

Appendix 7

Derivation and Assumptions
Associated with Avoided
Costs

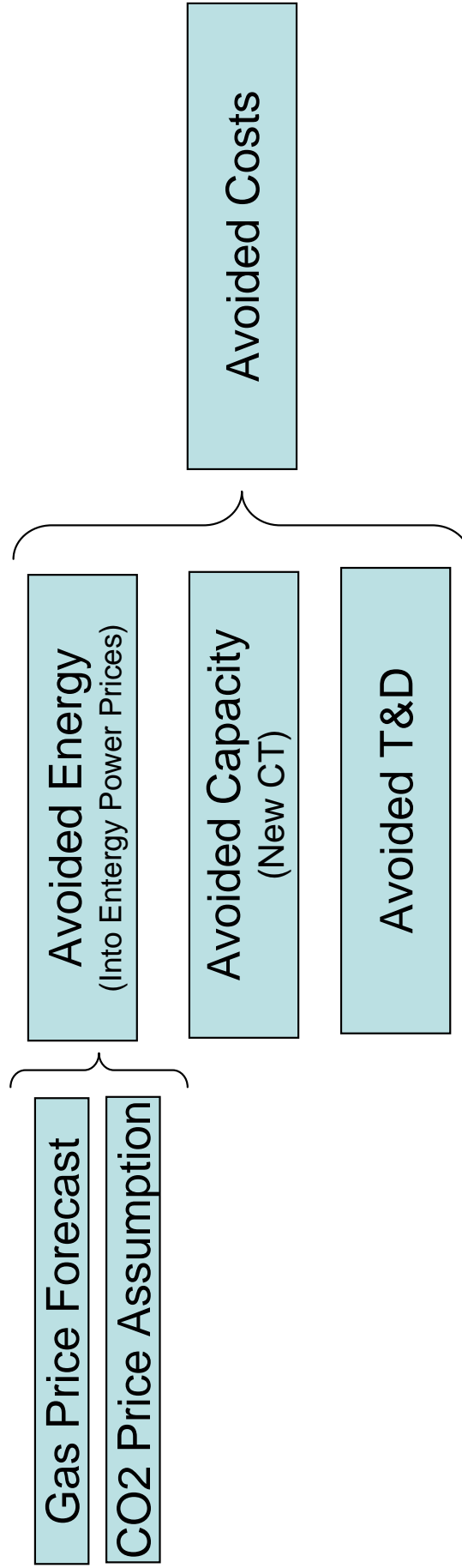


Appendix 7

Avoided Cost Assumptions ENO Energy Smart Programs

