

CREZ Benefits are Much Higher than CREZ Costs

Third Technical Conference, ERCOT's Responses to Parties' Follow-Up Questions;
Public Utility Commission of Texas Docket 33672; Item 1114; Filed May 15, 2008.

http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/33672_1114_584050.PDF

Scenario	New Wind Capacity (MW)	Transmission Capital Cost (\$M)	Annual System Production Cost Savings (\$M/yr)	Annual System Generator Revenue Reductions (\$M/yr)	New Wind Average Capacity Factor (\$/MWh)	Average New Wind Generator Revenue (\$/MWh)	Annual System Production Cost Savings per kW New Wind (\$/kW-yr)	Annual System Generator Revenue Reductions per kW New Wind (\$/kW-yr)	Transmission Capital Cost per kW New Wind (\$/kW)
	A	B	C	C			1000*C/A	1000*D/A	1000*B/A
Scenario 1 (Plan A)	5,150	2,950	1,150	1,931	40.8%	30.1	223	375	573
Scenario 1 (Plan B)	5,150	3,779	1,140	1,931	41.6%	29.1	221	375	734
Scenario 2	11,552	4,931	1,677	3,356	40.9%	25.1	145	290	427

NOTE - \$4.931 Billion of transmission, when financed and including O&M expenses, costs about \$1 Billion/year.

BASED ON NUMBERS ABOVE (Scenario 2)

A CREZ transmission investment of \$1 Billion per year is expected to LOWER overall payments by customers to generators (power plant owners) by more than \$3 Billion per year – an overall savings of about \$2 Billion per year.

Fuel savings alone amount to \$1.7 Billion per year (This is a savings to power plant owners but represent reduced sales for fuel suppliers).

Overall, these ERCOT study results appear to be very good news for electric consumers, but may concern fuel suppliers and competing generators.

ADDED COSTS for wind integration, "back up", connecting lines, etc – are much smaller than transmission costs

ADDED BENEFITS (emission numbers below extrapolated to Scenario 3)

Savings numbers above assume \$7/mmBtu natural gas. Current price is \$13.

Up to 16% reduction in CO2 emissions from ERCOT power plants (based on GE)

Up to 13% reduction in NOx emissions from ERCOT power plants (based on GE)

About 17 billion gallons of water saved = 2 extra gallons/day for every Texan (per FPLE)

More than \$5 Billion in economic development benefits for Texas (per FPLE)

High CREZ Scenarios Reduce Coal Market Share and Power Prices

ERCOT Supplemental Response to Third Technical Conference Follow-Up Questions;
Public Utility Commission of Texas Docket 33672; Item 1306; Filed June 10, 2008.

http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/33672_1306_586651.PDF

	Scenario 1 Plan A			Scenario 1 Plan B		
Technology	MW	GWh	CF (%)	MW	GWh	CF (%)
CT	4,528	6,928	17.4	4,528	6,921	17.4
CC	34,486	155,604	51.4	34,486	156,100	51.5
Coal	20,854	153,949	84.0	20,854	153,290	83.7
Gas Steam	20,709	12,025	6.6	20,709	11,992	6.6
Hydro	469	957	23.2	469	957	23.2
Nuclear	5,007	38,247	87.0	5,007	38,277	87.0
Wind	12,136	41,836	39.2	12,136	41,773	39.2

	Scenario 2			Scenario Start Case		
Technology	MW	GWh	CF (%)	MW	GWh	CF (%)
CT	4,528	7,006	17.6	4,528	6,870	17.3
CC	34,486	149,276	49.3	34,486	169,576	56.0
Coal	20,854	139,822	76.3	20,054	154,372	87.6
Gas Steam	20,709	11,627	6.4	20,709	13,958	7.7
Hydro	469	957	23.2	469	958	23.2
Nuclear	5,007	36,983	84.0	5,007	38,346	87.2
Wind	18,538	63,931	39.3	18,538	25,590	15.7

	No CREZ Wind Case		
Technology	MW	GWh	CF (%)
CT	4,528	6,999	17.7
CC	34,486	174,074	57.6
Coal	20,054	154,753	88.1
Gas Steam	20,709	14,191	7.8
Hydro	549	1,042.7	21.7
Nuclear	5,007	38,346	87.4
Wind	6,903	19,903	32.9

Electric Production from Coal		
NO CREZ	154,753 GWh	
Scenario 1B	153,290 GWh	
Scenario 2	139,822 GWh	
Reduction in Coal Production with CREZ		
Scenario 1B	-1,463 GWh	-1%
Scenario 2	-14,931 GWh	-10%

With substantial additions of wind power, coal more frequently becomes the marginal fuel in ERCOT, markedly reducing wholesale prices. This outcome is reflected in the substantial difference in average fuel cost savings between scenario 1B and 2, which drops from \$53/MWh to \$38/MWh (per ERCOT CTO Study).