



Energy Efficiency Portfolio

Jonathan Feipel, Deputy Director August 31, 2010

Warren Ribley, Director

Pat Quinn, Governor

Design Factors

- Stakeholder input and first cycle experience
- Statutory requirements
 - Savings Goals and Budget Restrictions
 - Cost Effectiveness
 - Sectors Public (DCEO), Low Income
 - Integrated Gas and Electric Plan
 - Evaluation
- Natural partnerships with state entities
- Position Illinois to meet the longer term goals by developing a robust EE services industry
- Flexibility to allow market response



CCOOILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

Overview

Integrated Natural Gas & Electricity Energy Efficiency Portfolio

- Integrated: DCEO intends to offer integrated gas/electric energy efficiency programs
 - Statutory requirement
 - Whole building efficiency and lost opportunity
- Statewide: DCEO will offer the same suite of programs across the state
 - ComEd, Ameren, Nicor, Peoples, North Shore
 - No cross subsidization
 - Avoid confusion and possible claims of discrimination
- Evaluation: DCEO evaluator
 - Consistent approach
 - Simplified budgeting



Market Sectors

- Public:
 - Statutory public sector set aside
 - Units of local government
 - Municipal corporations
 - Public school districts (K thru 12)
 - Community Colleges

Continuing to serve additional public sector entities

- Above the 10% statutory requirement
- State and federal facilities
- State Universities



Market Sectors

- **Low Income** (<150% of poverty level):
 - Electric Portfolio
 - Continue to satisfy statutory requirements
 - 6% of total revenues = 24% of DCEO electric budget
 - Natural Gas Portfolio
 - For DCEO to meet its overall 20% of gas portfolio savings requirement, it is limited to a proportionate amount of 24% of budget for low income programs
 - Statutory requirement for gas portfolio requires average 10.6% of total revenues to low income (~ 42% of DCEO gas budget). DCEO still developing # with utilities.
 - DCEO gas budget provides suite of programs that includes 24% of its budget allocated to low income
 - DCEO requires an additional \$2.5 M annually to meet the entire low income gas target
 - Low income share as % of individual utility revenues varies for 7% to 18%



Market Sectors

Market Transformation:

- Ensure sustainable and robust energy efficiency gains within the state
 - Technical assistance
 - Codes
 - Enhanced Implementation for Public Sector
- Support achievement of long term efficiency goals
 - Training Programs
 - Codes
 - Educational programs
- Measure Spillover and count savings



DCEO Energy Savings Goals

- Electricity: Budget Constraints
 - DCEO plans to meet 15% of *Net* statewide goal (155 million kWh per year)
 - 155 million kWh per year reflects 15% in year 1; 11.95% in year 2; 8.5% in year 3
- Gas:
 - Per statute, DCEO plans to meet 20% of the Net statewide goal
 - Annual targets are 2.1, 4.2 and 6.3 million therms
 - 3 yr total 12.6 million therms
 - DCEO plans to levelize savings at 4.2 million therms annually (*Net* savings)

Savings goals as % program areas

Program Area	Electric	Million kWh/yr	Gas	Million therm/yr
Public	83%	128.65	75.3%	3.16
R&D	2.3%	3.57	2.7%	0.11
Low Income	10.4%	16.12	15.6%	0.66
Market Trans.	4.3%	6.66	6.4%	0.27
EM&V	-	-	-	-
Admin.	-	-	-	-
Total	100%	155.00 (Net)	100%	4.20 (Net)



DCEO Gas Budget Approaches



20% Savings Statutory Goal

Approach Selected

- Market Impact
- Existing large scale electric programs
- Utility annual filing still a moving target
- DCEO 3 year levelized budget @ \$13M/yr (total \$39 M)
 - Today 3 year utility filing at \$ 40.2M

