Functionality Category	Enabler	KEY BENEFITS	UNCERTAINTIES
Distribution System Optimization	Fault Detection, Isolation, Restoration (FDIR)	RELIABILITY (by reducing the number of customers impacted by a power outage) ROBUST TECHNOLOGY (commonly deployed on grid systems)	
Distribution System Optimization	Automated Feeder Reconfiguation	RELIABILITY (by isolating damaged portions of the feeder and restoring power to the undamaged portion of the feeder)	EXTENT OF BENEFIT (not significant value in lightly loaded areas)
Distribution System Optimization	Integrated Volt/VAR Control, Conservation Voltage Reduction	ENERGY SAVINGS (by reducing line losses, also can be used as a means to reduce peak load)	EXTENT OF BENEFIT (relative to other efficiency options) RELIABILITY (voltage more likely to drift out of range) COST EFFECTIVENESS (relative to other efficiency options)
Distribution System Optimization	Remote Monitoring & Diagnostics (equipment conditions)	RELIABILITY (by identifying equipment problems before they result in outage)	TECHNOLOGY (availability of effective options) COST EFFECTIVENESS (relative to current equipment monitoring procedures)
Distribution System Optimization	Remote Monitoring & Diagnostics (system conditions)	RELIABILITY (by identifying outages remotely to isolate and dispatch crews)	
Distributed Resource Integration	Remote Distributed Generation Disconenct	CLEAN ENERGY (helps integrate distributed resources) ENERGY TECHNOLOGY (helps promote introduction of technology on the grid)	EXTENT OF BENEFIT (likely to impact few customers)
Distributed Resource Integration	Voltage Regulation	CLEAN ENERGY (helps integrate distributed resources) ENERGY TECHNOLOGY (helps promote introduction of technology on the grid)	EXTENT OF BENEFIT (likely to impact few customers)
Distributed Resource Integration	Load leveling and shifting	CLEAN ENERGY (helps integrate distributed resources) ENERGY TECHNOLOGY (helps promote introduction of technology on the grid)	EXTENT OF BENEFIT (likely to impact few customers)
Distributed Resource Integration	Streamline DG Interconnection	NOT A FUNCTION ON THE GRID	
Distributed Resource Integration	Intentional Islanding (microgrid) control	FLEXIBILITY (abiity to reconfigure system based on system conditions) ENERGY TECHNOLOGY (helps promote introduction of technology on the grid)	NEW TECHNOLOGY (not currently done in scale) EXTENT OF BENEFIT (likely to impact few customers) COST EFFECTIVENESS (relative to other options)
Demand Optimization	Access to Customer Information	NOT A FUNCTION ON THE GRID	
Demand Optimization	Home Area Network Communications Capability	ENERGY SAVINGS (through customer information)	COST EFFECTIVENESS (relative to other options) EXTENT OF BENEFIT (likely to impact few customers)
Demand Optimization	Utility/3rd party DR programs (load control)	PEAK LOAD REDUCTION (through customer price signals)	COST EFFECTIVENESS (relative to other options) EXTENT OF BENEFIT (likely to impact few customers)
Demand Optimization	Time Varying Pricing	PEAK LOAD REDUCTION (through customer price signals)	EXTENT OF BENEFIT (amount of peak demand reduction) COST EFFECTIVENESS (particularly assuming AMI deployment)
Demand Optimization	Customer Choice	NOT A FUNCTION ON THE GRID	
Demand Optimization	Advanced Load Forecasting	FLEXIBILITY (ability to better forecast energy demand)	
System Hardening	Elevated Substations	HARDENED GRID (for extreme events)	EXTENT OF BENEFIT (not currently included in system planning needs)
System Hardening	Equipment hardening (submersibles; spacer cables; undergrounding)	RELIABILITY (reduced outages in storm conditions) HARDENED GRID (better response in storm conditions)	TECHNOLOGY (many options to achieve goals with varying cost benefit)
System Hardening	Distributed Generation/Storage?	See microgrid	
System Hardening	Vegetation Management	RELIABILITY (reduced outages in storm and blue sky days) ROBUST TECHNOLOGY (widespred use on grid systems)	
Workforce Management	Mobile Workforce Management Systems	RELIABILITY (improves effieciency of response following outages)	
Workforce Management	Mobile GIS Platforms	See mobile workforce	
Workforce Management	OMS-ERP-CIS Integration	RELIABILITY (improves ability to respond to nested outages)	
Equipment Replacement	Aging Infrastructure	RELIABILITY (prevents outages by replacing equipment before it fails)	