



**Total Resource Cost (TRC) Test Results:
Jointly Implemented Programs**

Draft

Triennial
Energy Efficiency Plan:
(6/1/2011-5/31/2014)

Presented to:
Commonwealth Edison
Nicor Gas
Peoples Gas
North Shore Gas

February 10, 2016

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Acknowledgements: This report includes contributions from Kevin Grabner and Rob Neumann in addition to those individuals listed above.

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Appendix A: TRC Benefit Cost Results for Jointly Implemented Programs

Several of the energy efficiency programs implemented by Commonwealth Edison (ComEd), Nicor Gas, Peoples Gas, and North Shore Gas are “joint” programs such that they are designed and operated jointly by ComEd and one or more of the gas utilities for customers who are served both by ComEd (electric service) and Nicor Gas, Peoples Gas, or North Shore Gas (gas service). The intent of the joint programs is to gain efficiencies in the marketing and operations of the programs for the joint customer participants from what would occur if each utility marketed and operated its own program. For each joint program, the utilities involve a common implementation contractor. In total, there are eight jointly implemented programs. **Navigant’s analysis shows that when the jointly implemented programs are viewed in the aggregate, each program was cost-effective over the three-year period based on both the IL TRC test and the UCT.** Table A-1 lists the eight programs jointly implemented by ComEd and the gas utilities, and indicates which gas utilities jointly implemented the programs in which program years.

Table A-1. Summary of Jointly Implemented Programs and Timing

Program	Peoples Gas / North Shore Gas			Nicor		
	EPY4 / GPY1	EPY5 / GPY2	EPY6 / GPY3	EPY4 / GPY1	EPY5 / GPY2	EPY6 / GPY3
Home Energy Savings / Single Family Retrofit			X	X	X	X
Complete Systems Replacement / Residential Prescriptive / HEER	X	X		X	X	
Multi-Family Retrofit	X	X	X	X	X	X
Elementary Energy Education				X	X	X
Residential New Construction				X	X	X
C&I Retrocommissioning	X	X	X	X	X	X
C&I New Construction				X	X	X
Small Business Direct Install / Efficiency	X	X	X	X	X	

Source: Navigant researched data

A summary of the components of the joint cost effectiveness calculations for each joint program are shown in Table A-2 for the Illinois TRC calculations and Table A-3 for the Utility Cost Test calculations. The tables include the value of each benefit and cost component for each program, when aggregated across all utilities that were involved in its joint implementation. For the IL TRC, the TRC ratio for the individual programs ranged from 1.17 for Complete Systems Replacement / Residential Prescriptive to 4.24 for C&I New Construction. For the UCT, the results ranged from 1.38 for Home Energy Savings / Single Family Retrofit to 3.08 for C&I New Construction.



Table A-2. Summary of Program Level Benefits, Costs (\$ in 000's) and IL TRC Test – Jointly Implemented Programs