% of Net Savings Goal by Utility

	Year 1	Year 2	Year 3	TOTAL
Ameren	40.6%	20.3%	13.5%	20.3%
Nicor	40.6%	20.3%	13.5%	20.3%
Peoples	40.6%	20.3%	13.5%	20.3%
North Shore	40.6%	20.3%	13.5%	20.3%
TOTAL	40.6%	20.3%	13.5%	20.3%



DCEO Gas Budget Approaches

 Limiting DCEO budget to 25% of utility annual filing results in Peoples and North Shore territory goals not met

% of Net Savings Goal by Utility

	Year 1	Year 2	Year 3	TOTAL
Ameren	39.3%	22.1%	16.1%	22.0%
Nicor	30.2%	25.1%	23.5%	25.1%
Peoples	20.4%	18.5%	17.2%	18.2%
North Shore	18.2%	17.9%	17.3%	17.6%
TOTAL	29.0%	22.9%	20.6%	22.7%



Rate Cap and DCEO Budget

- DCEO is allocated up to 25% of the funding cap to administer its programs.
 - **Electric:** Full \$55M per year (\$54.8, \$55.3, \$55.7)
 - **Gas:** Levelized \$13M per year (\$39M versus Cap at ~ \$68M)

Program Area	% DCEO	Electric	Gas	Total
Public Sector	53%	\$29.1	\$6.9	\$36.0
R&D	3%	\$1.7	\$0.4	\$2.1
Low Income	24%	\$13.2	\$3.1	\$16.3
Market Trans.	10%	\$5.5	\$1.3	\$6.8
EM&V	3%	\$1.7	\$0.4	\$2.1
Admin.	7%	\$3.8	\$0.9	\$4.7
Total	100%	\$55.0	\$13.0	\$68.0

DCEO Budget	Breakout	(\$M)
--------------------	----------	-------



DCEO Savings Goals / Budget

Electric

- \$55M/yr
- 155 Million kWh annually
- Net 15% of state savings target in year 1

• Gas 1:

- \$13M/yr
- 4.2 million therms annually
- Net 20% of state savings target over 3 year program

• Gas 2:

- \$15.5M/yr = \$13M/yr + \$2.5M/yr
- DCEO budget for 20% of statutory savings goal + increment to satisfy low income statutory funding requirements
- Additional 0.321 million therms annually, ~ 1.5% portfolio



Evaluation

- DCEO proposes to issue its own RFP for EM&V
 - Consistency
 - Simplify accounting
- Continue 1st Cycle work + gas
- Budgets:
 - Natural gas: 3% of budget = ~\$0.4M
 - Electricity: 3% of budget = ~\$1.7M



New DCEO Portfolio Elements

- Programs:
 - Higher Public incentives
 - Targeted markets
 - Public Housing Authority program
- Market Transformation:
 - Count savings (spillover)
 - Narrowed focus
 - Increased coordination
 - Enhanced implementation
- Expanded R&D

- Gas Program:
 - Integrated
 - Levelized approach to savings and budget
 - 3 year plan
- Administration:
 - Increased staffing
 - Improved database
 - Expanded marketing
- EM&V DCEO contract



CCOILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

Programs

Public Sector

- Markets:
 - Units of local, state and federal government
 - Municipal corporations
 - Public school districts
 - Community Colleges
 - State Universities

- Programs:
 - Standard (Prescriptive)
 - Custom
 - New Construction
 - Retro-Commissioning
 - Lights for Learning



Public Sector: Standard Prescriptive

- Encourage the purchase of high efficiency measures through targeted market incentive offerings
- DCEO core program for kWh and therm savings
- Lessons Learned first three year program
 - Need higher incentive levels
 - Need innovative marketing approaches
- New sub-programs being developed
 - Municipal Energy Efficiency Aggregation
 - Water & Waste Water Treatment Facilities
 - Energy Efficiency for Outdoor Lighting
 - Public Building Categories
 - Educational Facilities



