

Technical Conference on Environmental Regulations and Electric Reliability, Wholesale Electricity Markets, and Energy Infrastructure

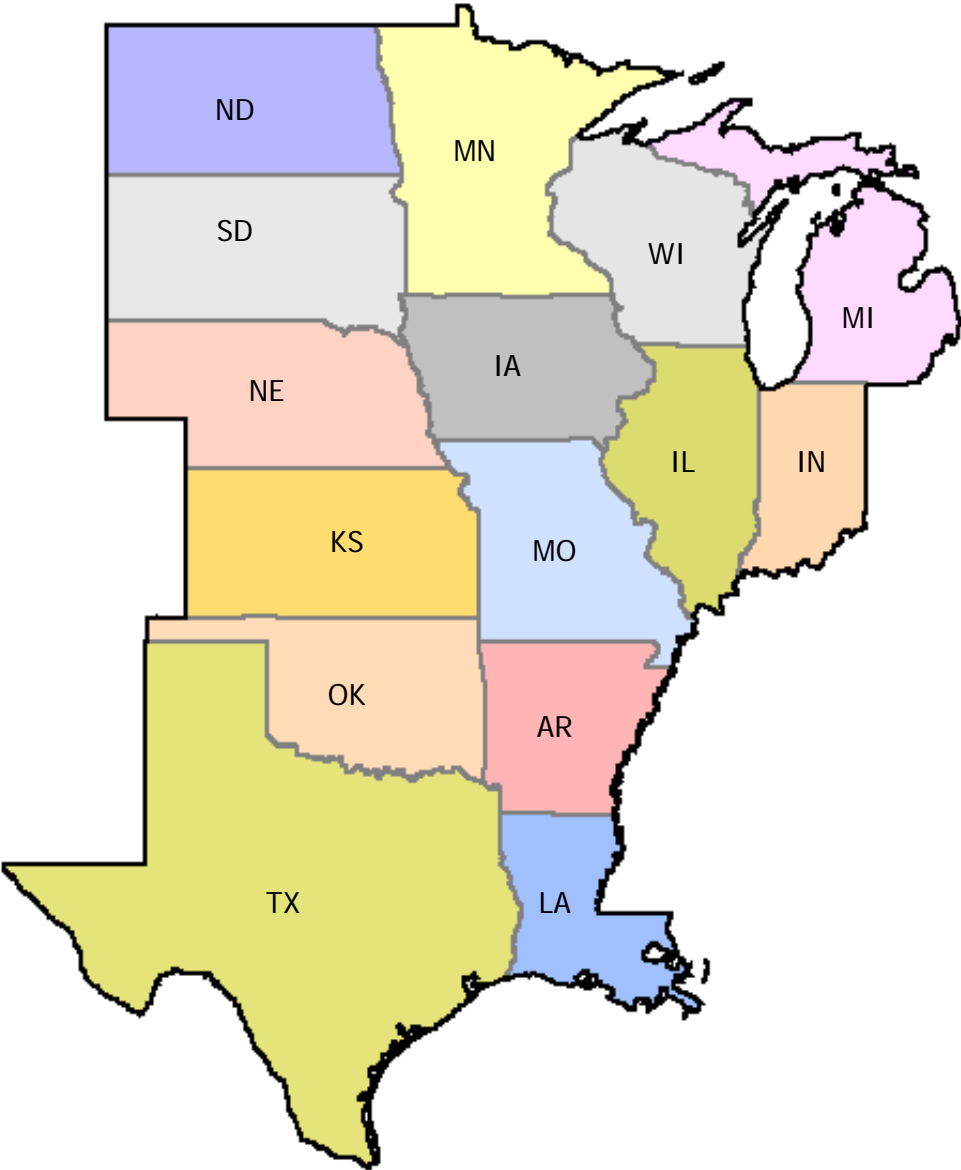
Central Region



March 31, 2015

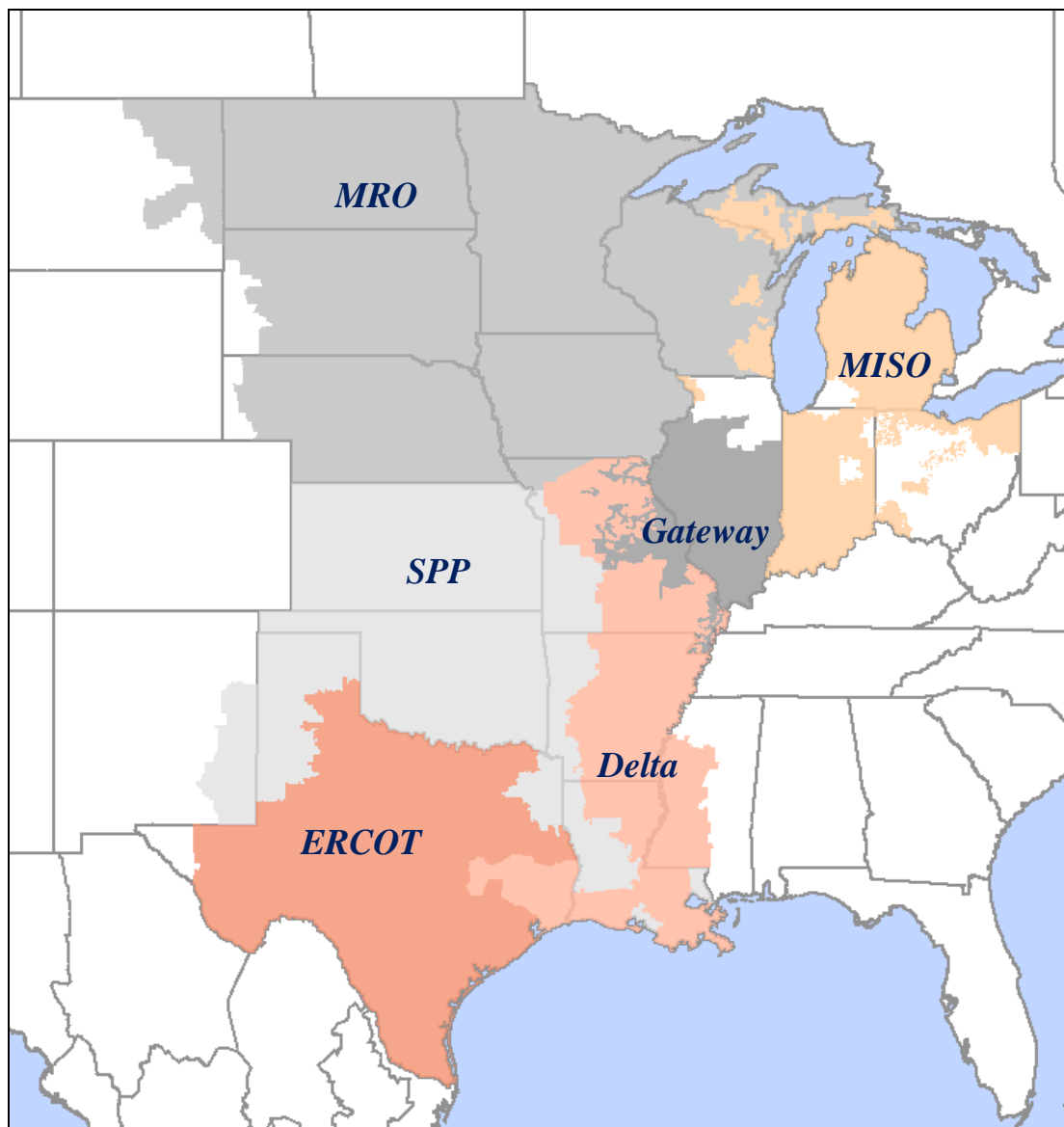
St. Louis, Missouri

Central Region States

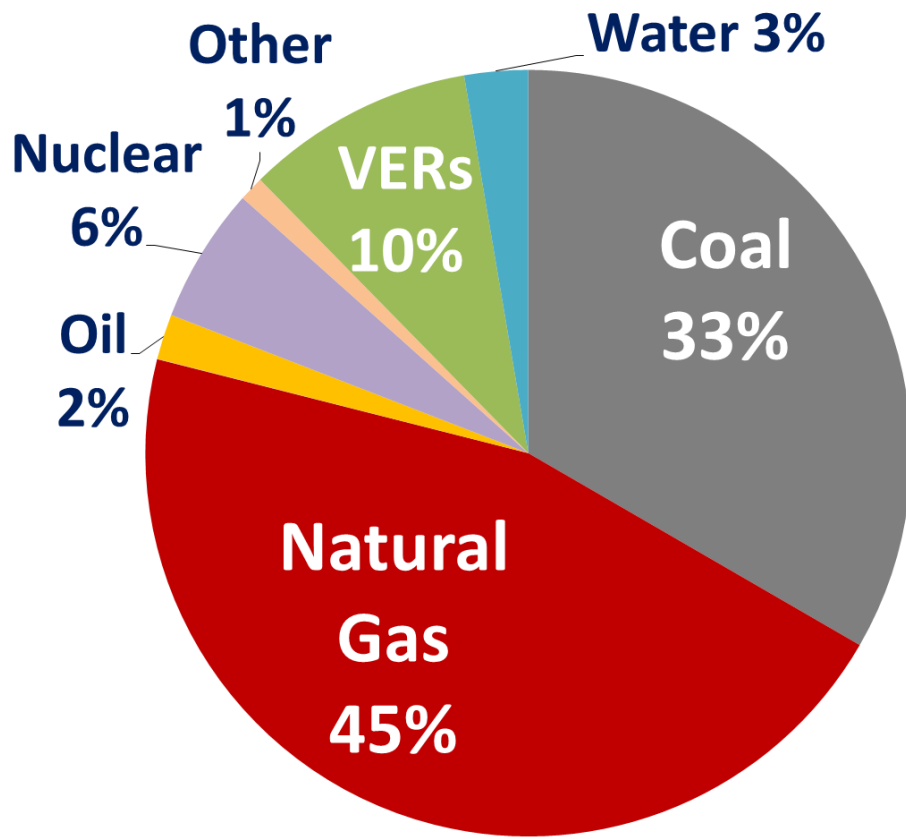


ELECTRIC INFRASTRUCTURE

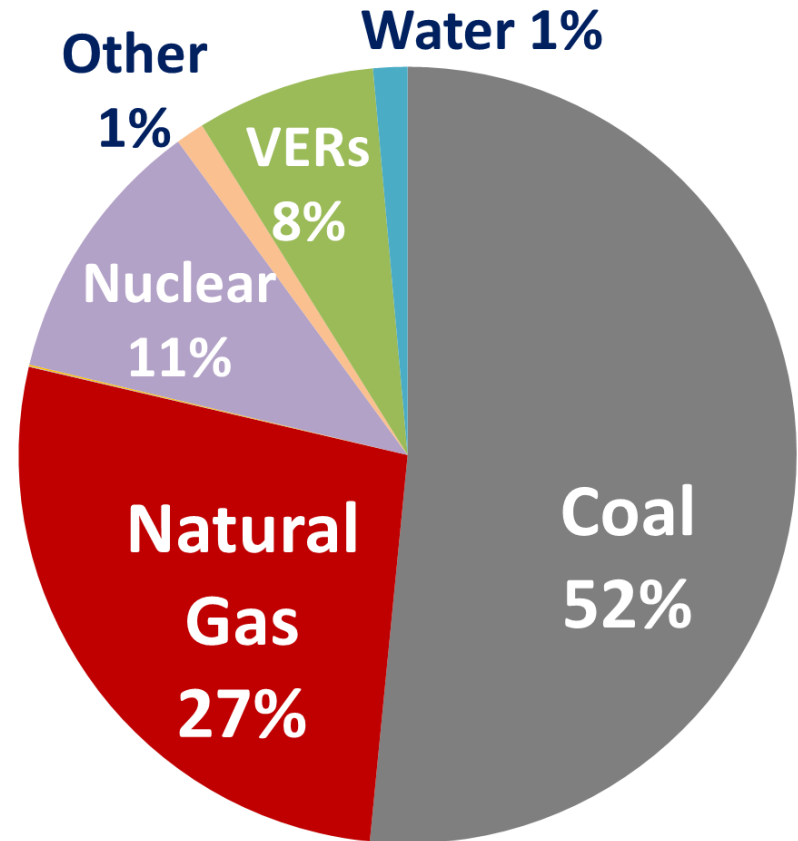
NERC Sub-Regions



Installed Capacity and Generation



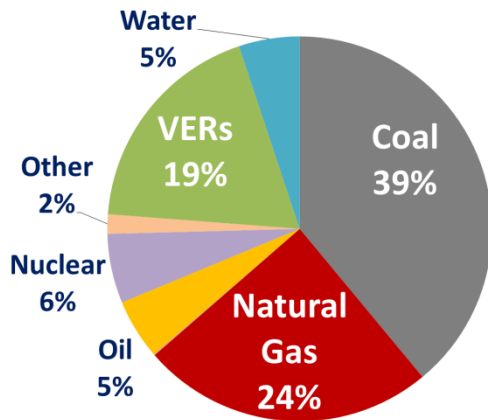
Current Installed Capacity
387,794 MW



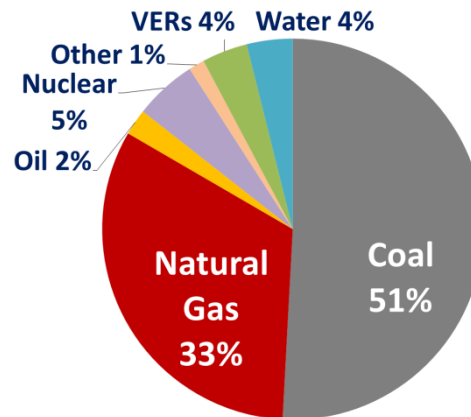
2013 Generation
1,329,459 GWh

