



Synapse
Energy Economics, Inc.

Midwest Wind and Transmission: Rate Impacts Analysis

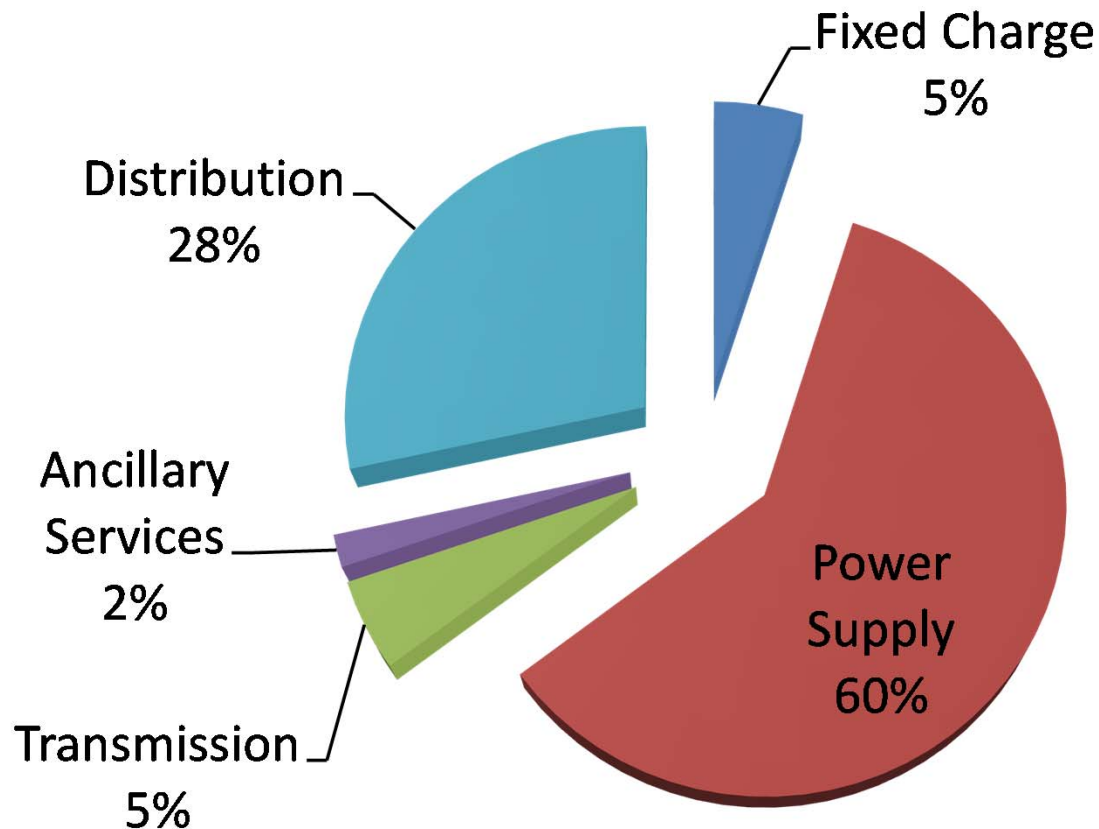
Prepared for Americans for a Clean Energy Grid