Public Sector: Standard Prescriptive

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$23.95 M	\$24.17 M	\$24.40 M	\$72.52 M	
Portfolio Admin. Costs	\$4.79 M	\$4.83 M	\$4.88 M	\$14.5 M	
Total Costs	\$28.74 M	\$29.00 M	\$29.28 M	\$87.03 M	
Net kWh Savings (millions of kWh)	67.08	67.7	68.36	203.15	
Net Therms (millions of therms)	1.60	1.61	1.62	4.83	
\$/kWh Saved (Program)	\$0.347	\$0.347	\$0.347	\$0.347	
\$/Therm Saved (Program)	\$3.42	\$3.42	\$3.42	\$3.42	

Program TRC: 1.73



Public Sector: Custom

- Based on technical engineering analyses & calculated savings for specific projects
- DCEO core program for kWh and therm savings
- Provides measures and combinations of measures not covered by prescriptive or other programs in the portfolio
- Incentives based on per kWh and per therm value subject to certain caps:
 - May not exceed 50% of incremental cost for retrofits, 100% for replacements
 - Total incentive may be reduced if simple payback below 1 yr



Public Sector: Custom

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$7.91 M	\$8.07 M	\$8.22 M	\$24.20 M	
Portfolio Admin. Costs	\$1.58 M	\$1.61 M	\$1.64 M	\$4.83 M	
Total Costs	\$9.50 M	\$9.68 M	\$9.87 M	\$29.06 M	
Net kWh Savings (millions of kWh)	38.30	39.02	39.82	117.14	
Net Therms (millions of therms)	1.05	1.07	1.09	3.20	
\$/kWh Saved (Program)	\$0.20	\$0.20	\$0.20	\$0.20	
\$/Therm Saved (Program)	\$1.755	\$1.755	\$1.755	\$1.755	

Program TRC: 2.81



Public Sector: New Construction

- Targeted at new construction and major renovations that exceed current Illinois Energy Conservation Code for Commercial Buildings
- Two levels
 - Incentives based on savings beyond code design (or beyond other institutional/legal requirements already above code)
 - Bonus incentives provided for LEED® projects
- Incentives based on per kWh and per therm value designed to achieve greatest level of energy efficiency



Public Sector: New Construction

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$1.83 M	\$1.83 M	\$1.83 M	\$5.49	
Portfolio Admin. Costs	\$0.37 M	\$0.37 M	\$0.37 M	\$1.11	
Total Costs	\$2.20 M	\$2.20 M	\$2.20 M	\$6.60	
Net kWh Savings (millions of kWh)	5.56	5.56	5.56	16.68	
Net Therms (millions of therms)	0.35	0.35	0.35	1.05	
\$/kWh Saved (Program)	\$0.28	\$0.28	\$0.28	\$0.28	
\$/Therm Saved (Program)	\$1.71	\$1.71	\$1.71	\$1.71	

Program TRC: 4.9

Public Sector: Retro-Commissioning

- First Cycle pilot very successful and well received
- Low cost tune-ups and adjustments that improve efficiency of existing public buildings' operating systems
- Focus on building controls and HVAC systems
- Services delivered thru a network of commissioning providers trained in program protocols
- Provide up to 50% of RCx assessment up to cap of \$78,000. Client required to commit to a minimum of \$10,000 for implementation of measures.
- Implementation incentives offered based on per kWh and per therm value up to 50% of incremental cost



Public Sector: Retro-Commissioning

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$1.90 M	\$1.90 M	\$1.90 M	\$5.70 M	
Portfolio Admin. Costs	\$0.38 M	\$0.38 M	\$0.38 M	\$1.14 M	
Total Costs	\$2.28 M	\$2.28 M	\$2.28 M	\$6.84 M	
Net kWh Savings (millions of kWh)	13.62	13.62	13.62	40.86	
Net Therms (millions of therms)	0.372	0.372	0.372	1.116	
\$/kWh Saved (Program)	\$0.14	\$0.14	\$0.14	\$0.14	
\$/Therm Saved (Program)	\$0.85	\$0.85	\$0.85	\$0.85	

