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ESIG's *EV Load Forecasting Guide* provides 20 best practices for developing detailed, actionable, and vetted electric vehicle forecasting approaches to best serve every jurisdiction with its unique needs

Reston, VA. – The Energy Systems Integration Group (ESIG) has released the *EV Load Forecasting Guide*, which articulates core principles for EV load forecasting, synthesizes leading practices, and assists utilities, regulators, and stakeholders in adopting effective forecasting approaches for electrified transportation.

Utilities' forecasting efforts underpin billions of dollars in grid investments that ensure system reliability. While, historically, forecasting has relied on trends in economic and population growth, transportation electrification presents a new and complex planning challenge. Electric vehicle (EV) charging is driven by complex human behaviors, is mobile, and at the same time can concentrate geographically in ways that, without proper planning, can quickly overwhelm local distribution systems.

"It is more important than ever to understand where and when EV charging loads will arrive on the grid," said Greg Mandelman, director of analytics and energy programs at Electric Power Engineers, and a lead author of the guide. "This is especially critical as utility planners and regulators navigate high load growth, energy affordability, and increased grid complexity."

As market share for new light-duty EVs grows, so does the need for new forecasting approaches. Load from a single EV can equal nearly half the annual electricity consumption of an average U.S. household, and this new demand can materialize faster and with less notice than traditional loads. Planners must anticipate not only *how much* power will be needed, but also *when* and *where*.

To adequately prepare for future EV adoption, utility planners, regulators, and stakeholders require robust, fit-for-purpose forecasts that can better support planning for EV loads and help reduce the risk of service delays and inefficient grid investments. An EV load forecast is more than a prediction of future demand—it is a critical tool for evaluating potential solutions to meet load growth. Scenario analysis is an increasingly important modeling technique that can help planners manage more effectively investment risks and design a more efficient, flexible grid.

“This ESIG guide provides stakeholders across the spectrum with detailed, actionable, and vetted approaches that equip them to develop the EV load forecasting methods that will best serve each jurisdiction with its unique needs,” said Matthew Schuerger, senior fellow at ESIG.

The guide’s recommendations were informed by an industry advisory group, a regulatory advisory group, and interviews with subject matter experts. The result is 20 best practices across the core components of EV load forecasting: scoping, implementing, and reviewing the forecast, and applying it to inform actionable grid planning, foster coordination and data sharing among all planning stakeholders—including utilities, regulators, other agencies, and other parties—to align assumptions and create more cohesive forecasts, and incorporate emerging technologies and modeling advances.

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About Energy Systems Integration Group

ESIG began in 1989 as the Utility Wind Interest Group, an organization created to educate utilities about wind power. Within ten years, it developed into a significant technical educational organization and convener of peer-to-peer workshops to assist utilities, system operators, project developers and equipment manufacturers from around the world with the integration of wind power, and then by 2011, also with the

integration of solar power. With renewables becoming the mainstream sources of new generation and reliability services, the organization expanded its mission, branding and international participation in 2018 through a merger with the International Institute of Energy Systems Integration (IIESI) to become the Energy Systems Integration Group (ESIG), taking on not just the planning and operations of electricity systems and power markets, but also the growing issues for other energy vectors, including the electrification of transportation, buildings and industry for decarbonizing the entire energy supply.

ESIG now serves as a resource for a broad cross-section of the global energy industry, including utilities, ISOs, independent power producers, project developers, manufacturers, forecasters, consultants, educational institutions, and government agencies, including regulatory bodies.

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