

Smart Grid System Report

Approach Taken to Biennial Report to Congress

EU-US Cooperation on Smart Grid Assessment Methodologies

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Legislative Requirements

EISA Title XIII Sec 1302: “...report to Congress concerning the status of smart grid deployments nationwide and any regulatory or government barriers to continued deployment.”

- ▶ Current status of smart grid deployment, including
 - Report on the prospects of smart grid development
 - Take a regional perspective
 - Identify regulatory or government barriers
- ▶ Coordination & advice
 - Smart Grid Task Force (DOE, FERC, NIST, DHS, EPA...)
 - Smart Grid Advisory Committee (industry advisors)
 - Other stakeholder groups
 - ARRA SG Investment and Demonstration Programs
 - Energy Information Administration (EIA) for survey updates
 - Targeted webinars and interviews
- ▶ Update biennially

Impact Characteristics

- ▶ Enables informed participation by customers
- ▶ Accommodates all generation & storage options
- ▶ Enables new products, services, & markets
- ▶ Provides power quality for the range of needs
- ▶ Optimizes asset utilization & operating efficiency
- ▶ Operates resiliently to disturbances, attacks, & natural disasters

Derived from DOE Modern Grid Strategy's smart grid principal characteristics

Measuring Smart-Grid Deployment: 21 Metrics

▶ Area Coordination

- Dynamic pricing
- Real-time operations data sharing
- Distributed resource interconnection policy
- Policy/regulatory progress

▶ Distributed Energy Resources

- Load participation
- Load served by microgrids
- Distributed generation
- Plug-in electric vehicles
- Grid-responsive load

Indicators of smart grid deployment progress – not comprehensive measures

▶ Delivery (T&D) Infrastructure

- T&D system reliability
- T&D automation
- Advanced meters
- Advanced system measurement
- Capacity factors
- Generation, T&D efficiencies
- Dynamic line ratings
- Power quality

▶ Information, Finance, Renewables

- Cyber security
- Open architecture/standards
- Venture capital investment
- Renewable resources

Smart-Grid Trends in USA

Trend	Metric Areas
High	R-T data sharing, distributed resource interconnection policy, distributed generation, T&D automation, advanced meters, advanced measurements, venture capital
Moderate	Dynamic pricing, policy/regulatory progress, renewable resources
Low	Load participation, microgrids, plug-in electric vehicles, grid-responsive load, dynamic line ratings, cyber security, open architecture/standards
Improving	Generation and T&D efficiencies
Flat or slight decline	Capacity factors, power quality, T&D system reliability

Thank you

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