Program TRC: 1.63



Public Sector: Lights for Learning

- Provide public education on energy savings, environmental and economic benefits of energy efficient products while providing fund raising opportunity for schools (k thru 12)
- Promotes ENERGY STAR® qualified CFLs and other energy saving measures
- Receive 60% profit of sales and free education assemblies/classroom presentations –heightens awareness
- Expand to include private schools
- Contemplating expansion to gas products



Public Sector: Lights for Learning

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$0.53 M	\$0.53 M	\$0.53 M	\$1.59 M	
Portfolio Admin. Costs	\$0.11 M	\$0.11 M	\$0.11 M	\$0.33 M	
Total Costs	\$0.64 M	\$0.64 M	\$0.64 M	\$1.92 M	
Net kWh Savings (millions of kWh)	1.18	1.18	1.18	3.54	
Net Therms (millions of therms)	NA	NA	NA		
\$/kWh Saved (Program)	\$0.54	\$0.54	\$0.54	\$0.54	
\$/Therm Saved (Program)	NA	NA	NA		

Program TRC: 1.2

Low Income Sector

• Requirement:

- Utilities in coordination with DCEO to present a portfolio of efficiency measures for low income households (<150% of poverty level) proportionate to their share of utility revenues
- Electric: 6% = 24% DCEO budget
- Gas: 6% = 24% DCEO budget (To meet statutory funding requirement an additional \$2.5M/yr must be added to gas budget --- 10.6% = 42.4% of DCEO budget)

- Programs:
 - Direct Install
 Weatherization
 - Affordable Housing Construction / Rehab
 - Public Housing Authority



Low Income: Direct Install - Weatherization Assistance

- Target low income renters & owners with incomes at or below 200% of poverty level
- Builds on existing Illinois Home Weatherization Assistance Program
- Package of measures address refrigerator, CFL, bathroom exhaust fan, air conditioner, furnace, water heater, insulation (gas side).
- Pay for 100% of measures up to predetermined measure limits



Low Income: Direct Install - Weatherization Assistance

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$9.0 M	\$9.0 M	\$9.0 M	\$27.0 M	
Portfolio Admin. Costs	\$1.8 M	\$1.8 M	\$1.8 M	\$5.4 M	
Total Costs	\$10.8 M	\$10.8 M	\$10.8 M	\$32.4 M	
Net kWh Savings (millions of kWh)	8.952	8.952	8.952	26.86	
Net Therms (millions of therms)	0.129	0.129	0.129	0.386	
\$/kWh Saved (Program)	\$1.07	\$1.07	\$1.07	\$1.07	
\$/Therm Saved (Program)	\$9.33	\$9.33	\$9.33	\$9.33	
Program TRC: 0.69 (increases to 0.88 with revised budget +\$2,5M/yr)					

Low Income: Affordable Housing Construction / Gut Rehab

- Target developers of affordable housing as well as owners/renters of affordable housing with incomes at or below 80% of area median income
- Grantees must accept the full set of measures for funding (no individual measures)
- Grant amounts vary by category (substantial rehab, new multi-family, and new single family). Grants within the range of \$4.00/ft² to \$4.50/ft²



Low Income: Affordable Housing Construction/Gut Rehab

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$4.0 M	\$4.0 M	\$4.0 M	\$11.98 M	
Portfolio Admin. Costs	\$0.8 M	\$0.8 M	\$0.8 M	\$2.39 M	
Total Costs	\$4.8 M	\$4.8 M	\$4.8 M	\$14.38 M	
Net kWh Savings (millions of kWh)	2.54	2.54	2.54	7.62	
Net Therms (millions of therms)	0.366	0.366	0.366	1.10	
\$/kWh Saved (Program)	\$0.46	\$0.46	\$0.46	\$0.46	
\$/Therm Saved (Program)	\$8.22	\$8.22	\$8.22	\$8.22	

Program TRC: 0.91



Low Income: Public Housing Authorities

- New Program targeted at extremely low income (30% median); very low income (50% median); and low income (80% median) households
- Program piloted in year 2 & 3 for electric measures only
- Implement full program and expand to gas
- 51,693 housing units & other buildings located in 84 PHAs
- Work closely with HUD's Office of Public Housing and Sustainability Officer and PHAs