June 30, 2009

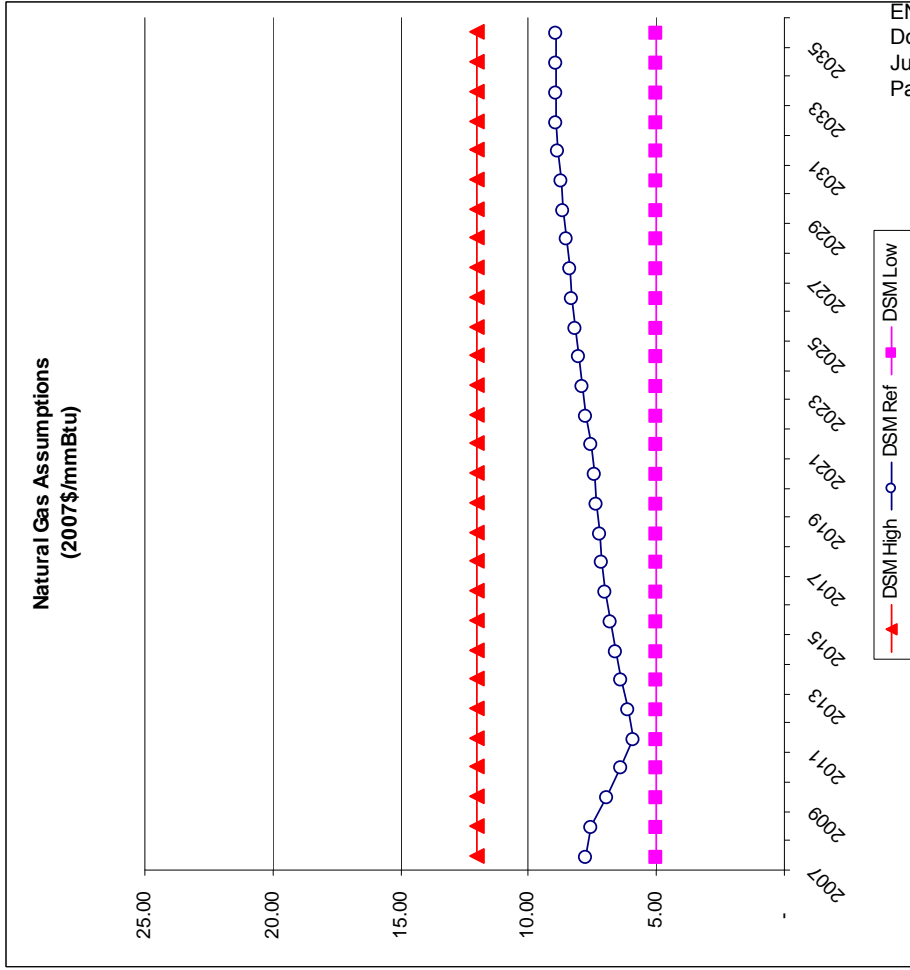
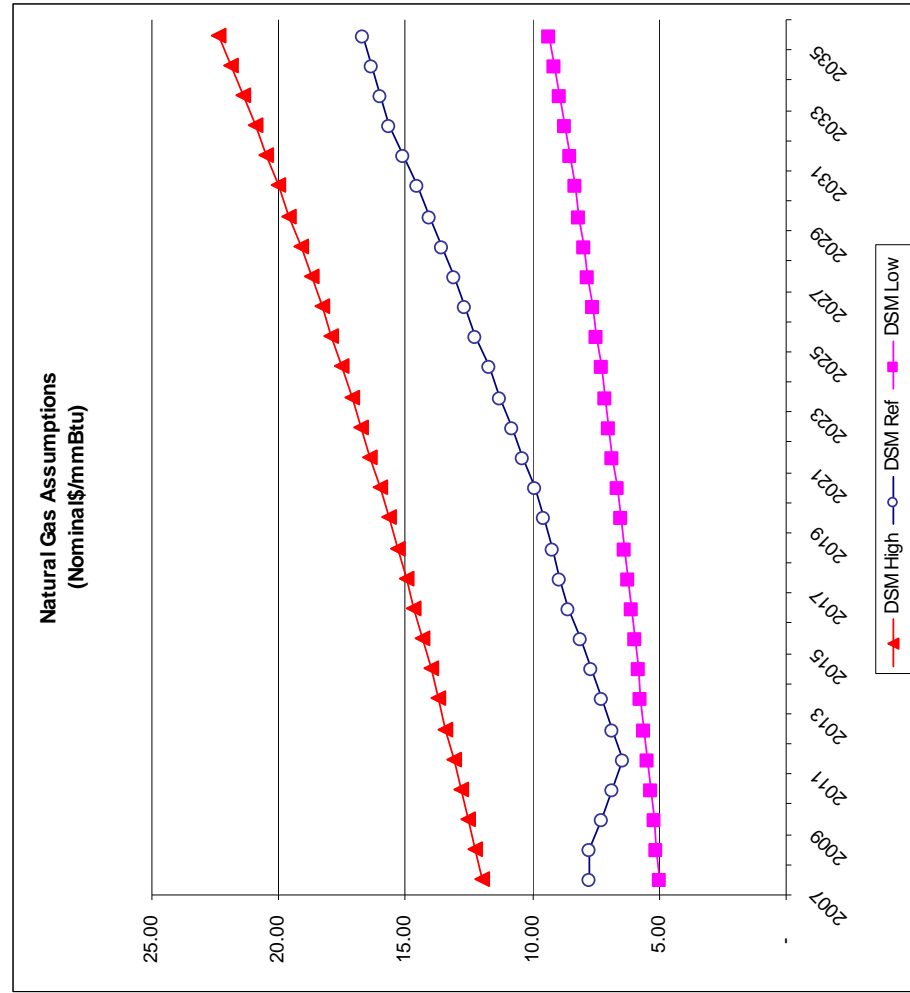
Components of Avoided Cost Assumption for DSM Potential Study