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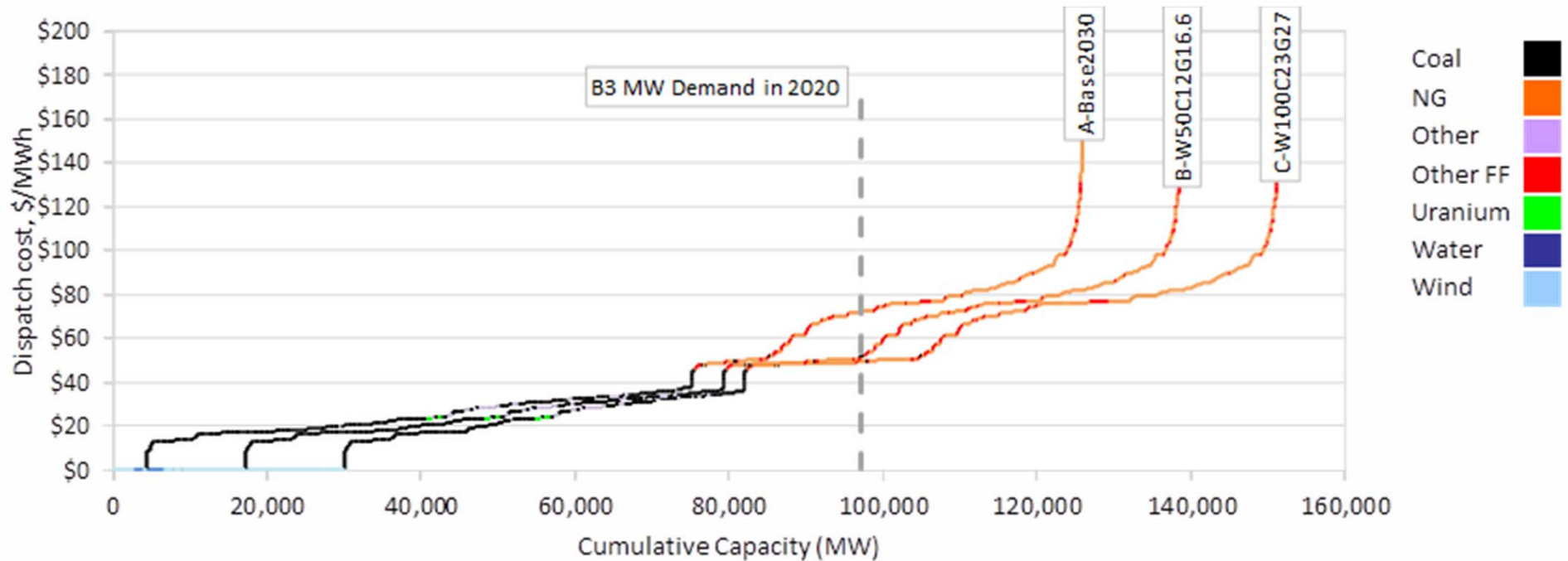
August 6, 2012