Program (a)									Costs						IL Total Resource Cost (TRC) Test			
	Avoided Electric Production	Avoided Electric Capacity	Avoided Electric T&D	Avoided Ancillary	Avoided Gas Production	Avoided Gas Capacity	Other Benefits	Other Benefits	Non-Incentive Costs (Electric)	Non-Incentive Costs (Gas)	Incentive Costs (Electric)	Incentive Costs (Gas)	Net Incremental Costs (Electric)	Net Incremental Costs (Gas)	IL TRC Benefits	IL TRC Costs	IL TRC Test Net Benefits	IL TRC Test
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	Description	(i)	(j)	(k)	(l)	(m)	(n)	(o) = (b+c+d+e+f+g+h)	(p) = (i+j+m+n)	(q) = (o-p)	(r) = (o/p)
Home Energy Savings / Single Family Retrofit	\$ 1,175,853	\$ 1,450,043	\$ 952,332	\$ 270,032	\$ 7,333,180	\$ 803,928	\$ 1,092,420	GHG / Environmental Benefits	\$ 1,565,878	\$ 2,495,877	\$ 996,856	\$ 3,642,295	\$ 1,815,297	\$ 1,129,156	\$ 13,077,788	\$ 7,006,208	\$ 6,071,579	1.87
Residential Prescriptive / Complete Systems Replacement / HEER	\$ 3,413,410	\$ 3,439,357	\$ 5,212,803	\$ 454,583	\$ 36,610,907	\$ 4,008,765	\$ 3,042,049	GHG / Environmental Benefits	\$ 1,228,180	\$ 8,623,670	\$ 6,733,642	\$ 12,420,132	\$ 3,964,069	\$ 34,199,794	\$ 56,181,874	\$ 48,015,713	\$ 8,166,161	1.17
Multifamily	\$ 6,760,248	\$ 1,035,848	\$ 567,978	\$ 926,694	\$ 83,416,090	\$ 8,983,137	\$ 9,621,908	GHG / Environmental Benefits	\$ 3,375,618	\$ 8,299,950	\$ 5,094,767	\$ 19,759,360	\$ 1,623,699	\$ 20,881,315	\$ 111,311,904	\$ 34,180,582	\$ 77,131,322	3.26
Elementary Energy Education	\$ 1,209,000	\$ 209,537	\$ 124,784	\$ 223,658	\$ 3,488,639	\$ 387,627	\$ 1,041,960	GHG / Environmental Benefits	\$ 1,050,991	\$ 303,896	\$ 211,617	\$ 1,787,683	\$ 912,843	\$ -	\$ 6,685,205	\$ 2,267,730	\$ 4,417,475	2.95
Res New Construction	\$ 269,808	\$ 135,477	\$ 91,225	\$ 60,913	\$ 3,780,487	\$ 420,054	\$ 826,160	GHG / Environmental Benefits	\$ 93,840	\$ 793,329	\$ 46,699	\$ 1,240,200	\$ 84,810	\$ 1,975,452	\$ 5,584,123	\$ 2,947,432	\$ 2,636,691	1.89
C&I Retrocommissioning	\$ 14,350,917	\$ 414,186	\$ 735,731	\$ 794,319	\$ 9,263,602	\$ 1,002,355	\$ 4,923,461	GHG / Environmental Benefits	\$ 4,412,640	\$ 1,090,705	\$ 7,053,106	\$ 3,188,949	\$ 2,695,383	\$ 1,359,426	\$ 31,484,571	\$ 9,558,154	\$ 21,926,417	3.29
C&I New Construction	#####	\$ 3,756,282	\$ 6,558,377	\$ 1,145,666	\$ 2,625,391	\$ 291,710	\$ 6,658,654	GHG / Environmental Benefits	\$ 4,728,092	\$ 278,864	\$ 6,950,253	\$ 607,593	\$ 4,771,801	\$ 936,477	\$ 45,393,943	\$ 10,715,234	\$ 34,678,709	4.24
Small Business Direct Install / Efficiency	\$ 31,193,942	\$ 8,665,482	\$ 5,213,139	\$ 7,346,248	\$ 9,984,955	\$ 1,965,045	\$ 9,760,926	GHG / Environmental Benefits	\$ 6,901,054	\$ 2,243,052	\$ 14,590,730	\$ 3,312,580	\$ 16,717,772	\$ 2,852,589	\$ 74,129,737	\$ 28,714,466	\$ 45,415,271	2.58

Source: Navigant analysis



Table A-3. Summary of Program Level Benefits, Costs (\$ in 000's) and Utility Cost Test – Jointly Implemented Programs