Source: Data derived from Velocity Suite, ABB Inc., March 2015.

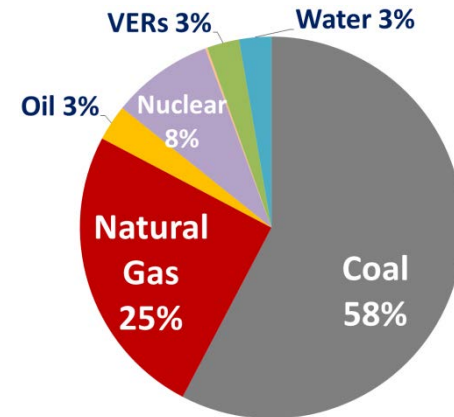
Installed Capacity by Sub-Regions



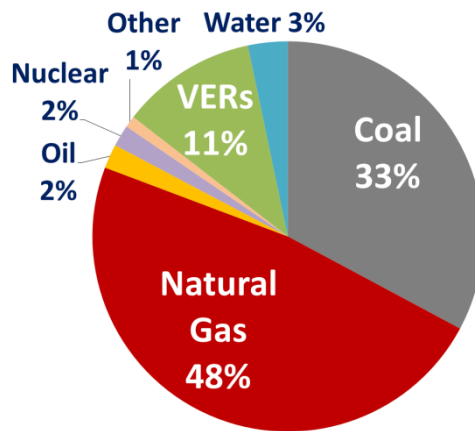
MRO 67,563 MW



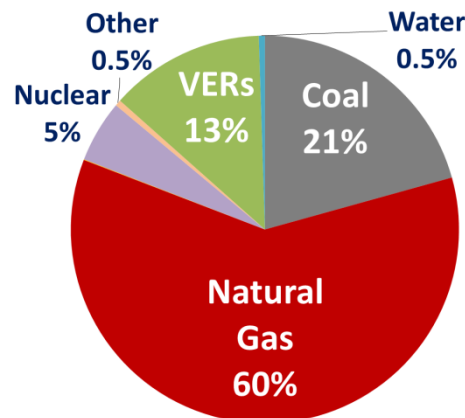
MISO 63,172 MW



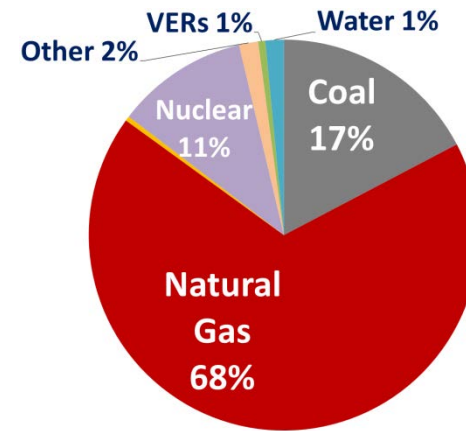
Gateway 28,886 MW



SPP 72,538 MW



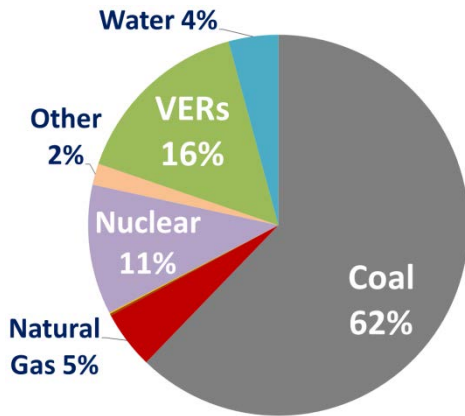
ERCOT 102,088 MW



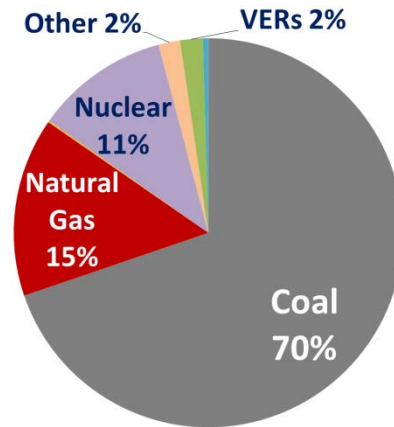
Delta 53,548 MW

Source: Data derived from Velocity Suite, ABB Inc., February 2015.

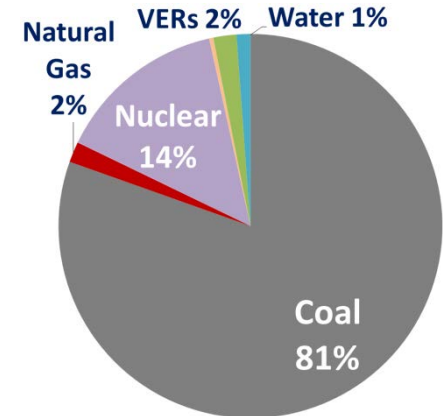
2013 Electricity Generation by Sub-Regions



