC), Performance Systems Development (PSD), James J. Hirsch & Associates (JJH)

Partner Organizations: Snohomish County Public Utility District (SnoPUD); Xcel Energy (Minnesota territory); State of Minnesota (for SB2030 program); State of Florida

Project Location: National

Confidentiality Requirements: None