Program (a)									Costs						Utility Cost Test (UCT), All Utilities Combined			
	Avoided Electric Production	Avoided Electric Capacity	Avoided Electric T&D	Avoided Ancillary	Avoided Gas Production	Avoided Gas Capacity	Other Benefits	Other Benefits	Non-Incentive Costs (Electric)	Non-Incentive Costs (Gas)	Incentive Costs (Electric)	Incentive Costs (Gas)	Net Incremental Costs (Electric)	Net Incremental Costs (Gas)	UCT Benefits	UCT Costs	UCT Test Net Benefits	UCT Test
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	Description	(i)	(j)	(k)	(l)	(m)	(n)	(o) = (b+c+d+e+f+g)	(p) = (i+j+k+l)	(q) = (o-p)	(r) = (o/p)
Home Energy Savings / Single Family Retrofit	\$ 1,175,853	\$ 1,450,043	\$ 952,332	\$ 270,032	\$ 7,333,180	\$ 803,928	\$ 1,092,420	GHG / Environmental Benefits	\$ 1,565,878	\$ 2,495,877	\$ 996,856	\$ 3,642,295	\$ 1,815,297	\$ 1,129,156	\$ 11,985,368	\$ 8,700,905	\$ 3,284,463	1.38
Residential Prescriptive / Complete Systems Replacement / HEER	\$ 3,413,410	\$ 3,439,357	\$ 5,212,803	\$ 454,583	\$ 36,610,907	\$ 4,008,765	\$ 3,042,049	GHG / Environmental Benefits	\$ 1,228,180	\$ 8,623,670	\$ 6,733,642	\$ 12,420,132	\$ 3,964,069	\$ 34,199,794	\$ 53,139,825	\$ 29,005,624	\$ 24,134,201	1.83
Multifamily	\$ 6,760,248	\$ 1,035,848	\$ 567,978	\$ 926,694	\$ 83,416,090	\$ 8,983,137	\$ 9,621,908	GHG / Environmental Benefits	\$ 3,375,618	\$ 8,299,950	\$ 5,094,767	\$ 19,759,360	\$ 1,623,699	\$ 20,881,315	\$ 101,689,995	\$ 36,529,694	\$ 65,160,30	2.78
Elementary Energy Education	\$ 1,209,000	\$ 209,537	\$ 124,784	\$ 223,658	\$ 3,488,639	\$ 387,627	\$ 1,041,960	GHG / Environmental Benefits	\$ 1,050,991	\$ 303,896	\$ 211,617	\$ 1,787,683	\$ 912,843	\$ -	\$ 5,643,244	\$ 3,354,187	\$ 2,289,057	1.68
Res New Construction	\$ 269,808	\$ 135,477	\$ 91,225	\$ 60,913	\$ 3,780,487	\$ 420,054	\$ 826,160	GHG / Environmental Benefits	\$ 93,840	\$ 793,329	\$ 46,699	\$ 1,240,200	\$ 84,810	\$ 1,975,452	\$ 4,757,963	\$ 2,174,068	\$ 2,583,895	2.19
C&I Retrocommissioning	\$ 14,350,917	\$ 414,186	\$ 735,731	\$ 794,319	\$ 9,263,602	\$ 1,002,355	\$ 4,923,461	GHG / Environmental Benefits	\$ 4,412,640	\$ 1,090,705	\$ 7,053,106	\$ 3,188,949	\$ 2,695,383	\$ 1,359,426	\$ 26,561,110	\$ 15,745,400	\$ 10,815,710	1.69
C&I New Construction	#####	\$ 3,756,282	\$ 6,558,377	\$ 1,145,666	\$ 2,625,391	\$ 291,710	\$ 6,658,654	GHG / Environmental Benefits	\$ 4,728,092	\$ 278,864	\$ 6,950,253	\$ 607,593	\$ 4,771,801	\$ 936,477	\$ 38,735,289	\$ 12,564,802	\$ 26,170,487	3.08
Small Business Direct Install / Efficiency	\$ 31,193,942	\$ 8,665,482	\$ 5,213,139	\$ 7,346,248	\$ 9,984,955	\$ 1,965,045	\$ 9,760,926	GHG / Environmental Benefits	\$ 6,901,054	\$ 2,243,052	\$ 14,590,730	\$ 3,312,580	\$ 16,717,772	\$ 2,852,589	\$ 64,368,810	\$ 27,047,415	\$ 37,321,395	2.38

Source: Navigant analysis



With respect to the program specific data used in TRC calculation, several were based on each utility's internal tracking and accounting systems. These include implementation, utility administration and utility incentive costs. Implementation and incentives costs are tracked by program, where each utility admin costs were provided by the respective utility energy efficiency staff. Utility costs for implementing the programs were split between the utilities based on an agreed percentage. For this joint benefit cost analysis, the costs, while split between ComEd, Nicor Gas, Peoples Gas, and North Shore Gas, represent the total costs for implementing the program.

The remaining data points that were reviewed in compiling the joint cost effectiveness calculations are incremental costs and the value of avoided greenhouse gas (GHG) emissions. Incremental costs are the costs associated with participating in the program, before accounting for any incentives. For most of the measures included in the joint programs, the claimed savings are all gas or all electric. In these instances, there is no risk of incremental costs being double counted. However, for a handful of measures that frequently generate both electric and gas savings (e.g. programmable thermostats, envelope measures, whole building projects), Navigant reviewed the input data to ensure that any incremental are included only once in the joint cost-effectiveness calculations. Navigant also made an effort to harmonize the value of avoided GHG emissions included in the joint program benefits at a value of approximate \$27.50 per ton of avoided CO₂.