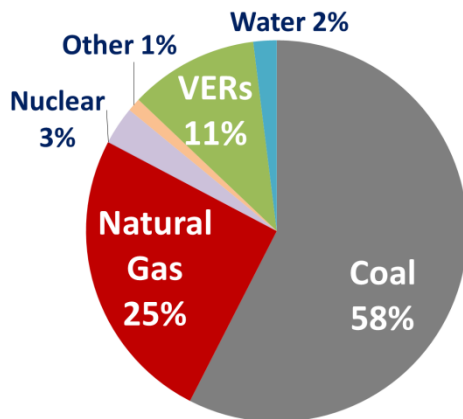
MRO 223,239 GWh



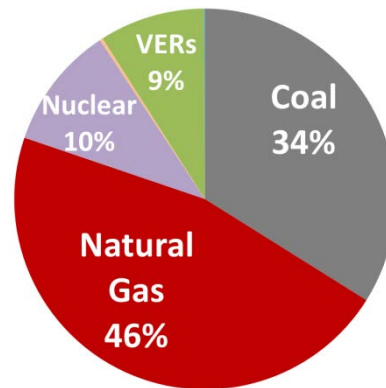
MISO 202,893 GWh



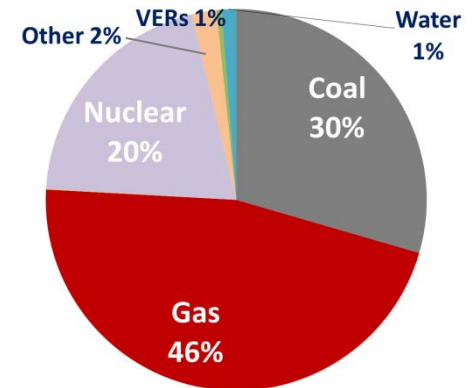
Gateway 115,736 GWh



SPP 226,168 GWh



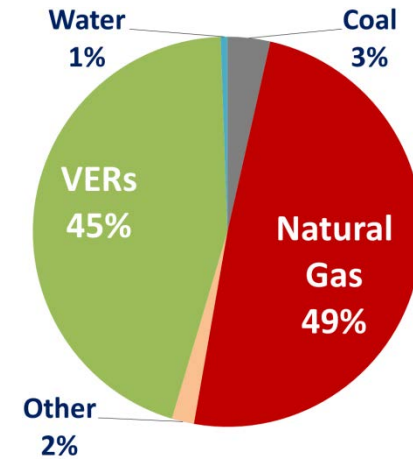
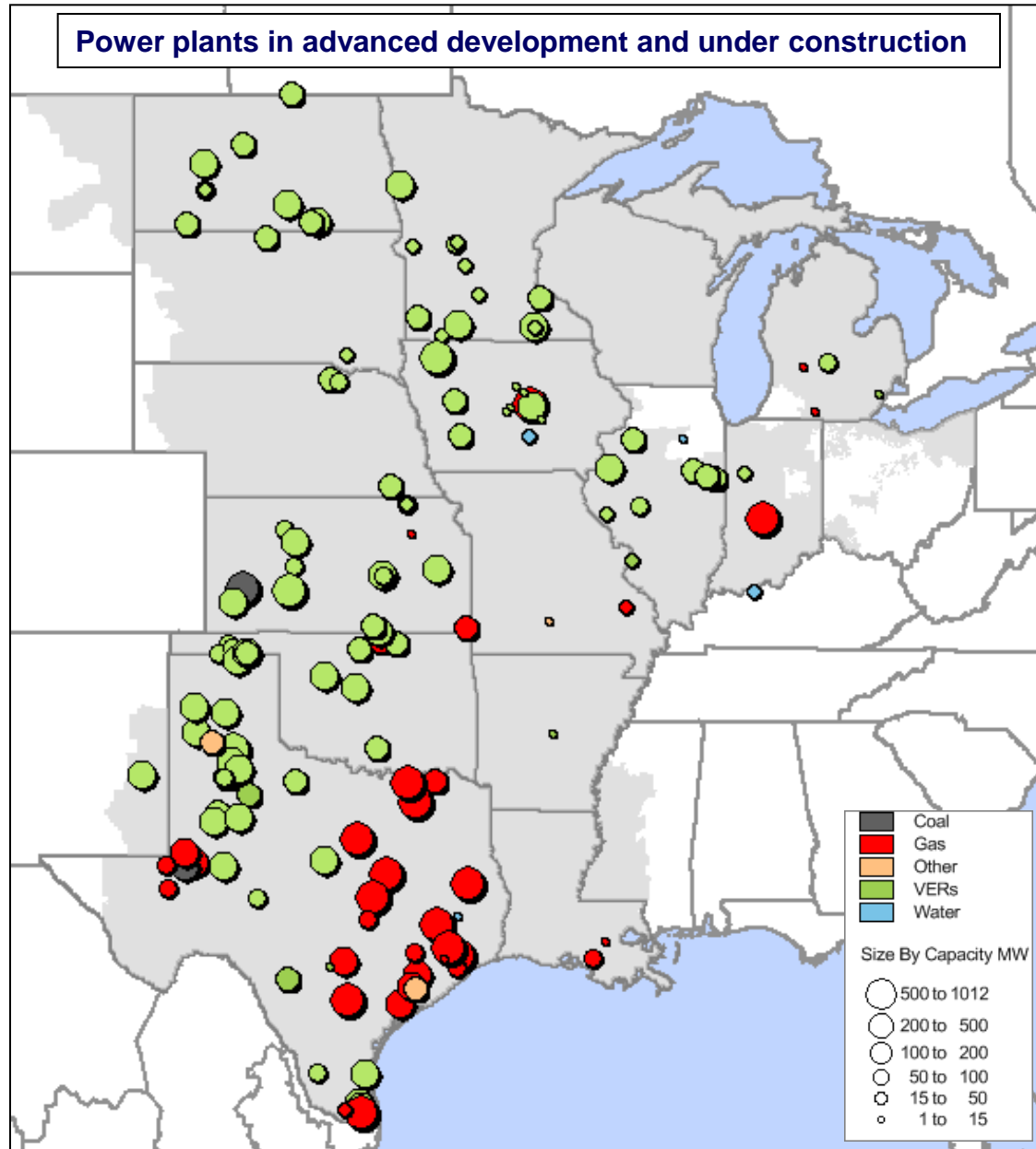
ERCOT 365,759 GWh



Delta 195,665 GWh

Source: Data derived from Velocity Suite, ABB Inc., March 2015.

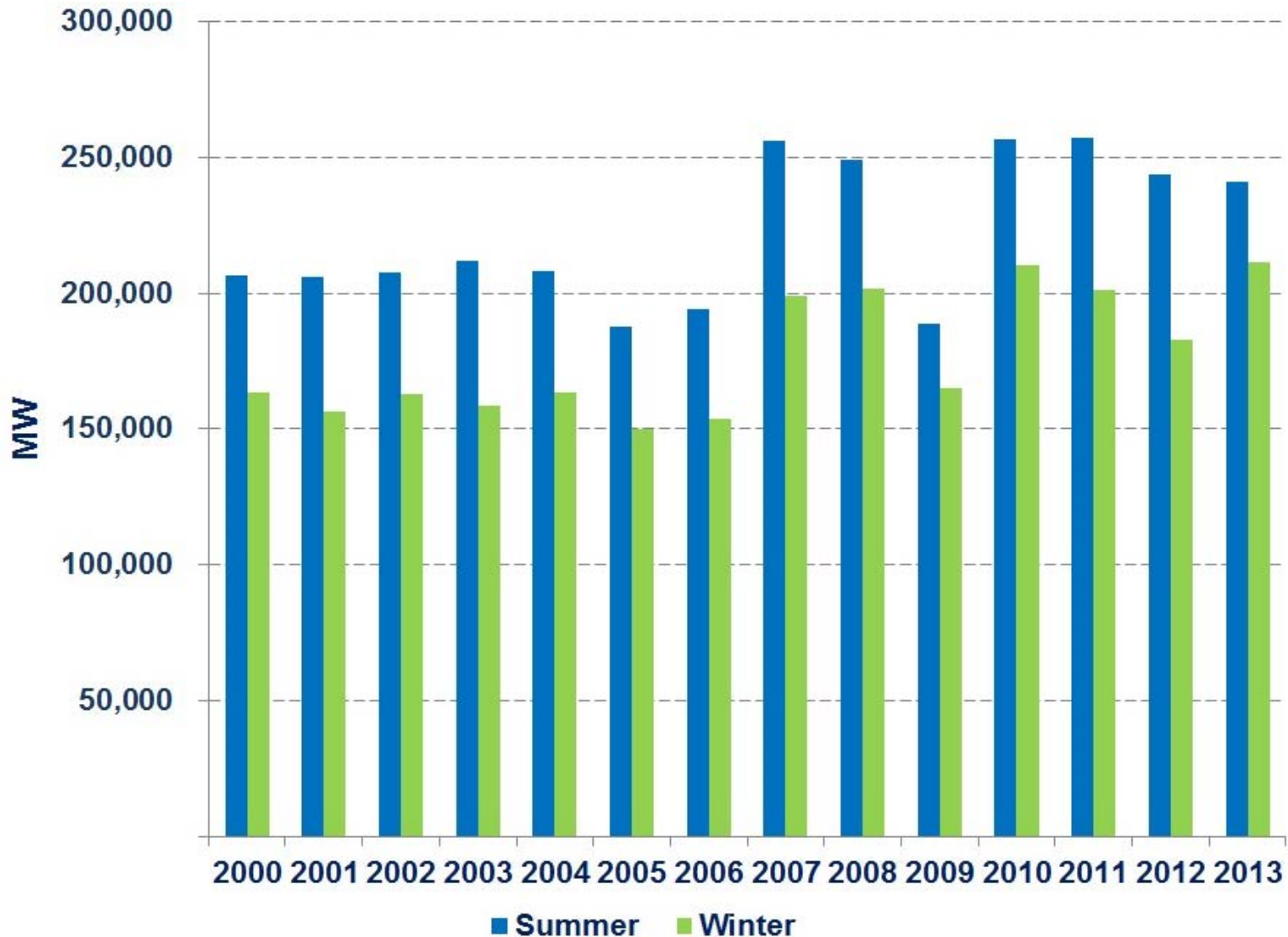
Projected 32,000 MW Capacity Additions by 2025



•Another 66,143 MW are in early development stage.

