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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

2010 Long-Term Reliability Assessment

Progress on 2009 Key Findings

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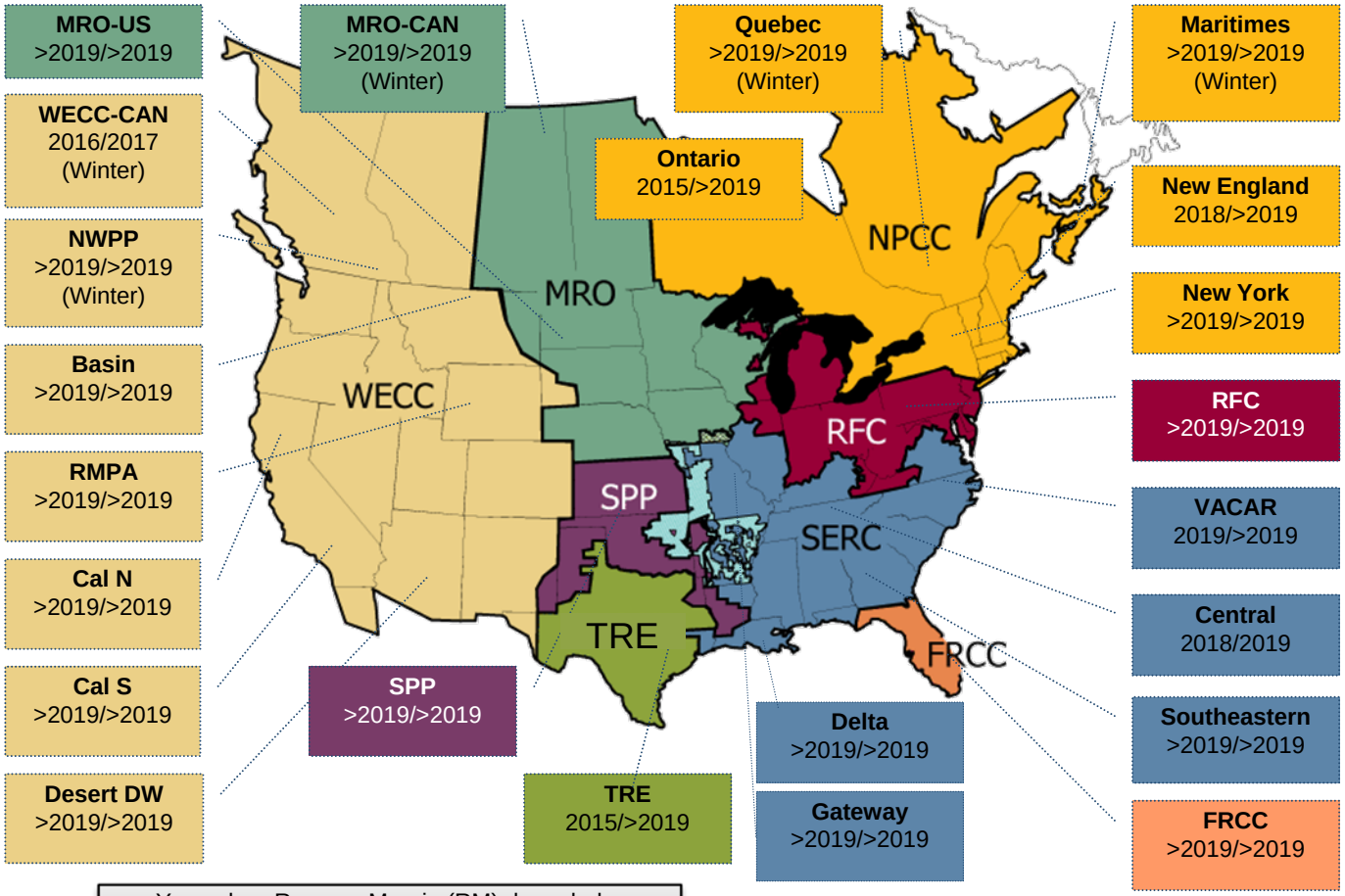
2009 Key Finding	*Economic Recession, Demand-Side Management Lead to Decreased Demand, Higher Reserve Margins*	*Significant New Renewable Resources Come Online*	*Natural Gas Expected to Replace Coal as the Leading Fuel for Peak Capacity by 2011*	*Transmission Siting and Construction Must Accelerate To Meet Plans and Ensure Reliability*	*Industry Faces Transformational Change*
Progress in 2010	Issued 2010 Scenario Reliability Assessment: Potential Reliability Impacts of Swift Economic Recovery	Issued 5 Reports on the Integration of Variable Generation	Several industry studies probe the potential of gas and impacts of fuel-switching	NERC collected data on current transmission project delays and the causes of these delays	Issued the Special Reliability Assessment: Reliability Impacts of Climate Change Initiatives
2010 Status	• Recession effects continue to impact demand forecast. • 2010 Key Highlight	• Integration of Variable Generation Task Force continues to develop recommendations • 2010 Key Highlight	• Trend continues in 2010 • 2010 Key Highlight	• Progress shown in meeting plans over that last five years. • Transmission development should continue as planned.	• Annual risk assessment • Smart Grid Task Force continues to develop recommendations