Summary of High/Low Case Assumptions

	Low case	Reference case	High case
Gas price	\$5.0 / MMBtu	\$7.60 / MMBtu	\$12.0 / MMBtu
CO₂ price	\$10 / ton by 2020	\$25 / ton by 2020	\$50 / ton by 2020
New capacity cost	\$350 / kW	\$680 / kW	\$850 / kW
Net to Gross Ratio	Same as reference	80%	Same as reference
Program cost	+20%	Baseline	-20%
Participation level	-10%	Baseline	Baseline +
Incentive level	3 yr payback capped at 50% measure	2 yr payback capped at 75% measure	1 yr payback capped at 100% measure (or best judgment by ICF)

Gas Assumption for Avoided Energy

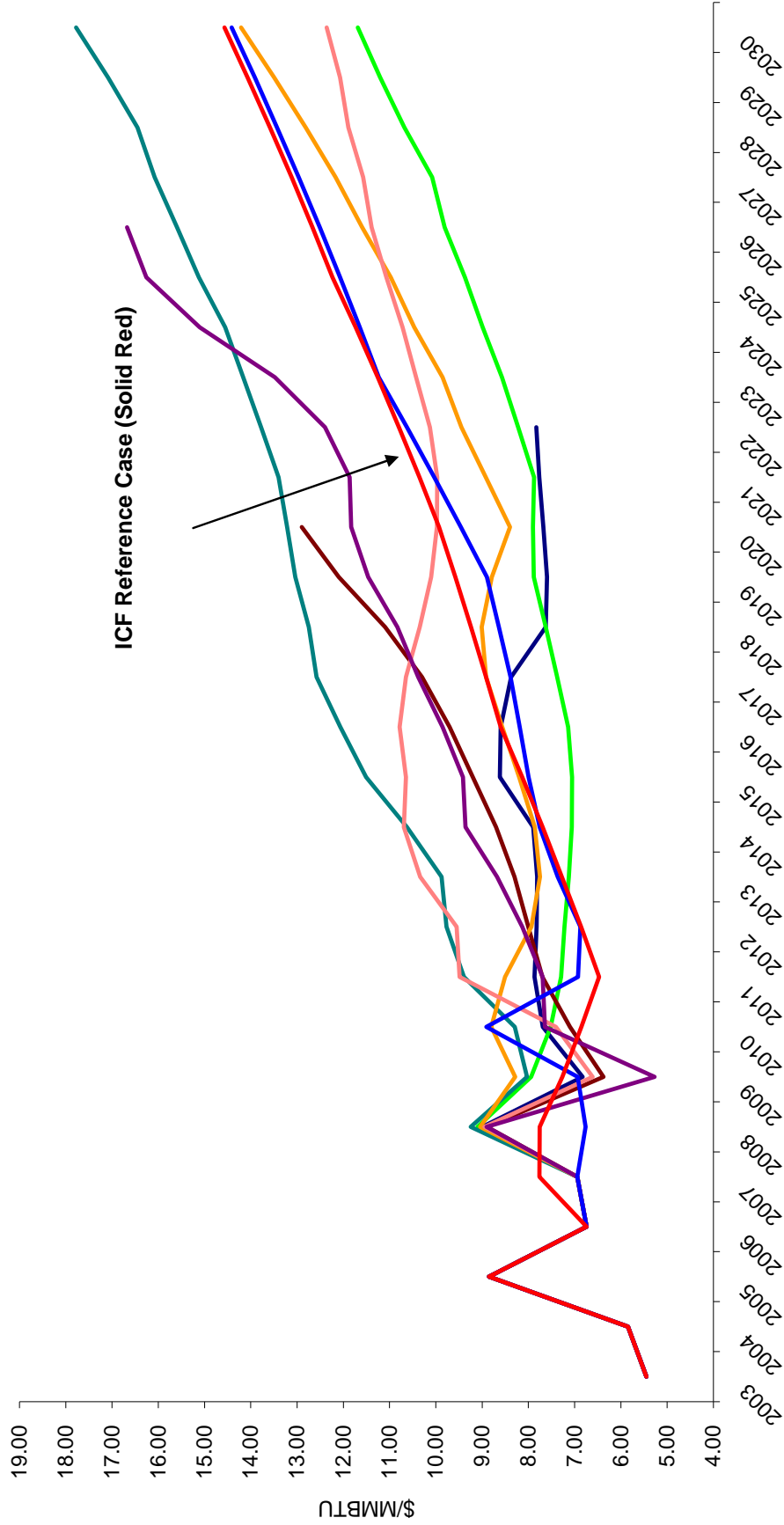


Gas Assumption for Avoided Energy

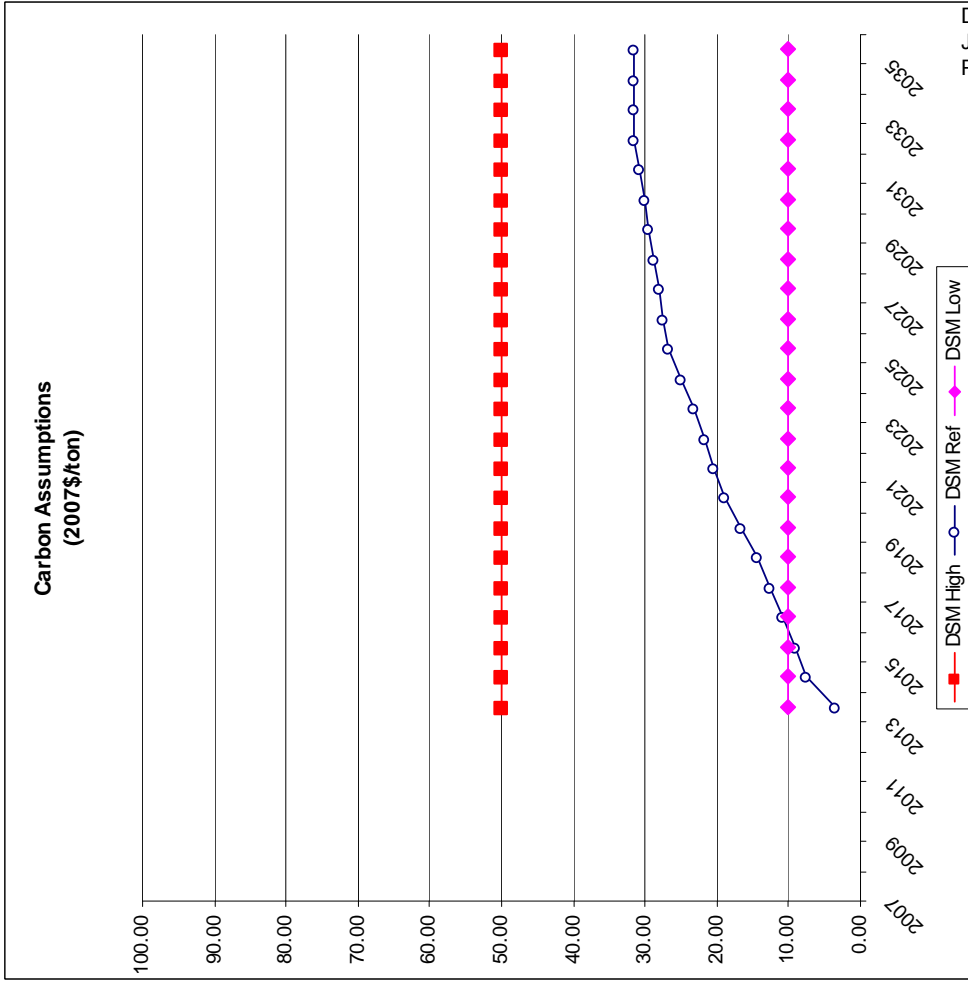
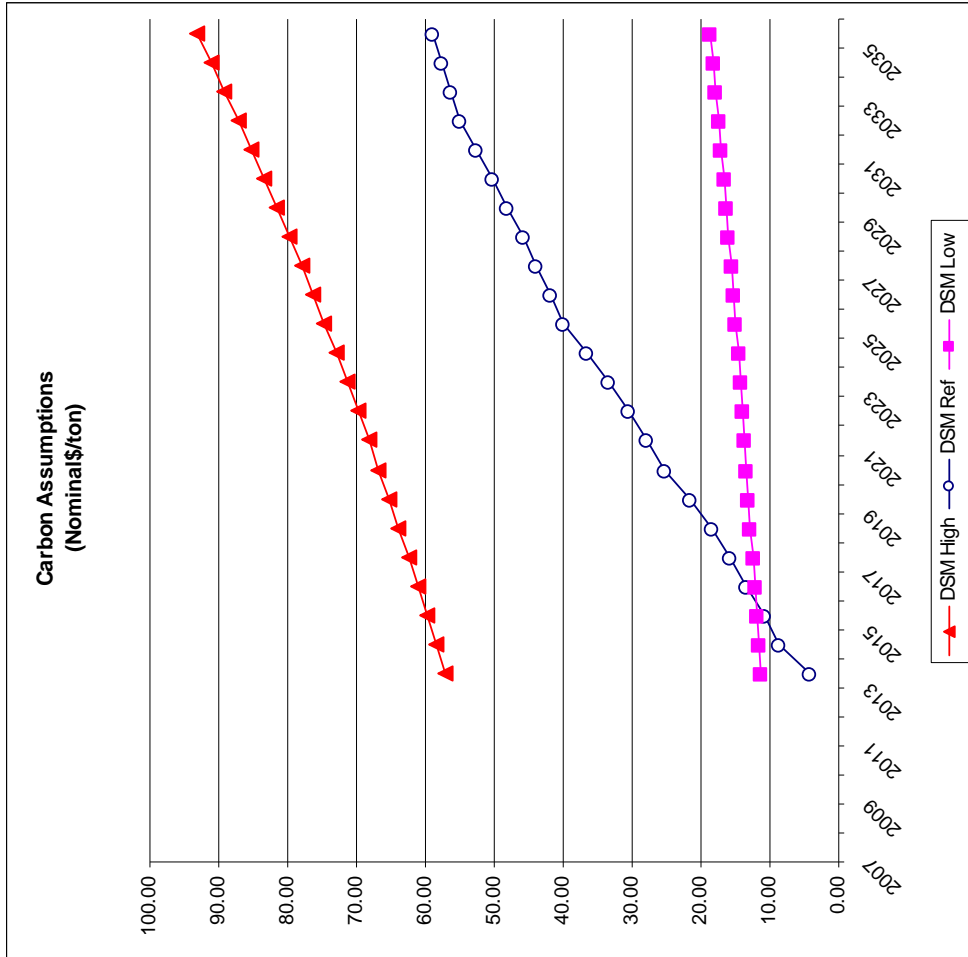
	1	2	3	Inflation Rate (SPO POV @ 5/25/07)	4	5	6
	Reference Case ICF Study 3/14/2008 Nominal\$	Low Case ICF Study 3/14/2008 Nominal\$	High Case ICF Study 3/14/2008 Nominal\$		Reference Case ICF Study 3/14/2008 2007\$	Low Case ICF Study 3/14/2008 2007\$	High Case ICF Study 3/14/2008 2007\$
	DSM Ref	DSM Low	DSM High		DSM Ref	DSM Low	DSM High
2007	7.76	5.00	12.00	1.0000	7.76	5.00	12.00
2008	7.75	5.12	12.29	1.0240	7.57	5.00	12.00
2009	7.26	5.23	12.55	1.0455	6.95	5.00	12.00
2010	6.85	5.35	12.83	1.0690	6.41	5.00	12.00
2011	6.47	5.47	13.12	1.0931	5.92	5.00	12.00