Retail Bill Components

Consumers' Energy - 1000 kWh monthly bill



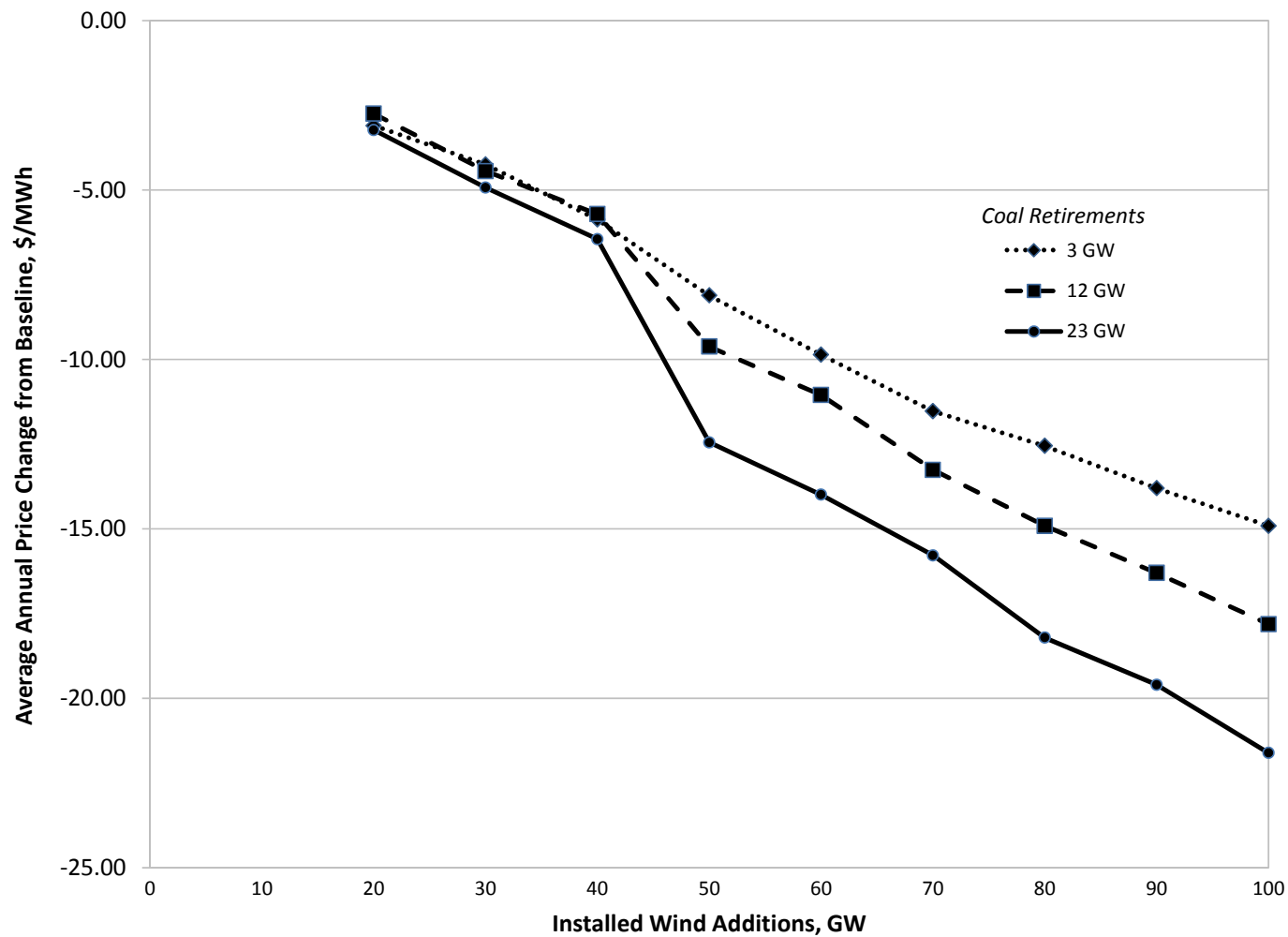
Price Suppression Effect



Scenario	Capacity Additions (GW)		
	Coal	Wind	Gas
A-Base2030	-3	0	0
B-W50C12G16.6	-12	50	16.6
CW10C23G27	-23	100	27

Impact on Energy Clearing Price

Energy Market Price Reductions with Increasing Wind in MISO Region



Transmission component Scenarios

Transmission Scenario - Cost Basis	Total Cost of New MISO Transmission “for Wind”, \$Billion	Transmission Rate Impact of Scenario Listed, for Year Listed, \$/MWh		
		2015	2021	2031
Current MVP Only	\$5.2	\$1.02	\$1.64	\$1.28
Current MVP + Synapse Low T Expansion	\$24.2	\$1.02	\$4.85	\$6.52
Current MVP + Synapse Medium T Expansion	\$31.2	\$1.69	\$5.93	\$8.46
Current MVP + Synapse High T Expansion	\$40.2	\$1.76	\$6.40	\$11.20

Key Findings

- Price suppression effect is supported by our analysis (and by MISO market monitor)
- This effect is predicted over all coal retirement scenarios considered
- Savings expected to offset or exceed the cost of required transmission investments
- Savings for customers depends on future exposure to the market price, market response, and other factors

- Transmission cost assessment not based on specific wind requirements studies – should be taken as “indicative”
- Electric energy price is complicated function of many factors, and our model is not “optimized” to represent these
- In particular, we have not modeled the response of other market participants to the price impact shown here, which would probably reduce the annual savings over time.



Conclusions

- Incremental transmission build-outs can access very large amounts of high-quality wind resources in the Midwest
- Adding low-running cost resources (wind) can lead to substantial clearing price reductions in electricity markets
- Transmission costs are offset or exceeded by potential electricity market impacts
- Specific benefits depend on assumptions regarding contracting structures, market response, and engineering details.