Highlights

- The economic recession and continued advancement of demand-side management leads to decreased demand projections and higher overall reserve margins.
- A continued change in the generation fuel mix is expected during the next ten years which includes significant increases in new gas-fired, wind, solar, and nuclear generation.
- Vital bulk power transmission development begins to take shape.
- Cross-industry communication and coordination is key to successful planning and operations.

Highlight

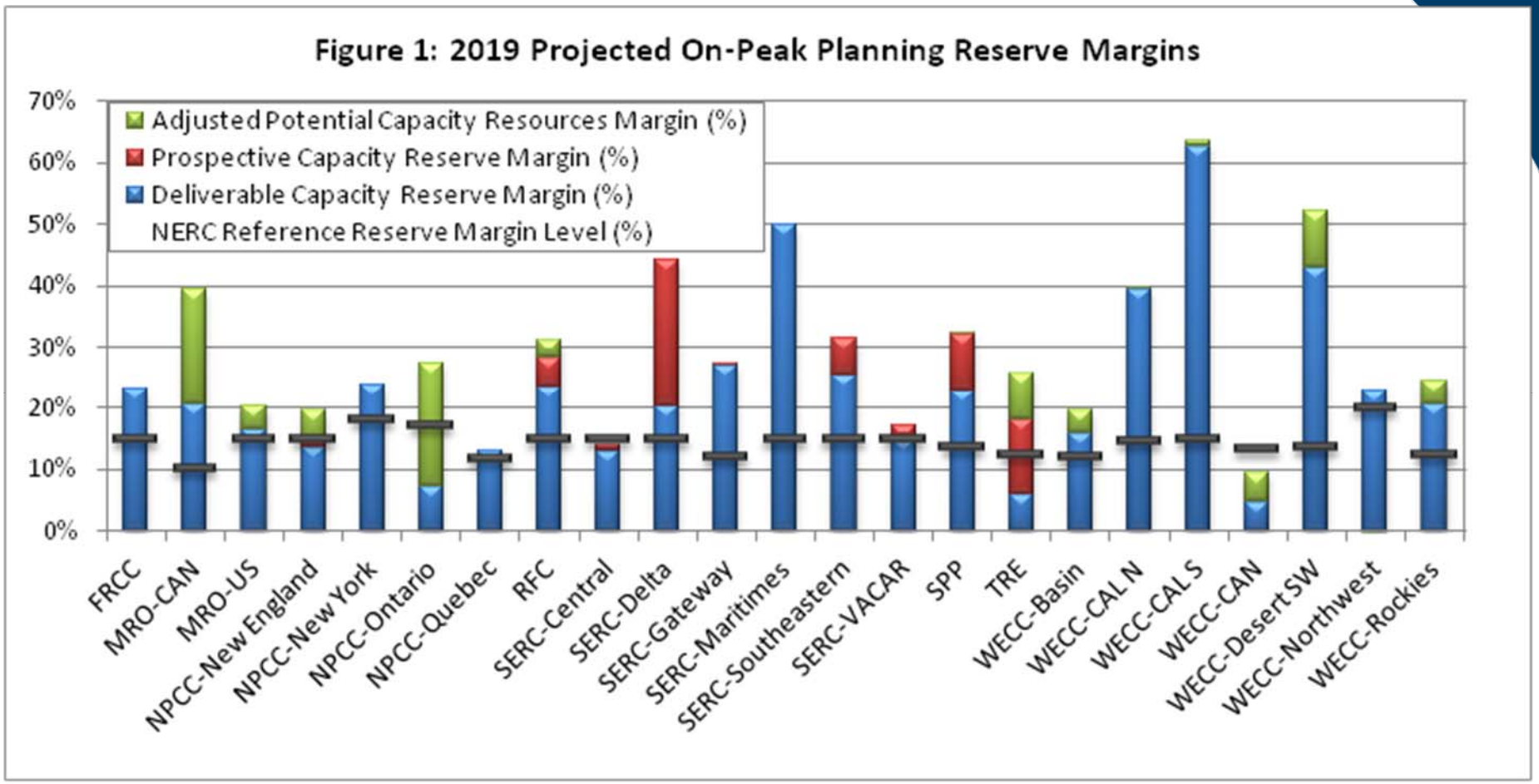
Higher Reserve Margins



- Year when Reserve Margin (RM) drops below NERC Reference Margin Level:
- Anticipated RM / Adjusted Potential RM

Highlight

Higher Reserve Margins



Highlight

Higher Reserve Margins

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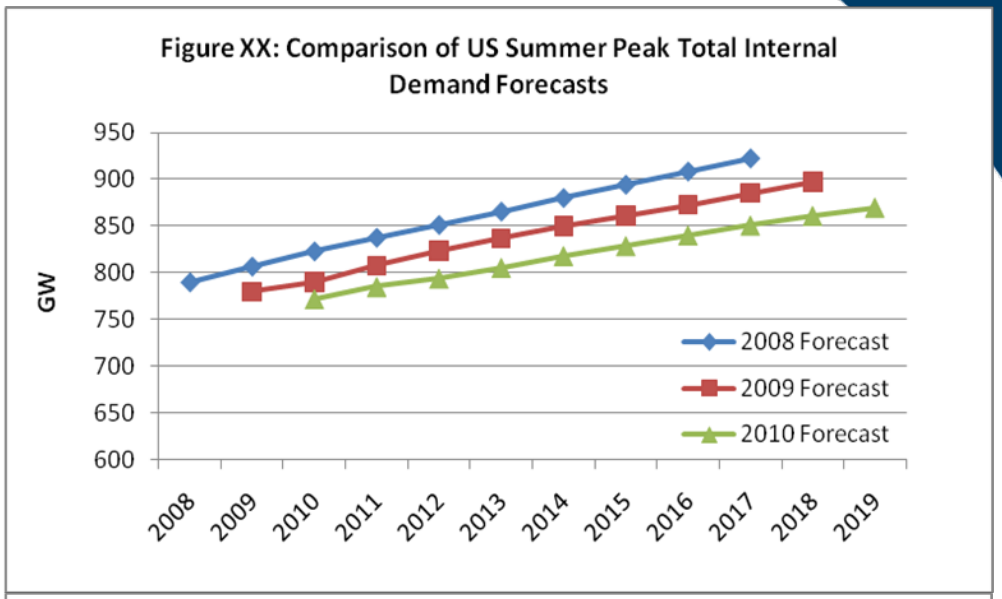
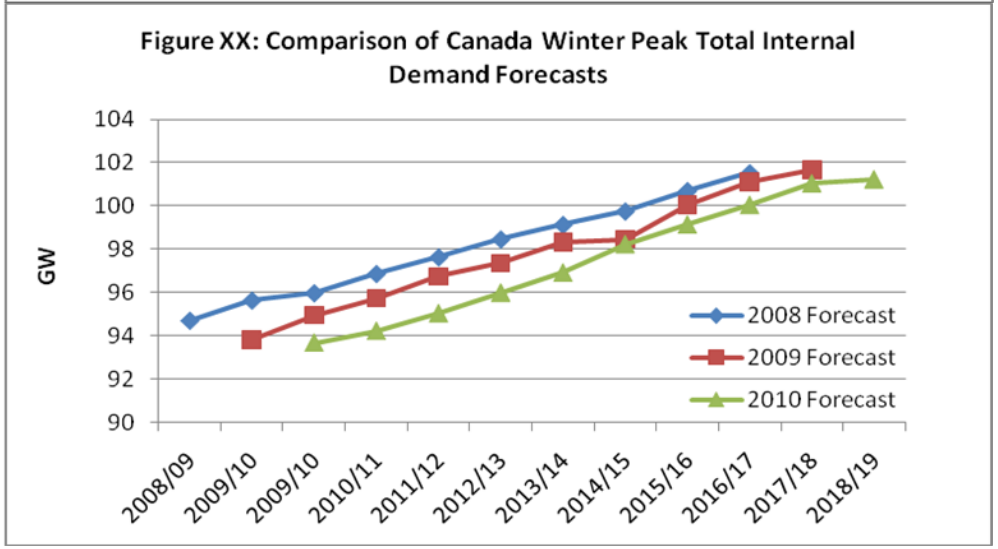
United States