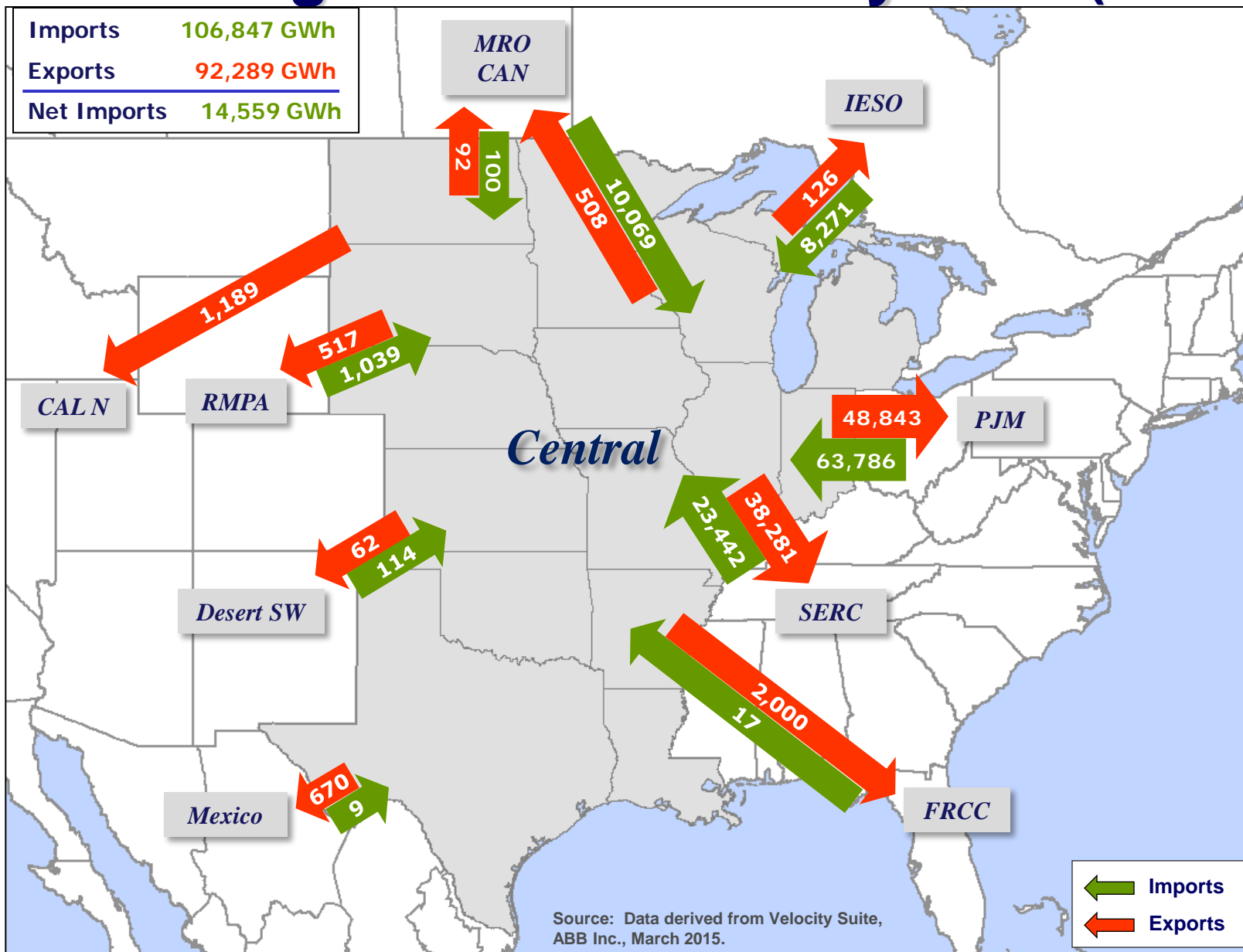
Source: Data derived from Velocity Suite, ABB Inc., February 2015.

Peak Demand

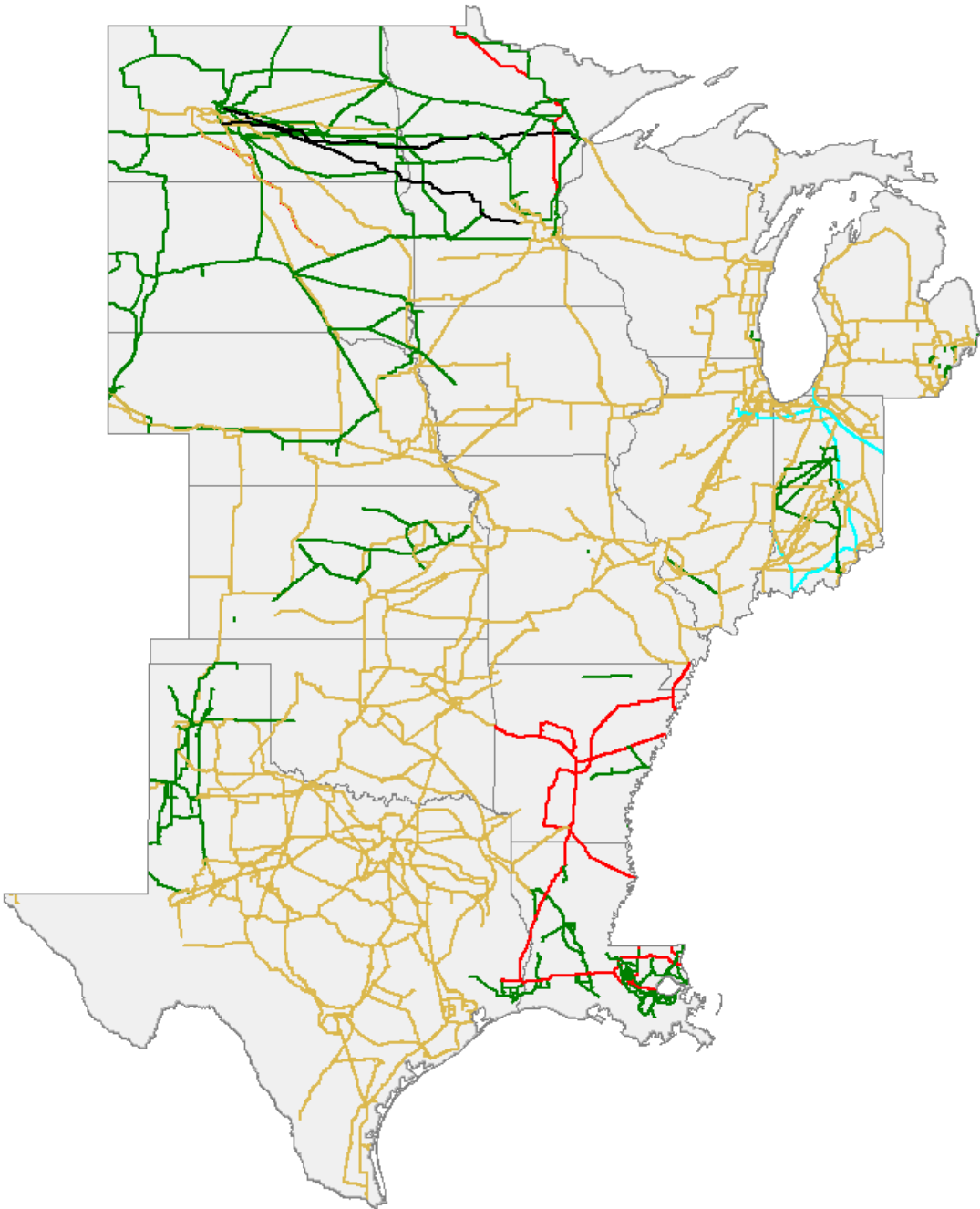


Source: The North American Electric Reliability Corporation's (NERC's) 2014 Electric Supply and Demand Database.

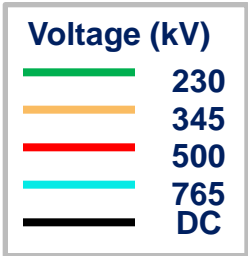
Net inter-regional deliverability 2013 (in GWh)



