Session: Intelligent Electric Systems
Smart Power
Future of Energy Sustainability

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Drivers for New Energy Eco-system

Emission Management

Energy Efficiency
- Demand 35%
- Generation 40%
- Industrial 20%
- Grid 5%

Dynamic Exchanges

Distributed Empowerment

Renewable & Storage

Leveraging Intelligence Across Generation, Storage, Demand, and T&D
Distributed Intelligence in Sustainable Energy Eco-System

- Wind generation 5AM-7AM @25MW
- CCGT Generation Plan (energy & AS)
- Weather Forecast
- Solar for Electric Vehicles
- Buy 3MW Green energy for HVAC
- Islanding MicroGrid
- Energy & AS price forecast

Electricity Markets Enable Choices for Energy Stakeholders
Managing Volatility & Uncertainty

Operational Flexibility Critical for Physical and Financial Performances

1000MW coal plant pays $2M to avoid shutting-down
Smart Grid Multi-tier Distributed Decision

- **RTO system**
- **Bulk power wholesale**
- **Aggregators**
- **Individual generators, energy resources & appliances**

Business-driven dynamic coordination across multiple tiers
Energy and Information Technology Integration

Electrical Infrastructure

Generation ➔ T&D ➔ Demand

Information Infrastructure

Secure and Efficient Information for Intelligent Decisions
Ubiquitous Power Cloud™

Smart Power for Sustainable Energy Eco-system
Outlook for Sustainable Energy Eco-System

• Convergence of Drivers & Enablers

• Empowering Intelligent Decisions

• Technical & Business Innovation
Clean Power Today!