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Resources	Distributed Generation Demand Response Wind Plant	HVAC (Res., C&I) DR Electric Storage Thermal Storage	Solar PV (residential & System) Storage & DR	-NaS Batteries +KW-scale storage -Panel & Conc. Solar -Small Wind Systems -Nat Gas fired DG -T-Stat Control -PHEV Charging -loe Bear (Thermal) -Volt/Var Mgmnt
Integration	End-to-end (Customer owned DG, DR provider, Con Edison, NYISO)	Real Time T&D Ops & Planning PJM	HAN, SCADA, System Ops & Planning	System Ops & Planning Simulation Software Power Flow Communications
Diversity	Dense Urban Environment Customer Owned Resources	Smart Grid w/Out use of AMI system Master Controller Concept	Large deployment of Residential PV. Optimization Incl. Volt & Freq control	Modeling of large scale DER. "Deployed" in Real System (South Bend) via Simulator
Business Case	Increase Reliability Reduce Peak Demand	Grid efficiency and reliability at local level	15% peak load reduction at feeder	Reduce Risk of Smart Gri Deployment with Simulation Tools
Furthers Industry	Interoperability of Distributed Energy Resources (DER)	Local delivery system Integration of DER	Technologies & Standards for Renewable Integration	Risk Evaluation of DER Implementation Advances Simulation