Existing Transmission

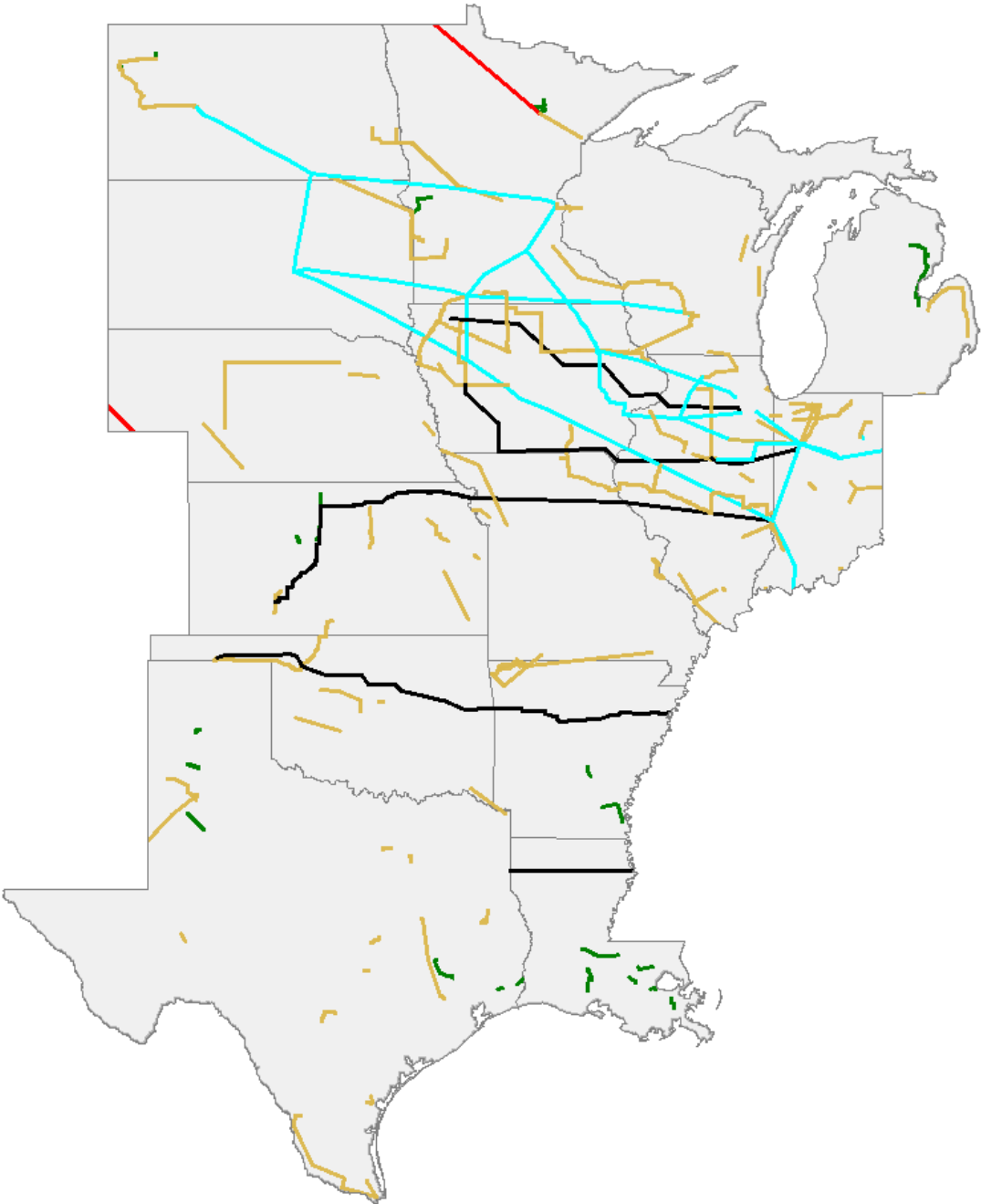


Voltage (kV)	Line Length (Miles)
230	13,012
345	31,680
500	2,432
765	782
DC	872
Total	48,778

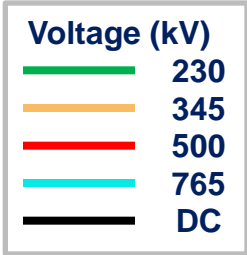


Source: Data Derived from 2014 NERC Electric Supply and Demand Database; Velocity Suite, ABB Inc., March 2015 and Staff Database.

Projected Transmission through 2030



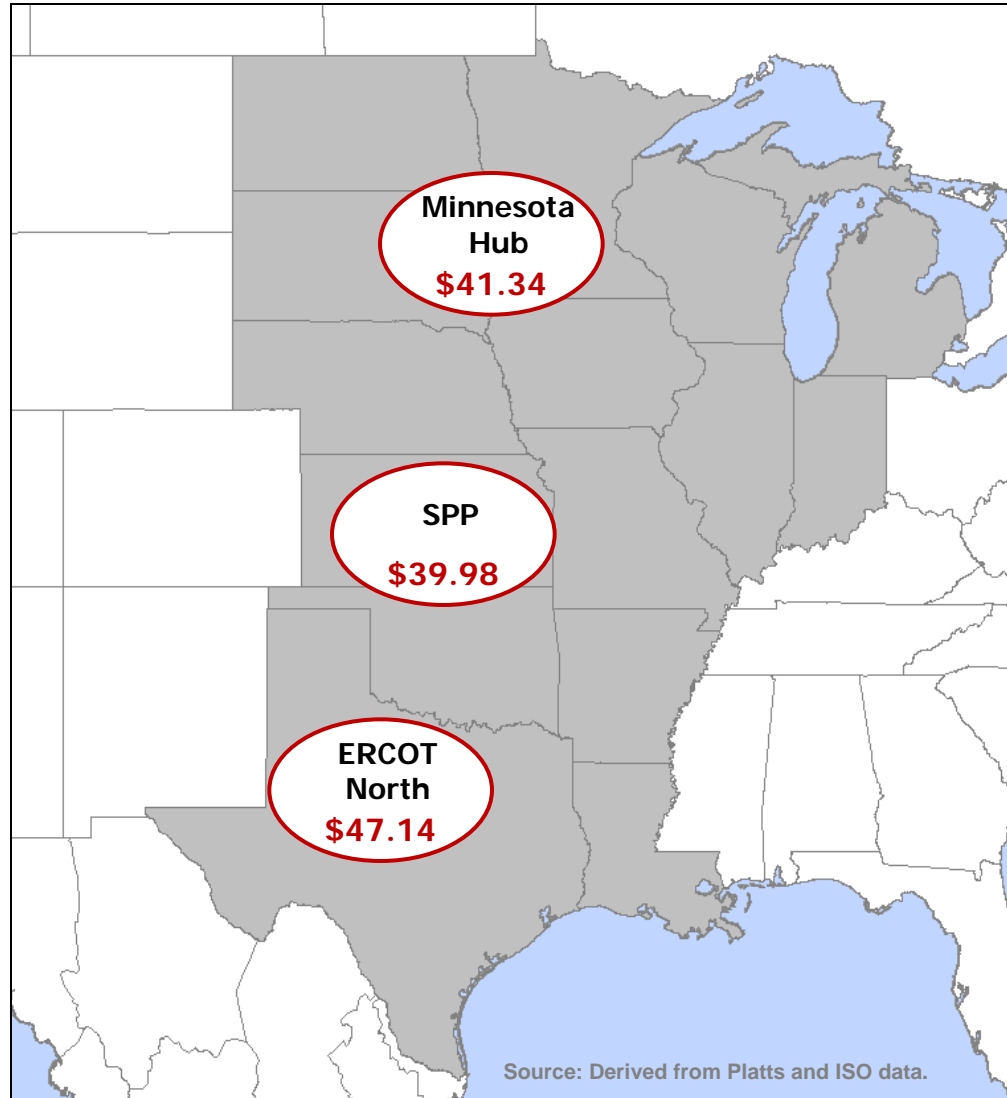
Voltage (kV)	Line Length (Miles)	Investment Cost (Millions \$)
230	1,536	1,488
345	7,545	14,427
500	599	2,342
765	3,254	13,453
DC	2,818	11,351
Total	15,752	43,061



Sources: Data Derived from 2014 NERC Electric Supply and Demand Database; Velocity Suite, ABB Inc., March 2015 and Staff Database.

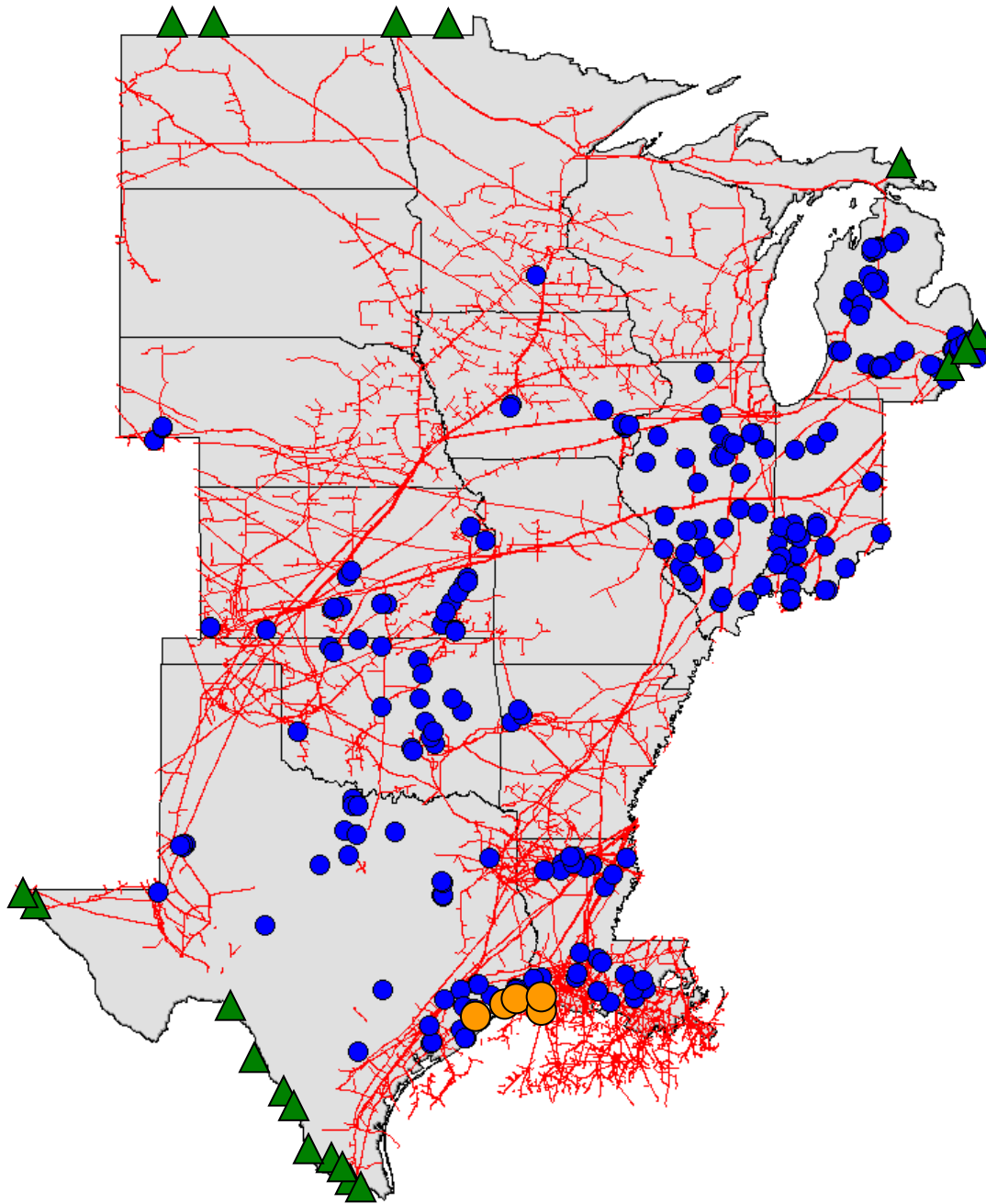
Electricity Prices 2014 (\$/MWh)

All prices are average on-peak day-ahead market prices. SPP prices are an average of North and South zone prices since March 1, 2014.



