

## Data Assumptions for Study Scenarios

<b>2019 Assumptions</b>	<b>Business as Usual</b>	<b>Robust Economy</b>	<b>Slow Growth</b>	<b>Green Economy</b>
<b>Nat Gas Prices (Henry Hub Spot, \$/MMBTU)</b>	Medium: \$4.74	High: Medium + \$3	Low: Medium - \$3	High: Medium + \$3
<b>Forced Coal Retirements (GW)</b>	Medium: MISO - 13.5, PJM - 15.8	Low: MISO - 9.0, PJM - 11.1	Low: MISO - 9.0, PJM - 11.1	High: MISO - 21.8, PJM - 18.4
<b>Carbon Pricing</b>	No	No	No	Yes: \$50/ton
<b>NOx, SOx ( \$/ton)</b>	Medium: NOx – 40.59, SOx - 0	Medium: NOx – 40.59, SOx - 0	Low: Medium -25%	High: Medium +25%
<b>Load Growth</b>	Medium: 1.4% peak, 1.7% energy	High: 2.1% peak, 2.5% energy	Low: 0.7% peak, 0.8% energy	High: 2.1% peak, 2.5% energy
<b>Wind (Eastern US)</b>	60.8 GW	60.8 GW	60.8 GW	111.6 GW
<b>Transmission expansion</b>	Approved Projects	Approved Projects + RITELine, PATH	Approved Projects	Approved Projects + RITELine, PATH

## Full Economic Benefit Results for Grain Belt Express

Demand Cost	(\$M)	2019			
		Business as Usual	Slow Growth	Robust Economy	Green Economy
Without Grain Belt	Missouri	2,965	2,063	4,872	8,362
With Grain Belt	Missouri	2,943	2,052	4,807	8,328
Savings	Missouri	22	11	65	34

Locational Marginal Price (\$/MWh)			2019			
			Business as Usual	Slow Growth	Robust Economy	Green Economy
Without Grain Belt	LMP OnPeak Avg	Missouri	38.99	26.94	63.73	99.43
Without Grain Belt	LMP OffPeak Avg	Missouri	28.77	21.07	37.93	78.12
Without Grain Belt	LMP Average	Missouri	33.64	23.87	50.24	88.27
With Grain Belt	LMP OnPeak Avg	Missouri	38.65	26.80	62.92	98.91
With Grain Belt	LMP OffPeak Avg	Missouri	28.62	20.97	37.35	77.93
With Grain Belt	LMP Average	Missouri	33.40	23.75	49.55	87.92
LMP Change	LMP OnPeak Delta	Missouri	-0.33	-0.14	-0.81	-0.52
LMP Change	LMP OffPeak Delta	Missouri	-0.15	-0.10	-0.58	-0.18
LMP Change	LMP Average Delta	Missouri	-0.24	-0.12	-0.69	-0.34

Variable Production Cost (Eastern US)		(\$M)	2019			
			Business as Usual	Slow Growth	Robust Economy	Green Economy
Without Grain Belt			75,906	52,959	100,798	150,015
With Grain Belt			75,331	52,572	99,931	148,780
Savings			574	387	867	1,236

## Emissions and Water Use Reduction Results for Grain Belt Express

### Emissions (Eastern US) 2019

		Business as Usual	Slow Growth	Robust Economy	Green Economy
Without Grain Belt	NOx (tons)	902,580	596,858	1,084,855	615,122
Without Grain Belt	SOx (tons)	2,196,005	971,702	2,618,321	1,426,626
Without Grain Belt	CO2 (tons)	1,541,471,608	1,171,768,238	1,768,831,993	1,140,810,137
Without Grain Belt	Hg (lbs)	28,091	13,352	32,614	18,238
Without Grain Belt	Water (MGal)	424,612	502,802	457,766	478,173
With Grain Belt	NOx (tons)	895,469	588,908	1,080,168	609,014
With Grain Belt	SOx (tons)	2,176,216	955,125	2,608,824	1,405,774
With Grain Belt	CO2 (tons)	1,531,458,478	1,160,202,768	1,761,300,314	1,130,027,471
With Grain Belt	Hg (lbs)	27,955	13,235	32,545	18,095
With Grain Belt	Water (MGal)	420,331	500,018	452,873	474,222
Reduction	NOx (tons)	7,111	7,950	4,687	6,109
Reduction	SOx (tons)	19,788	16,578	9,497	20,852
Reduction	CO2 (tons)	10,013,130	11,565,469	7,531,679	10,782,667
Reduction	Hg (lbs)	135	117	69	143
Reduction	Water (MGal)	4,281	2,783	4,893	3,952