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**IPv6 based Communication and Information Infrastructure for
Energy Internet**

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Abstract

Energy Internet leverages information and communication technologies to enable renewable energy resource integration and multiple energy optimal utilization so that utilities can serve their customers in efficient and reliable way. There is an emerging trend for utilities to adopt communication technologies based on open and secure standard IPv6 in order to lower the cost and ensure interoperability in their smart grid implementation, especially in the smart metering solution rollout. The IPv6 based solution assigns each device in the system with one and multiple IP addresses thus enables peer to peer communications. With build-in security, it enables plug and play capability for various grid devices within the same communication network, like customer electrical vehicles, distributed generations, smart meters, grid sensors and SCADA devices, thus allows multiple services to share the common communication work. The data and measurements collected from the various sensors and services can be naturally integrated to achieve advanced applications, thus can seamlessly integrated with other initiatives like smart city. Furthermore, it can directly leverage the mature network monitoring and management in IP world thus to lower the operation cost of utilities.