2012	6.86	5.59	13.41	1.1177	6.14	5.00	12.00
2013	7.27	5.71	13.71	1.1428	6.37	5.00	12.00
2014	7.69	5.84	14.02	1.1685	6.58	5.00	12.00
2015	8.13	5.97	14.34	1.1948	6.80	5.00	12.00
2016	8.60	6.11	14.66	1.2217	7.04	5.00	12.00
2017	8.91	6.25	14.99	1.2492	7.13	5.00	12.00
2018	9.24	6.39	15.33	1.2773	7.23	5.00	12.00
2019	9.58	6.53	15.67	1.3060	7.34	5.00	12.00
2020	9.93	6.68	16.03	1.3354	7.44	5.00	12.00
2021	10.36	6.83	16.39	1.3655	7.58	5.00	12.00
2022	10.80	6.98	16.75	1.3962	7.73	5.00	12.00
2023	11.26	7.14	17.13	1.4276	7.88	5.00	12.00
2024	11.74	7.30	17.52	1.4597	8.04	5.00	12.00
2025	12.24	7.46	17.91	1.4926	8.20	5.00	12.00
2026	12.67	7.63	18.31	1.5262	8.30	5.00	12.00
2027	13.12	7.80	18.73	1.5605	8.41	5.00	12.00
2028	13.59	7.98	19.15	1.5956	8.51	5.00	12.00
2029	14.07	8.16	19.58	1.6315	8.62	5.00	12.00
2030	14.57	8.34	20.02	1.6682	8.73	5.00	12.00
2031	15.09	8.53	20.47	1.7058	8.84	5.00	12.00
2032	15.62	8.72	20.93	1.7441	8.96	5.00	12.00
2033	15.97	8.92	21.40	1.7834	8.96	5.00	12.00
2034	16.33	9.12	21.88	1.8235	8.96	5.00	12.00
2035	16.70	9.32	22.37	1.8645	8.96	5.00	12.00
Levelized 08-35	\$9.26	\$6.31	\$15.14		\$7.22	\$5.00	\$12.00

Comparison of Gas Assumption in Avoided Energy to Consultant Forecasts

Various Henry Hub Natural Gas Reference Case Forecasts (Nominal \$s)