- 2010 peak demand down 4.1% from last year's projections; 7.8 % from 2008 projections
- Lower growth rate when compared to 2008 and 2009



Canada

- 2010 peak demand down 0.7% from last year's projections; 1.0 % from 2008 projections
- Higher growth rate when compared to 2008 and 2009

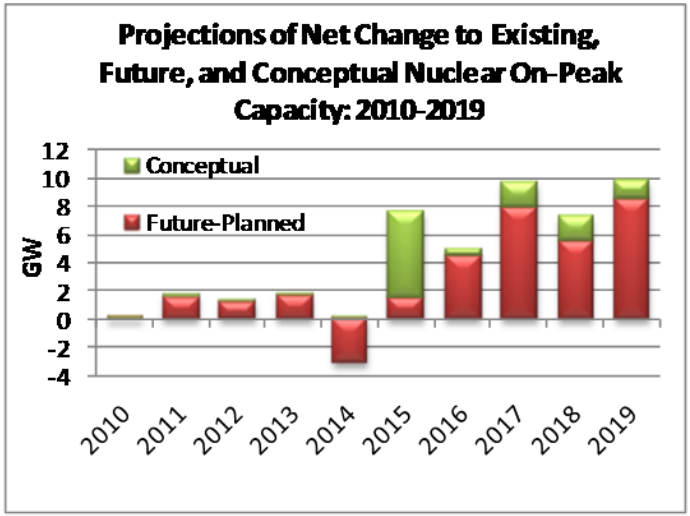


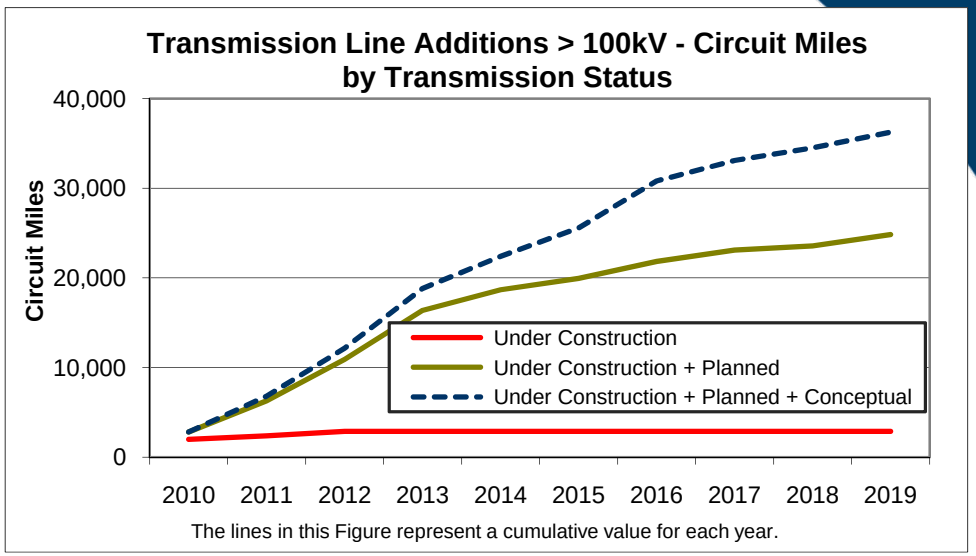
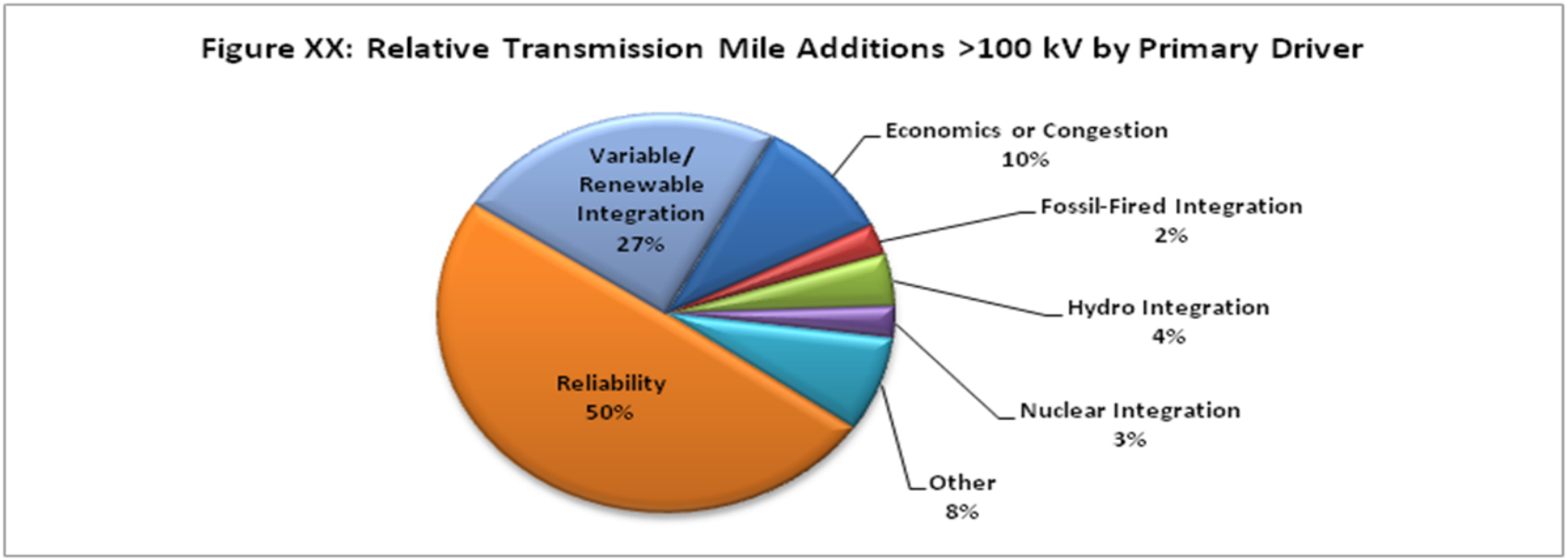
Highlight

Change in Fuel-Mix

- Very little coal projected to come online (less than 4 GW)
- 10 GW of new nuclear capacity projected by 2019
- 34 GW of new gas-fired generation Planned; 13 GW Conceptual
- 20 GW of new wind capacity expected on-peak (42 GW nameplate)
- 13 GW of new solar capacity (California)

Fuel	2010	2019 Projected
Coal	31%	26%
Gas	29%	30%
Nuclear	11%	12%
Hydro	13%	9%
Renewables	1%	5%
Dual Fuel	11%	13%
Other	4%	5%
Total	100%	100%



Highlight
Vital Transmission Development

- 24,000 miles of Planned Transmission
- An additional 12,000 miles of Conceptual Transmission
- 50% transmission projected to maintain reliability; 27% for renewable/variable generation