

Smart Grid Scorecard

This scorecard was developed to support deployment of the “Smart Grid.”

EnerNex has prepared this checklist for GridWise Architecture Council and Smart Grid News. **You may use this scorecard to assist you in evaluating products and any improvements are welcome and once evaluated will be shared.** If you seek to attribute it to Smart Grid News, you must not alter the document.

This scorecard includes portions of EPRI IntelliGrid technology assessment methodology, EPRI IntelliGrid Architecture Application Guidelines, Southern California Edison's Technology Capability Maturity Methodology, California Energy Commissions (CEC) Public Interest Energy Research (PIER) program AMI system capability checklist, and GridWise Architecture Council's Interoperability Framework and Checklist. Not all measures developed by these organizations can be applied to every product. We have selected key measures that are particularly relevant to each product that we review.

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Quality	Criteria	Yes/No
Impact	<i>Does it make the power system more reliable, efficient, predictive or interactive?</i>	
	Improves power system wide-area reliability	
	Improves power system efficiency and optimization	
	Improves prediction and simulation of power system operation	
	Improves matching of power supply with demand, e.g. markets	
	Improves consumer participation in the power system	
Openness	<i>Is the technology freely and widely available?</i>	
	Intended to encourage communication between devices and systems	
	Interface specifications are published	
	Interface specifications are implemented by multiple (many) vendors	
	Interface specifications are reviewed and updated by users	
	Can be deployed without using or revealing proprietary intellectual property	
Standardization	<i>Are the interfaces defined according to recognized standards?</i>	
	Uses standards recognized by industry	
	Uses standards recognized by a national body	
	Uses standards recognized by an international body	
	Is certified by an independent organization	
	Is certified according to standardized test procedures	
Security	<i>Does it protect critical information and manage who is authorized to access it?</i>	
	Authenticates and authorizes users according to their roles	
	Protects consumer, business and operational information	
	Detects attacks and intrusions	
	Permits centralized management of security credentials	
	Permits logging and auditing of important operations	
Manageability	<i>Does it permit the monitoring and control of performance, configuration, health, accounting, and security?</i>	
	Permits or performs remote determination of health	
	Permits or performs remote enable/disable of devices or functions	
	Permits or performs time synchronization sufficient for application	
	Reports or gathers operational and communications statistics	
	Reports or gathers alerts and warnings	
Upgradeability	<i>Does it permit adding, changing or improving key features later?</i>	
	Permits remote download of software or firmware	
	Permits remote download of configuration, features, or settings	
	Permits remotely changing security algorithms and credentials	
	Permits remotely changing communications technology	
	Integrates well with older versions	

Quality	Criteria	Yes/No
<i>Scalability</i>	<i>Does it permit future expansion?</i>	
	Contains no fixed limits on growth	
	Permits and encourages configuration version control	
	Can be deployed at millions of sites	
	Co-exists with or improves legacy systems	
	Can be deployed at a variety of locations in the power system	
<i>Extensibility</i>	<i>Does it make it easier to integrate new devices and applications?</i>	
	Automatically detects changes in topology or configuration settings	
	Designed in small modules with standardized interfaces	
	Publishes or describes what data and services are available	
	Shares a standardized information model across the system	
	Separates definition of information from how it is transported	
<i>Cost-Effective</i>	<i>Does it add measurable business value to the organization using it?</i>	
	Has well-defined and published performance standards	
	Has been tested to performance standards	
	Reduces installation or maintenance costs	
	Reduces operational costs	
	Enables new businesses, products or services	
<i>Self-Healing</i>	<i>Does it recover automatically from failures?</i>	
	Operates during power outages	
	Permits or performs automatic choice of communications path	
	Integrates communications and power system failure management	
	Encourages distributed decision-making close to the point of impact	
	Encourages wide-area coordination and recovery from failures	
<i>Interactivity</i>	<i>Does it help the grid and its users react to each others' needs?</i>	
	Encourages consumer awareness of energy usage	
	Creates new choices for consumers	
	Encourages participation in energy markets	
	Minimizes visibility of technology	
	Permits exceptions and special cases	