Carbon Assumption for Avoided Energy

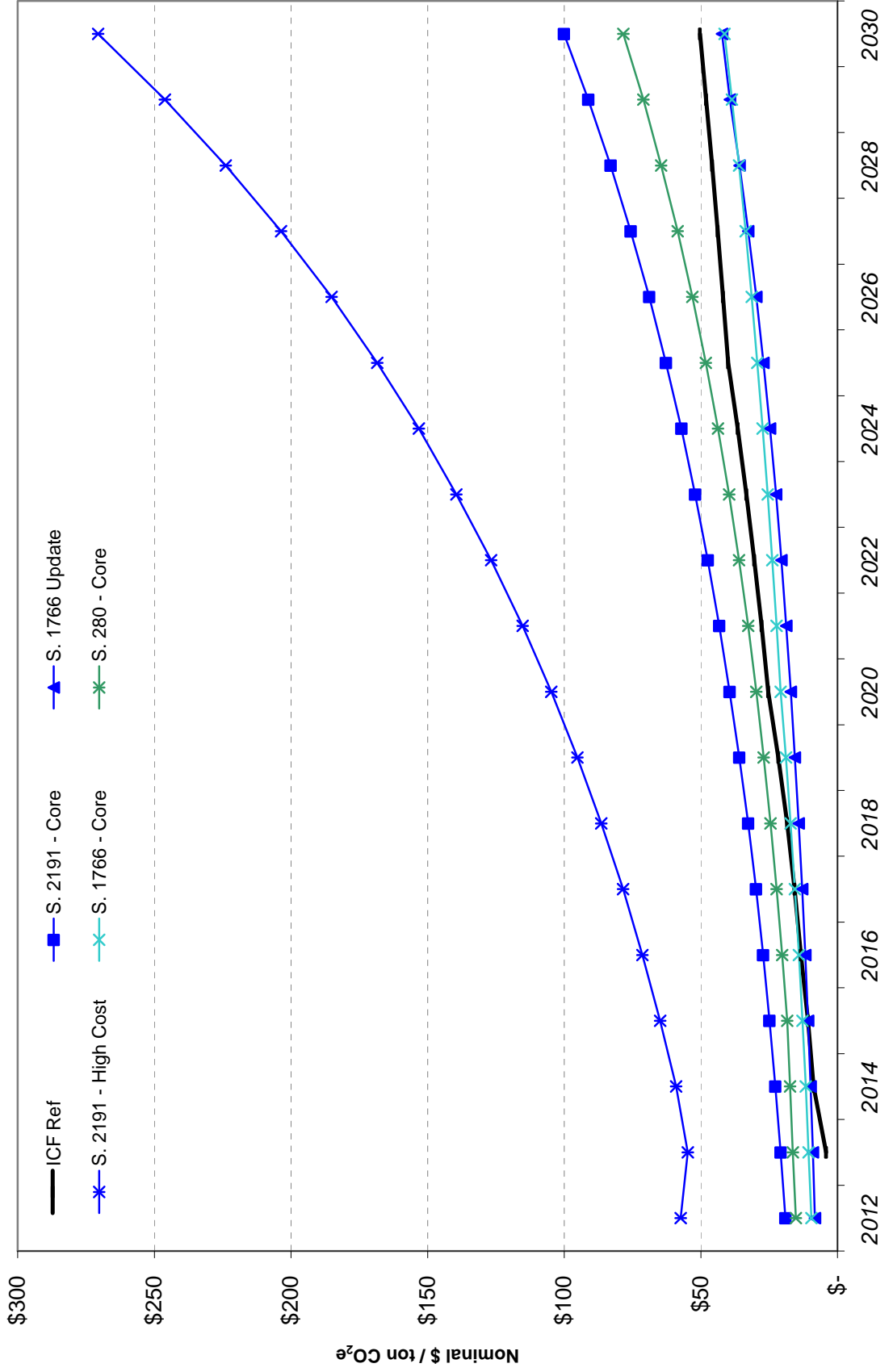


Carbon Assumption for Avoided Energy

	1	2	3	Inflation Rate (SPO POV @ 5/25/07)	4	5	6
	Reference Case ICF Std 3/14/2008 Nominal\$	Low Case ICF Std 3/14/2008 Nominal\$	High Case ICF Std 3/14/2008 Nominal\$		Reference Case ICF Std 3/14/2008 2007\$	Low Case ICF Std 3/14/2008 2007\$	High Case ICF Std 3/14/2008 2007\$
	DSM Ref	DSM Low	DSM High		DSM Ref	DSM Low	DSM High
2007				1.0000			
2008				1.0240			
2009				1.0455			
2010				1.0690			
2011				1.0931			
2012				1.1177			
2013	4.18	11.43	57.14	1.1428	3.66	10.00	50.00
2014	8.71	11.69	58.43	1.1685	7.45	10.00	50.00
2015	10.80	11.95	59.74	1.1948	9.04	10.00	50.00
2016	13.39	12.22	61.09	1.2217	10.96	10.00	50.00
2017	15.70	12.49	62.46	1.2492	12.57	10.00	50.00
2018	18.42	12.77	63.87	1.2773	14.42	10.00	50.00
2019	21.61	13.06	65.30	1.3060	16.55	10.00	50.00
2020	25.35	13.35	66.77	1.3354	18.99	10.00	50.00
2021	27.78	13.65	68.27	1.3655	20.34	10.00	50.00
2022	30.43	13.96	69.81	1.3962	21.79	10.00	50.00
2023	33.33	14.28	71.38	1.4276	23.35	10.00	50.00
2024	36.52	14.60	72.99	1.4597	25.02	10.00	50.00
2025	40.01	14.93	74.63	1.4926	26.80	10.00	50.00
2026	41.88	15.26	76.31	1.5262	27.44	10.00	50.00
2027	43.84	15.61	78.03	1.5605	28.10	10.00	50.00
2028	45.90	15.96	79.78	1.5956	28.77	10.00	50.00
2029	48.05	16.32	81.58	1.6315	29.45	10.00	50.00
2030	50.30	16.68	83.41	1.6682	30.15	10.00	50.00
2031	52.66	17.06	85.29	1.7058	30.87	10.00	50.00
2032	55.13	17.44	87.21	1.7441	31.61	10.00	50.00
2033	56.37	17.83	89.17	1.7834	31.61	10.00	50.00
2034	57.64	18.24	91.18	1.8235	31.61	10.00	50.00
2035	58.93	18.65	93.23	1.8645	31.61	10.00	50.00
Levelized 13-35	\$26.30	\$13.72	\$68.60		\$17.95	\$10.00	\$50.00