GAS INFRASTRUCTURE

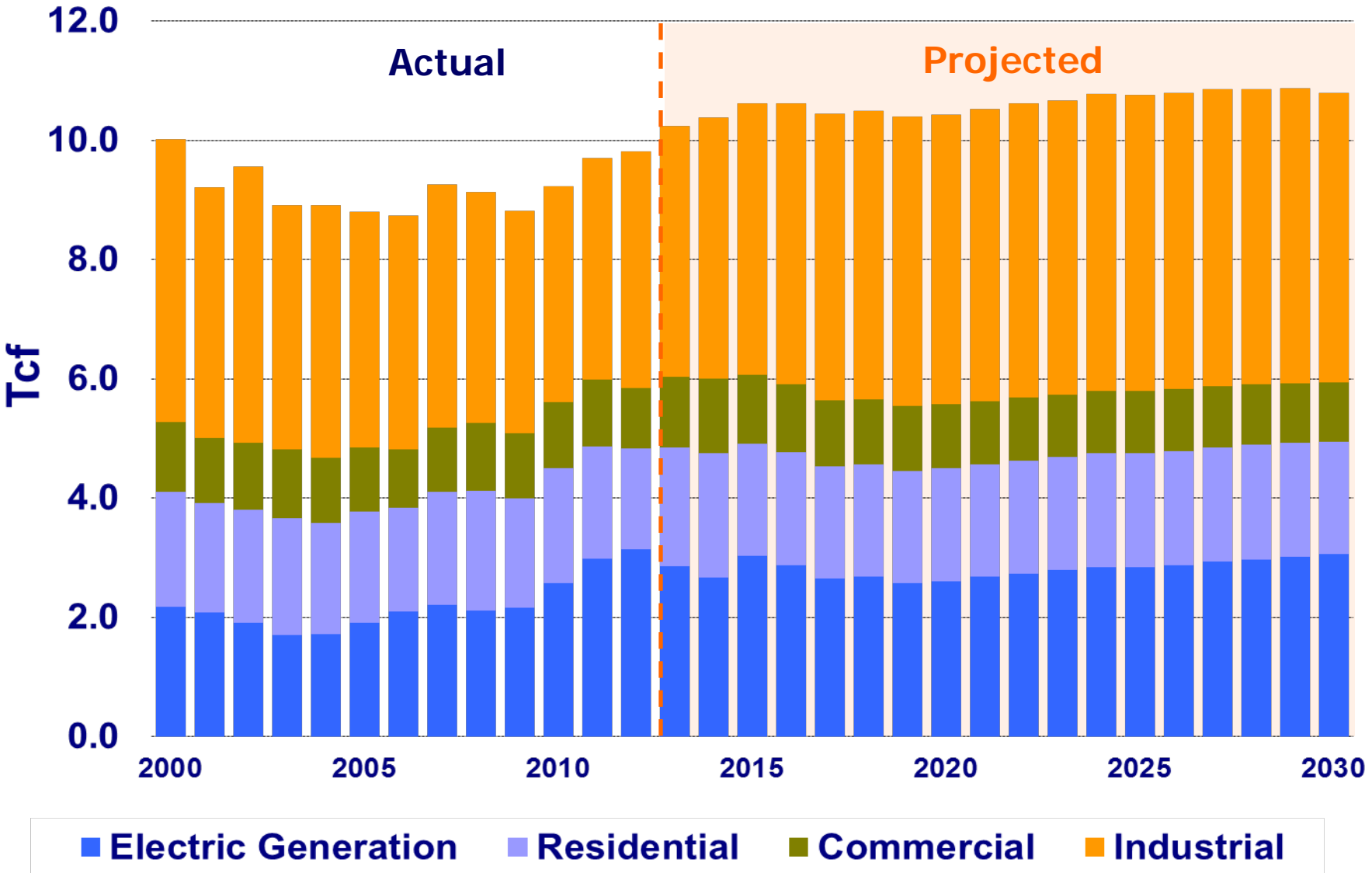
Natural Gas Infrastructure



- Interstate Natural Gas Pipelines
- Natural Gas Storage Facilities
- ▲ Natural Gas Import/Export Points with Canada and Mexico
- LNG Terminals

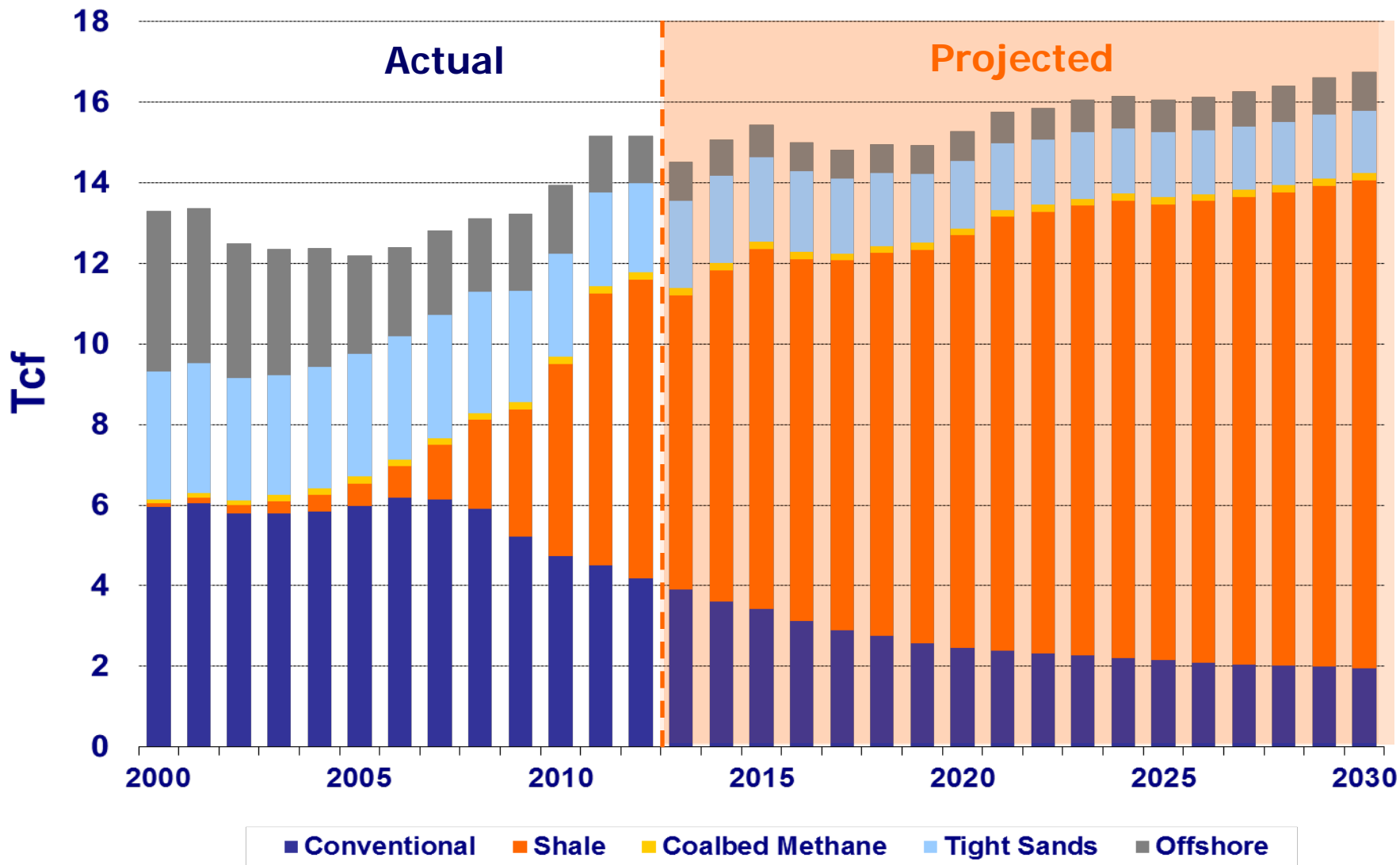
Source: Based on data from Velocity Suite , ABB Inc., February 2015; ICF International January 2015 Data Base; and FERC's Jurisdictional Storage Fields in the U.S.

