

Energy Management Systems (EMS) Future Focus

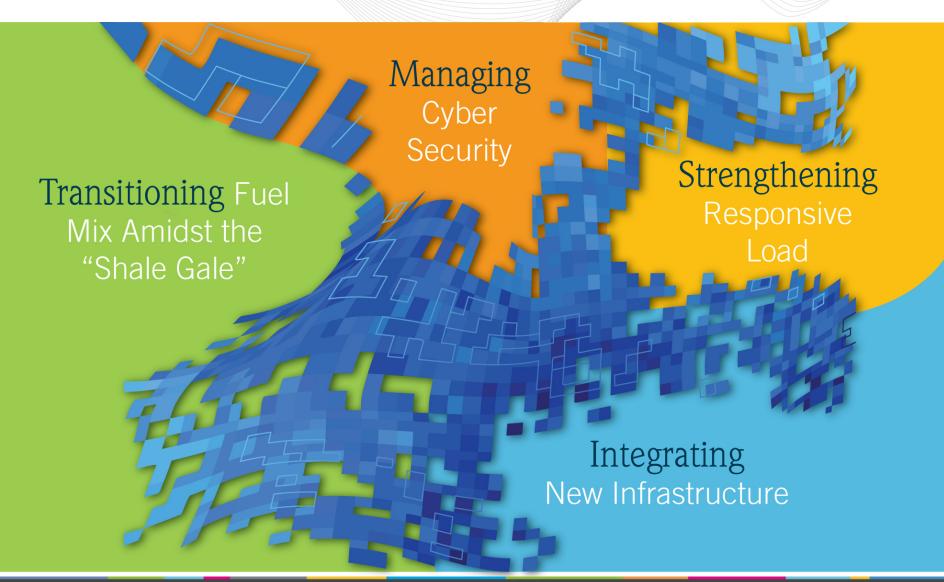
DOE – Electric Advisory Committee

Thomas F. O'Brien Vice President – Information Technology & Services October 15, 2012

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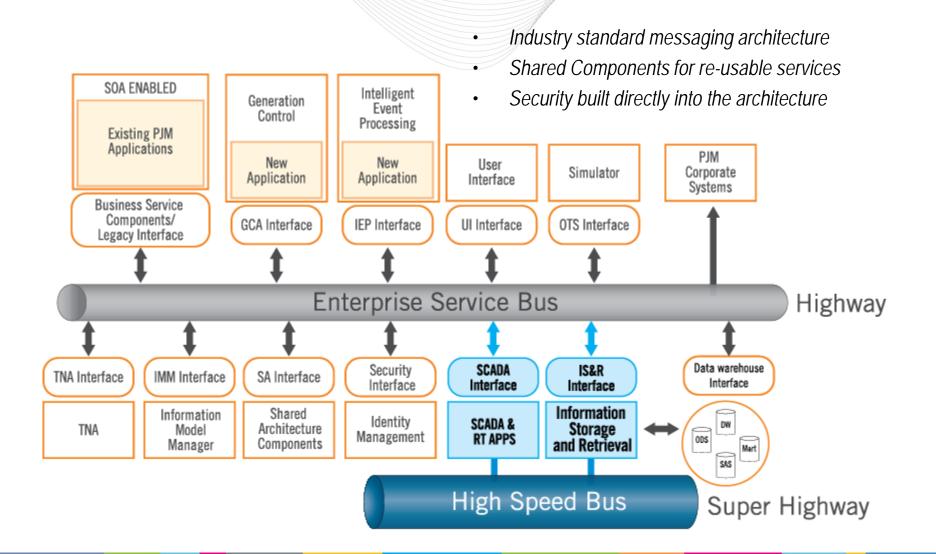


Evolution Must Support Key Business Trends





Extending the Integration Architecture

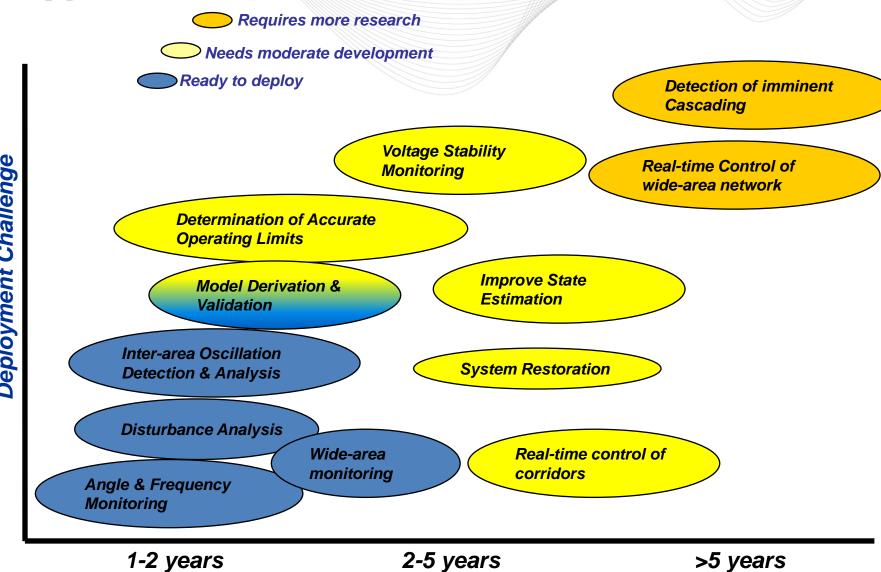




Breaking Down the Data Silos – Big Data Challenges

10° of millions of Control Points **162,189 PJM Control Points Transmission** Generation Home Distribution Distributed **Customer** Work Outage Smart Asset Security **Self-Healing** Optimization **Appliance** Service Management Management Generation Load Self Asset Outage System Energy Other Renewables Management Generation Management Management Control Services **NETWORK NETWORK NETWORK NETWORK** ADAPTER ADAPTER ADAPTER ADAPTER **Smart Grid Big Data Sharing** NETWORK NETWORK NETWORK NETWORK **ADAPTER** ADAPTER ADAPTER ADAPTER Audit Security Energy Energy Reliability Reporting **Futures Options** Markets Compliance Activation Markets System Market Commodity Customer Load **Derivatives Planning** Monitoring Billing Management **Trading** ISO/RTO Regulatory **Energy Services Financial Markets**







EMS of the Future – Keeping Power in Balance