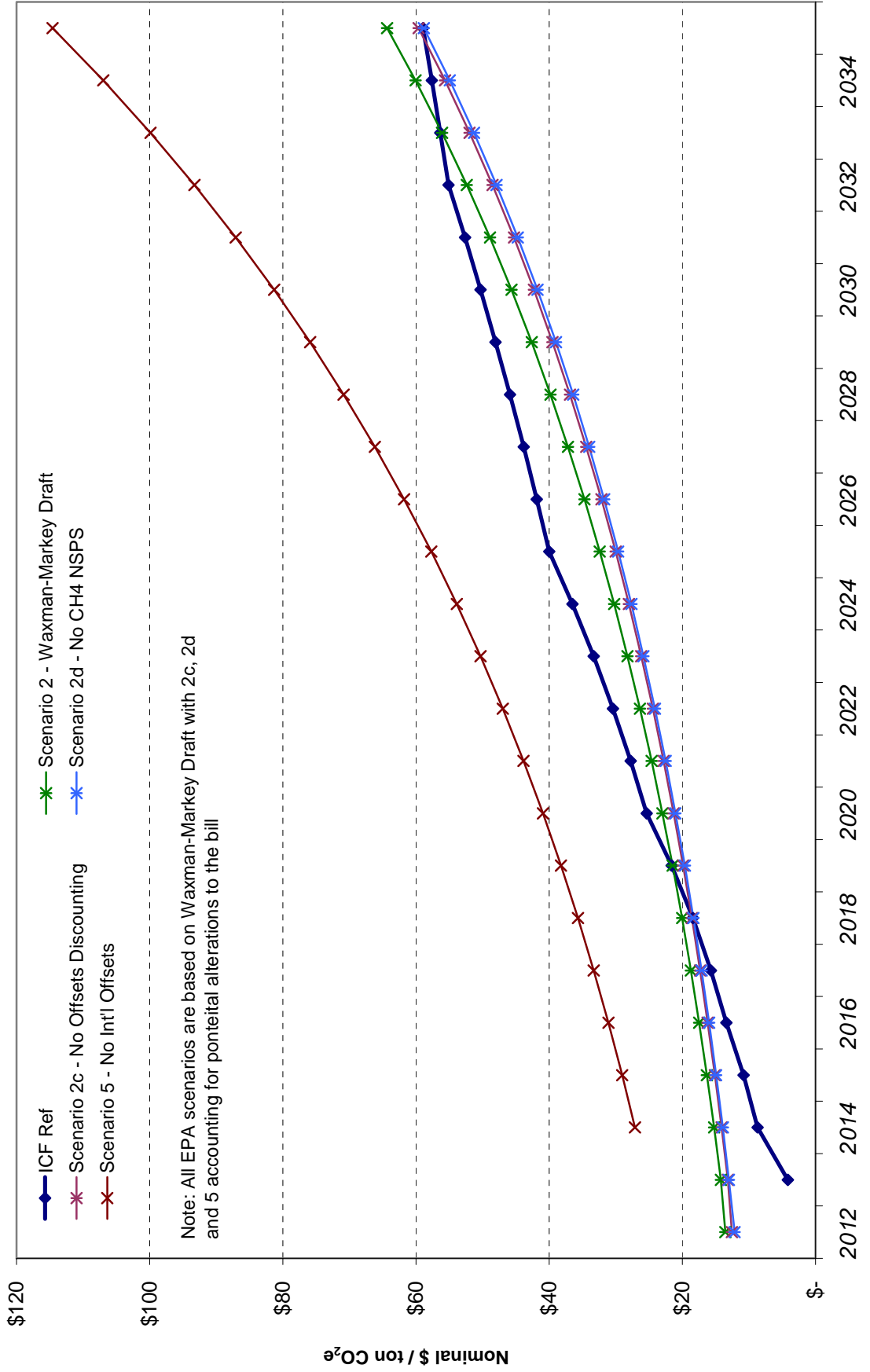
Comparison Carbon Assumption for Avoided Energy to Public Forecasts