Central Natural Gas Consumption



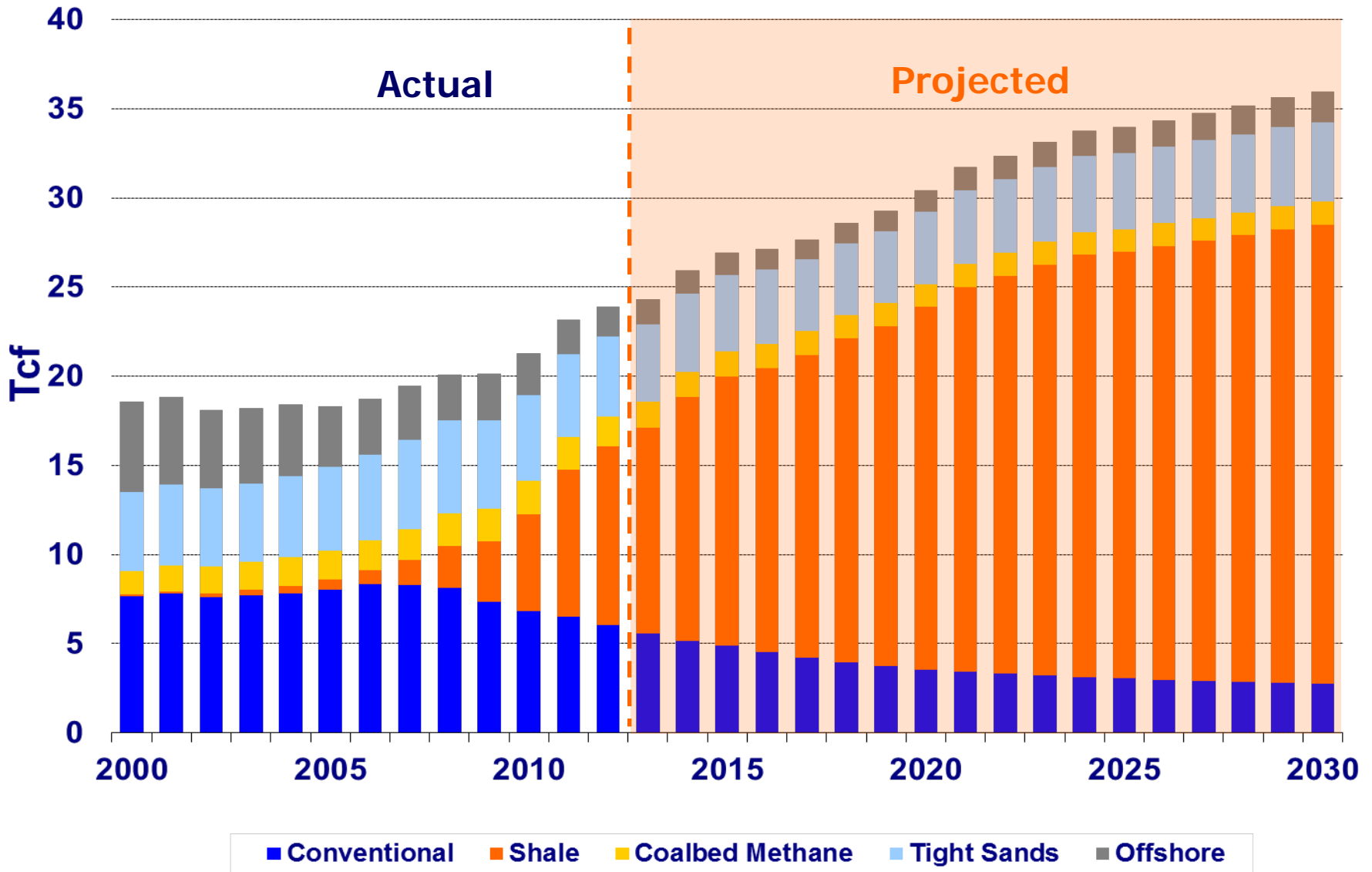
Source: ICF International January 2015 Data Base and Compass Report

Central Natural Gas Production by Type



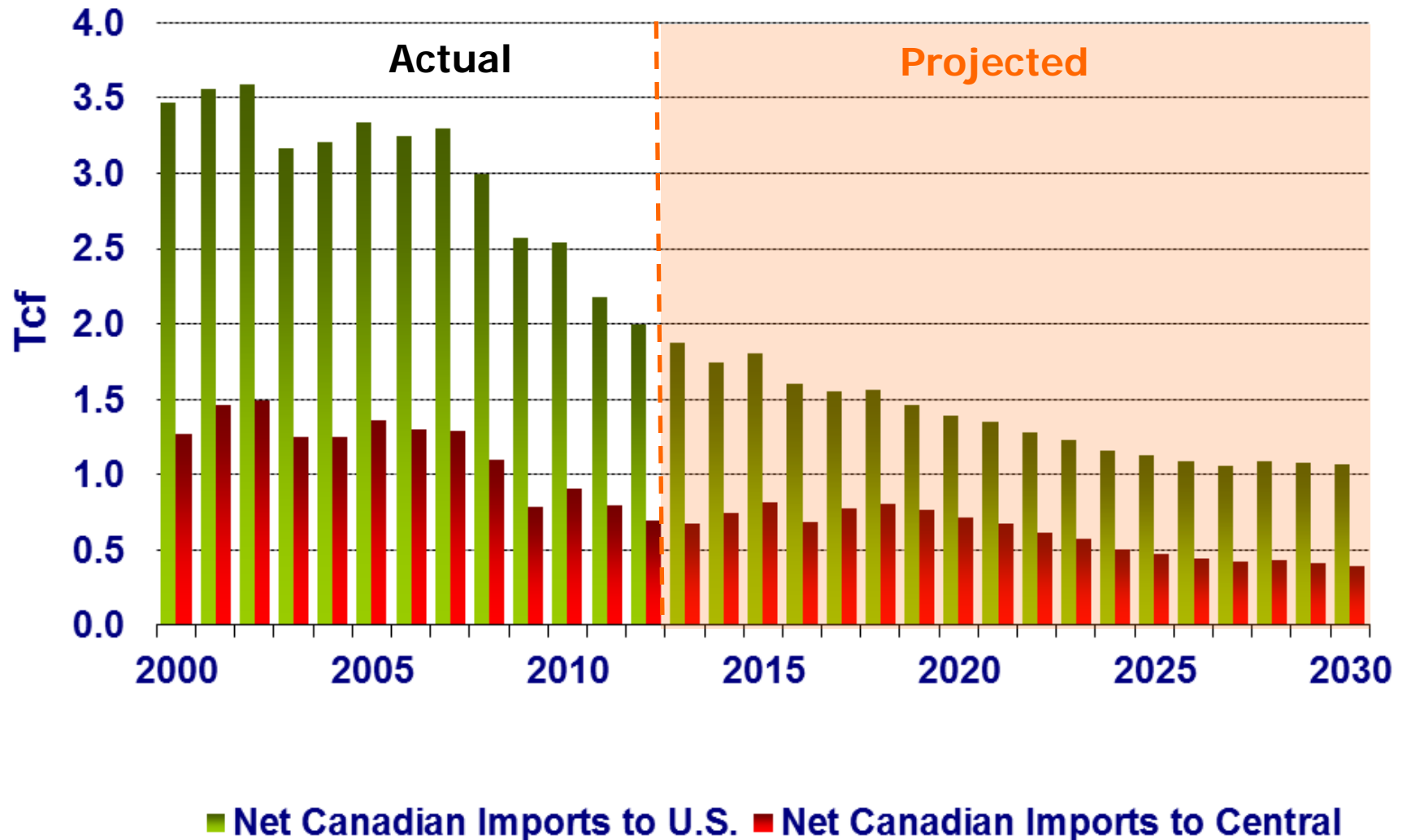
Source: ICF International January 2015 Data Base and Compass Report

U.S Natural Gas Production by Type



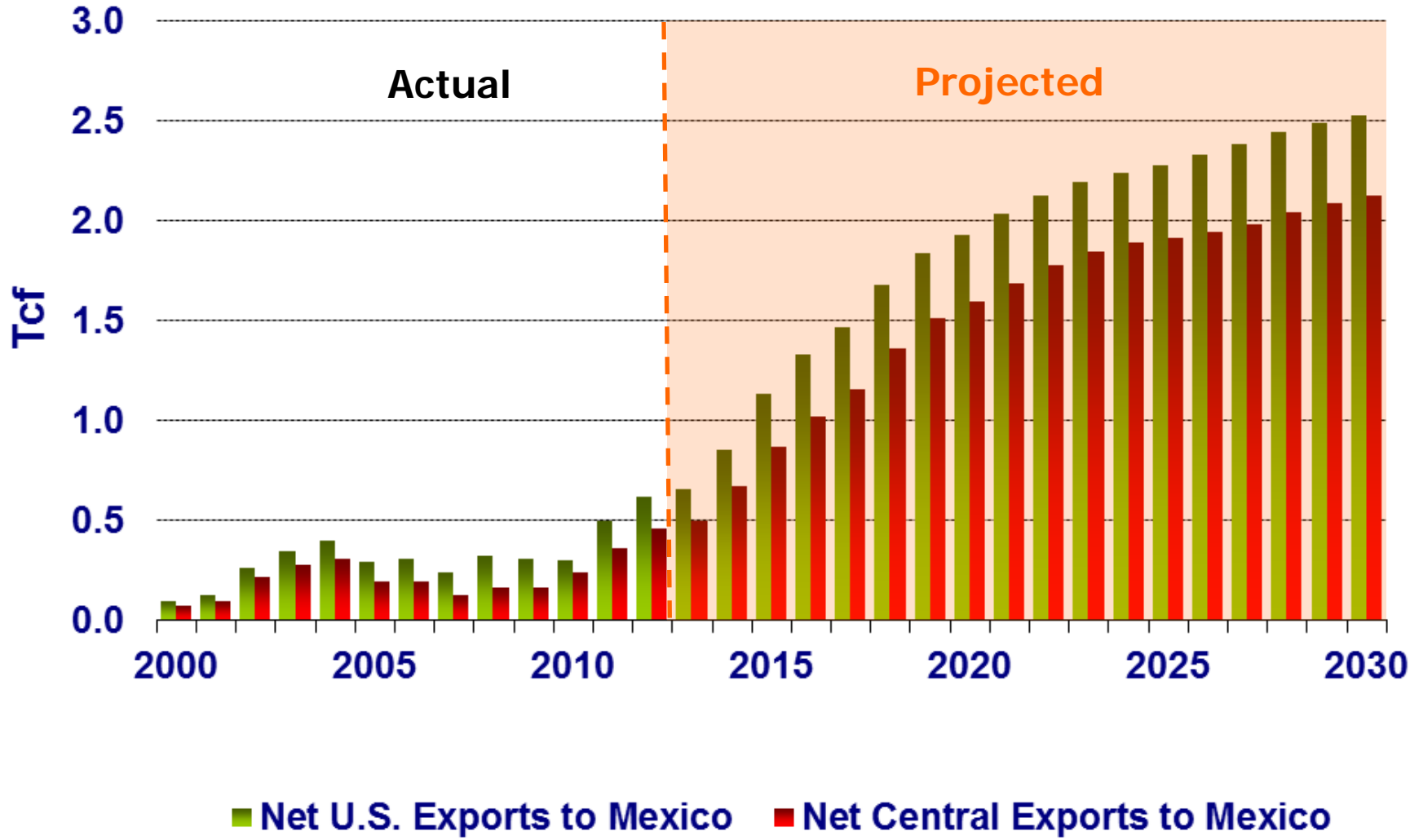
Source: ICF International January 2015 Data Base and Compass Report

Actual and Projected Net Canadian Imports to U.S.