ICF Reference Carbon vs Various EIA CO₂ Allowance Price Forecasts

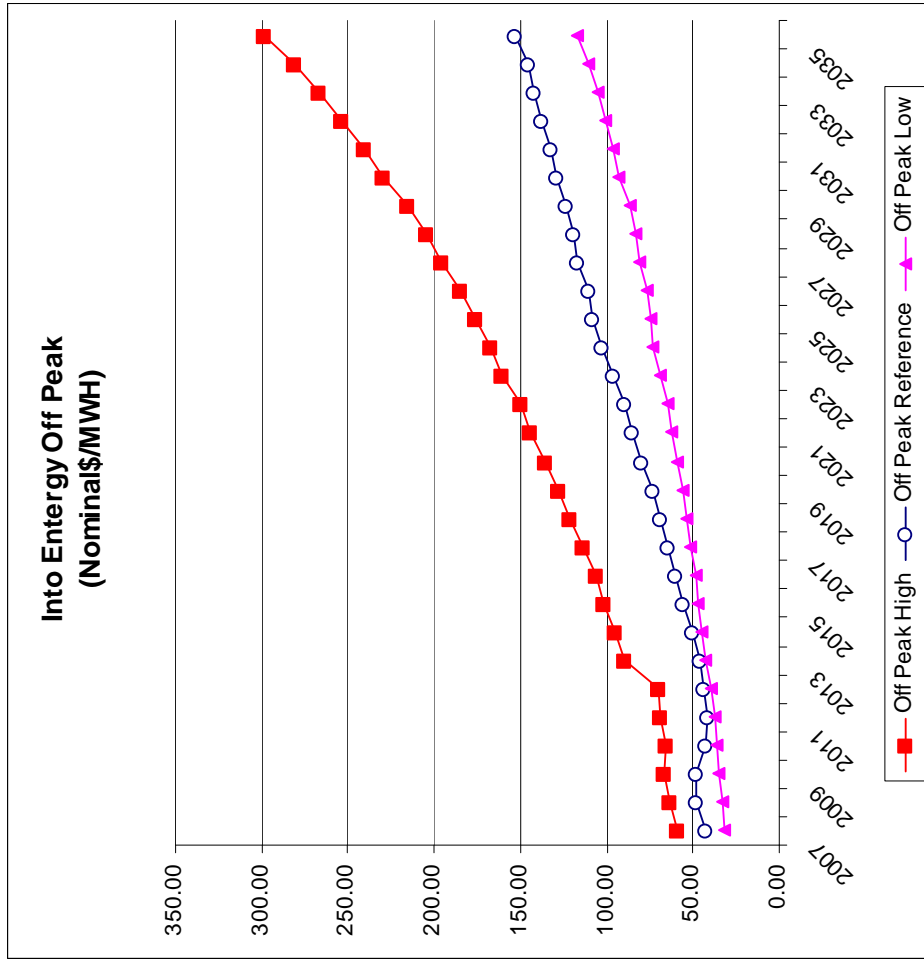
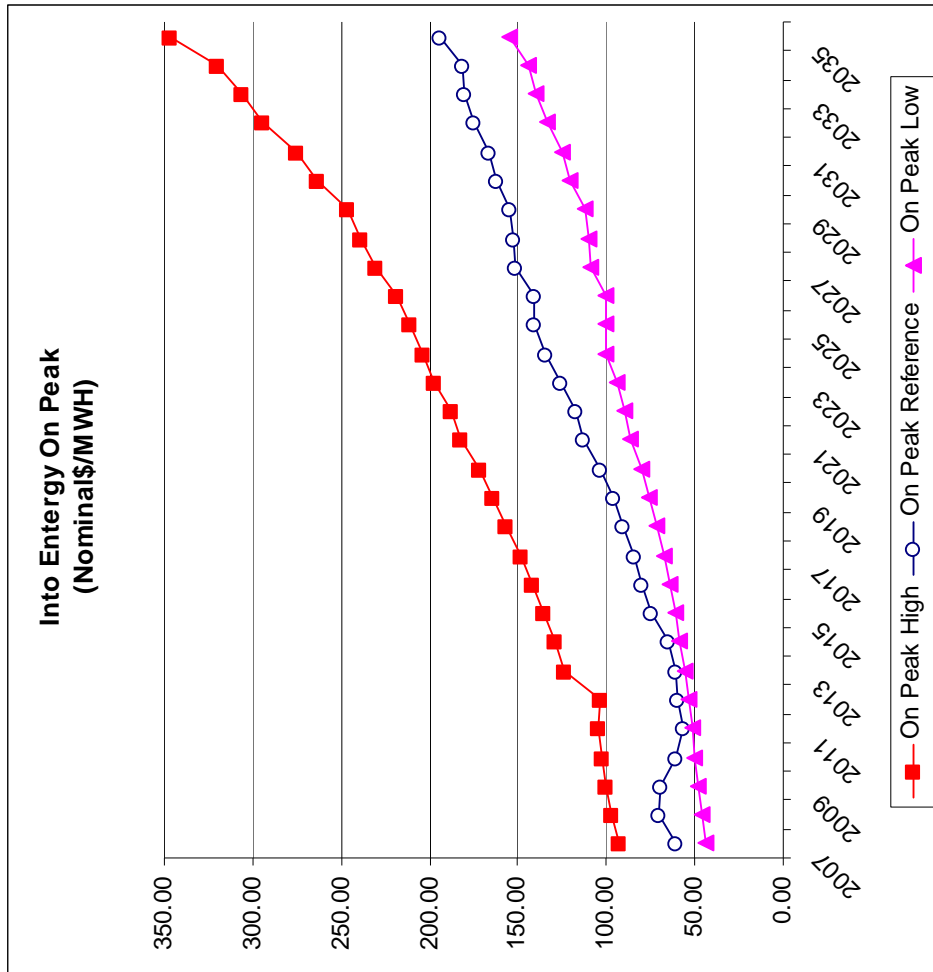


Comparison Carbon Assumption for Avoided Energy to Public Forecasts

ICF Reference Carbon vs. Various EPA CO₂ Price Forecasts



Avoided Energy -- Into Entergy Power Prices



Avoided Energy -- Into Entergy Power Prices

	Into Entergy On Peak (Nominal\$/MWh)			Into Entergy Off Peak (Nominal\$/MWh)		
	1	2	3	4	5	6
	3/18/2008 On Peak Reference	3/18/2008 On Peak High	3/18/2008 On Peak Low	3/18/2008 Off Peak Reference	3/18/2008 Off Peak High	3/18/2008 Off Peak Low
2007	60.74	92.66	43.44	42.18	59.53	31.81
2008	70.34	97.33	45.87	48.07	63.81	33.33
2009	69.17	100.75	47.86	47.68	66.60	34.95
2010	60.50	102.12	49.64	42.73	65.89	36.08
2011	56.98	104.62	50.84	41.25	68.47	37.23
2012	60.10	103.99	53.48	43.41	69.63	38.91
2013	60.52	123.93	55.49	45.51	90.05	43.16
2014	65.61	129.44	58.21	50.29	95.10	44.99
2015	74.23	135.71	61.27	55.98	101.40	47.16
2016	80.47	142.07	64.39	59.83	106.10	48.46
2017	84.15	148.47	67.28	64.27	114.04	50.95
2018	91.04	157.21	71.76	69.00	121.19	53.42
2019	96.31	163.83	75.59	73.68	127.86	56.20
2020	103.60	171.69	79.52	79.30	135.58	58.89
2021	113.24	182.79	86.43	85.42	144.49	62.49
2022	117.41	187.66	89.54	89.75	149.93	65.01
2023	126.32	197.70	93.37	96.62	160.36	68.49
2024	134.58	203.49	100.63	102.60	167.62	73.26
2025	140.64	211.49	100.48	108.43	176.40	74.82
2026	141.23	218.62	100.52	110.07	184.62	76.16
2027	151.85	230.91	109.08	116.55	195.43	81.34
2028	152.53	239.41	109.65	119.09	204.79	82.80
2029	154.53	246.04	112.28	123.14	215.63	86.87
2030	162.23	263.38	121.09	128.69	229.74	93.15
2031	166.16	274.79	124.53	132.48	241.11	96.33
2032	175.19	294.85	133.80	137.77	254.30	100.76
2033	180.69	306.14	139.52	141.93	266.35	105.05
2034	181.87	319.85	143.81	145.99	280.56	110.63
2035	194.13	347.21	155.22	153.62	298.22	116.88

Avoided Capacity

GENERATION TECHNOLOGY INPUTS

Updated: 1/25/2008

SUMMARY GUIDANCE

	CT ¹
Source	ESI
Typical Size (MW)	300
Typical Development Time (yrs.) ⁷	1.5
Typical Construction Time (yrs.) ⁸	1.25
Overnight Cost (\$/kW) ⁹	\$575
Installed Cost (\$/kW) ¹⁰	\$682
Heat Rate (mmBtu/MWh) ¹¹	10,563
Operational Role ¹²	Peaking
Typical Capacity Factor ¹²	0-15%
Fixed O&M (\$/kW-yr) ¹³	\$6.13
Variable O&M (\$/MWh) ¹⁴	\$8.91
NOx (lbs/mmBtu)	0.04
SO2 (lbs/mmBtu)	0.00
Hg (lbs/mmBtu)	0.00
CO2 (lbs/mmBtu)	129
Technology Development ¹⁵	Existing
Year Introduced ¹⁶	1999
Useful Life (yrs)	30

¹ Combustion Turbine three unit station mode

Line Losses

AVERAGE ENERGY LOSS FACTORS

<u>Company</u>	<u>Residential</u>	<u>Commercial</u>	<u>Governmental</u>	<u>Industrial</u>	<u>Total Retail</u>	<u>Wholesale</u>	<u>Total Retail & Wholesale for Resale</u>
ENOI	7.9964%	7.8633%	6.5951%	4.4201%	7.4172%	N/A	7.4172%

Note: Does not include wheeling.

Note: kWh are pro formed (if applicable) but not year-end or weather adjusted.

Created 07/20/2006

Avoided T&D Costs

- Background
- Approach
- Avoided T&D Assumptions

D Planned –

Total Annual D Planned Investment = \$25 M
 Re-conductor projects = \$4M (40 miles @ \$100k/mile)
 Projected Reduction w/ DSM = \$1.2M (12 miles @ \$100k/mile)
 Responsibility View Reduction w/ DSM \$900k
 2017 projected to be the 1st year of savings

D Reliability –

Assumption to reduce x number of transformer upgrades per year w/ "EE" savings
 2,224 Distribution Transformers on system
 7 Distribution Transformers upgraded per year
 1 every 3 years upgraded in low growth areas that DSM may defer
 \$1.0M per Transformer upgrade
 \$1.0M / 3
 \$330k per year
 2013 projected to be 1st year of savings

T Reliability –

No real savings would occur until at least 2012
 No projects currently in the 5 year plan were able to be delayed due to DSM
 No potential projects avoided came close to a cost-justification threshold to consider
 By 2017, some savings are possible
 A savings in 2017 would be \$1,050,000 in 2008 dollars
 Extrapolation yields the following potential savings:
 2008-2012: \$0
 2013: \$100,000
 2014: \$300,000
 2015: \$500,000
 2016: \$750,000
 2017: \$1,050,000

Levelized Cost Levelized Cost / kW

	356		
\$391,579.25	1.100	D-Planned	[input]
\$193,446.34	0.543	D-Reliability	[input]
\$456,842.45	1.283	T-Reliability	[input]
\$1,041,868.04	2.927	Total T&D	[input]

Assumptions: Costs are estimated for 2017 in 2008\$
 Costs are ramped up from 2013 to reach 2017 estimates
 For purposes of this analysis, costs are held constant for 10 years past 2017. Costs beyond 2017 are highly uncertain.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	\$0	\$0	\$0	\$0	\$0	\$85,714	\$257,143	\$428,571	\$642,857	\$900,000
	\$0	\$0	\$0	\$0	\$0	\$330,000	\$330,000	\$330,000	\$330,000	\$330,000
	\$0	\$0	\$0	\$0	\$0	\$100,000	\$300,000	\$500,000	\$750,000	\$1,050,000
	\$0	\$0	\$0	\$0	\$0	\$515,714	\$887,143	\$1,258,571	\$1,722,857	\$2,280,000