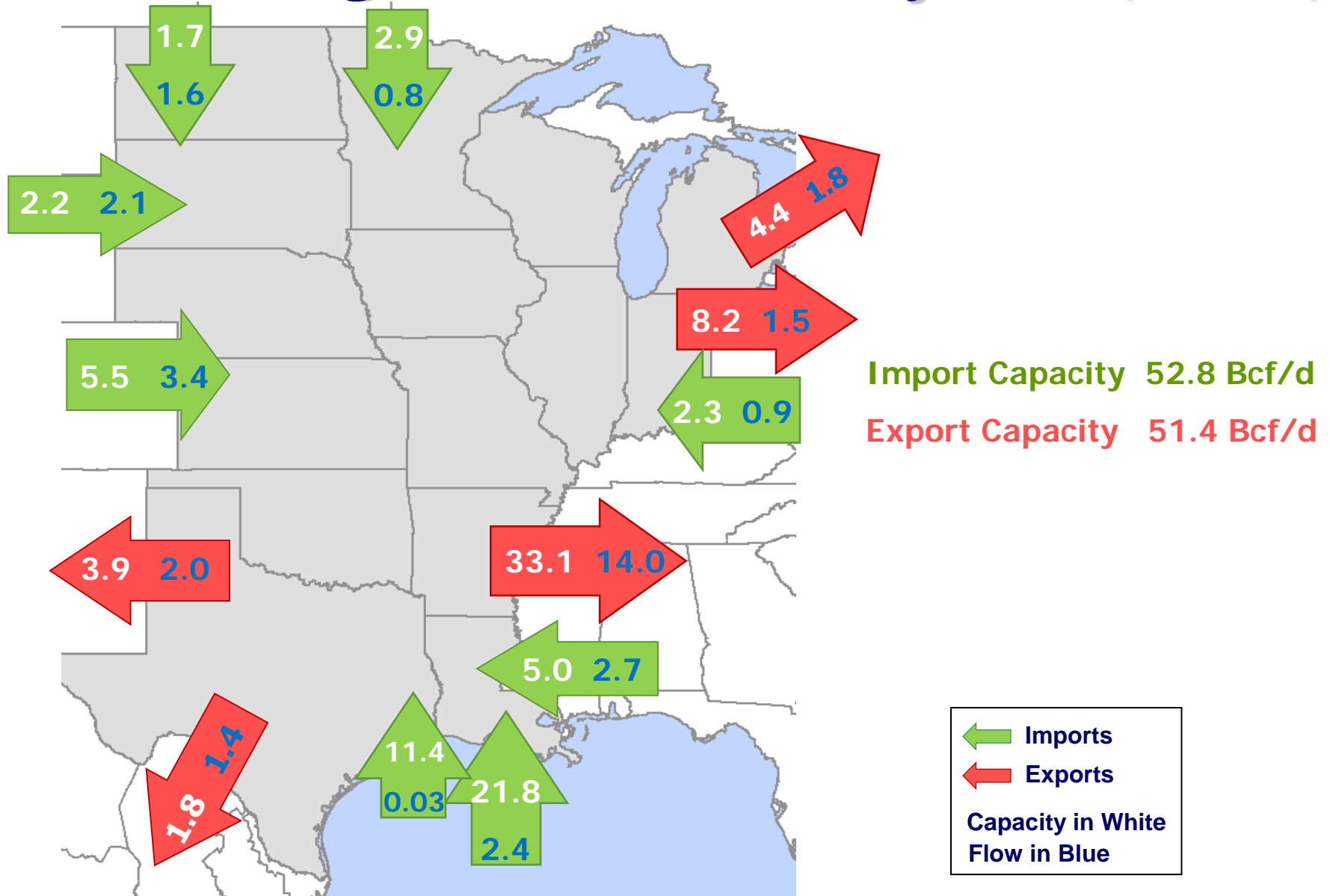
Source: ICF International January 2015 Data Base and Compass Report; and EIA Natural Gas Annuals and Spreadsheets

Actual and Projected Net U.S Exports to Mexico



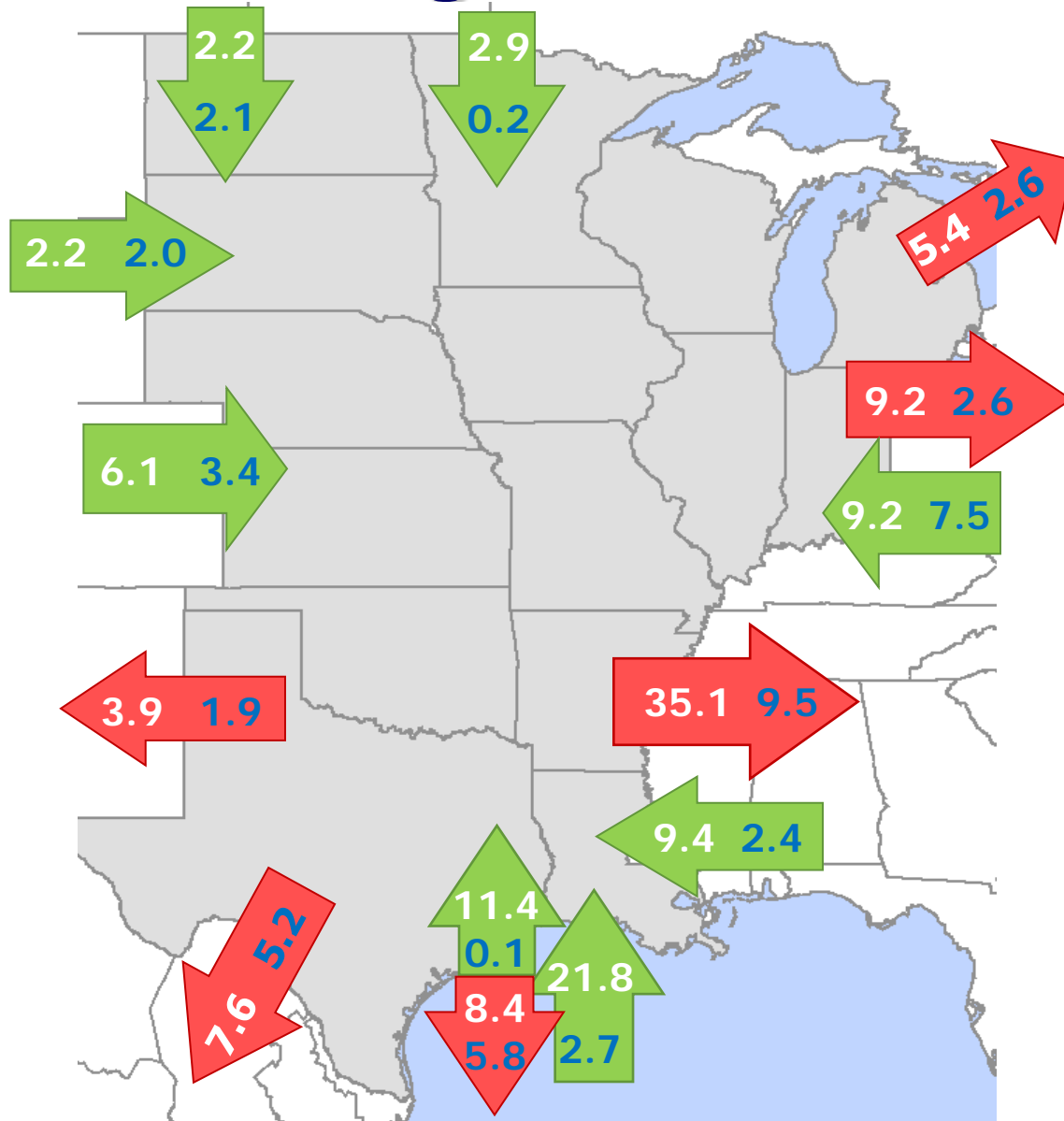
Source: ICF International January 2015 Data Base and Compass Report; and EIA Natural Gas Annuals and Spreadsheets

Net Interregional Deliverability 2013 (in Bcf/d)



Source: ICF International January 2015 Data Base and Compass Report, and EIA's Import/Export Spreadsheets

Net Interregional Deliverability 2030 (in Bcf/d)



Import Capacity 65.2 Bcf/d

Export Capacity 69.6 Bcf/d



Source: ICF International October 2013 and January 2015 Data Bases and Compass Reports

Gas Facts (In Tcf)

	2013		2020		2030	
	United States	Central	United States	Central	United States	Central
Total Gas Consumption	26.4	11.2	27.6	11.4	31.3	11.9
Total Gas Production	24.3	14.5	30.4	15.3	36.0	16.7
Total Working Storage Capacity	4.4	2.5	4.7	2.7	4.8	2.7
Total LNG Imports	0.1	0.01	0.19	0.04	2.0	0.05
Total LNG Exports	0.0	0.0	2.38	2.08	2.41	2.12
Total Net Imports from Canada	1.9	0.7	1.4	0.7	1.1	0.4
Total Net Exports to Mexico	0.7	0.5	1.9	1.6	2.5	2.1

Source: ICF International Q4 2013 and Q1 2015 Data Bases and Compass Reports, and EIA 2013 data on LNG imports, and Canadian & Mexican import/exports

Natural Gas Prices 2014 (\$/MMBtu)