Low Income: Public Housing Authorities

Program Metrics					
Year	1	2	3	Total	
Incentive Costs	\$3.40 M	\$3.40 M	\$3.40 M	\$10.22 M	
Portfolio Admin. Costs	\$0.68 M	\$0.68 M	\$0.68 M	\$2.04	
Total Costs	\$4.08 M	\$4.08 M	\$4.08 M	\$12.26	
Net kWh Savings (millions of kWh)	5.29	5.29	5.29	15.87	
Net Therms (millions of therms)	0.135	0.135	0.135	0.405	
\$/kWh Saved (Program)	\$0.56	\$0.56	\$0.56	\$0.56	
\$/Therm Saved (Program)	\$7.95	\$7.95	\$7.95	\$7.95	

Program TRC: 1.06



R&D (Breakthrough Equipment & Devices)

- Allow assistance for breakthrough equipment & devices not included in other programs
- Previous use of funds for LED outdoor lighting
- Potential areas of expenditures:
 - LED and other advanced lighting
 - Geothermal Heat Pumps
 - Advanced Boilers
 - Waste Heat Recovery
 - Combined Heat and Power
- Limited to 3% of budget (approx \$2M)



R&D

Program Metrics				
Year	1	2	3	Total
Incentive Costs	\$2.03 M	\$2.03 M	\$2.03 M	\$6.09 M
Portfolio Admin. Costs	\$0.46 M	\$0.46 M	\$0.46 M	\$1.38 M
Total Costs	\$2.49 M	\$2.49 M	\$2.49 M	\$7.47
Net kWh Savings (millions of kWh)	3.12	3.12	3.12	9.36
Net Therms (millions of therms)	TBD	TBD	TBD	TBD
\$/kWh Saved (Program)	\$0.69	\$0.69	\$0.69	\$0.69
\$/Therm Saved (Program)	TBD	TBD	TBD	TBD

Program TRC: 1.0 (electric)



Market Transformation

Objectives:

- Provide technical assistance & educational programs to support achievement of long term efficiency goals
- Educate energy professionals & decisionmakers to ensure effective implementation of energy efficiency programs
- DCEO intends to measure savings achieved from some of the market transformation programs

- Programs:
 - Small Energy Design Assistance (SEDAP)
 - Building Operator Certification (BOC)
 - Building Codes Enforcement
 - Building Industry Training & Education (BITE)
 - Enhanced Implementation
 - Large Customer Energy Assistance (LEAP)



Market Transformation: Smart Energy Design Assistance Program (SEDAP)

- Achieve long-term and low-cost efficiency improvements thru design assistance and energy efficiency analyses
- Assist clients in taking advantage of prescriptive and custom programs (DCEO and Utility)
- To date: detailed design assistance > 500 clients and information/support to over 2,000 clients
- Spillover savings not counted in other programs to be identified (new this year). Energy saving projects that do not receive EEPS incentives



Market Transformation: Building Operator Certification (BOC)

- Targeted market includes building operators, building engineers, maintenance staff and facility managers
- Targets facilities over 50,000 sq. ft.
- Nationaly recognized program that provides tips & tools to:
 - Maximize efficiency
 - Reduce energy usage
 - Improve comfort
- Includes 8 full day courses covering such topics as:
 - HVAC Facility Electric Systems Lighting Indoor Air
 - Also includes 5 in-facility projects



Budget/Savings – SEDAP & BOC

- The cost of these market transformation programs are embedded as portfolio admin. costs in public sector, low income and R&D programs
- Savings are spillover savings

	Annual Electric Budget	Annual Gas Budget	Savings Electric (millions kWh)	Savings Gas (millions therms)
SEDAP	\$2.6 M	\$0.5 M	4.0	0.2
BOC	\$0.15 M	\$0.08 M	2.5	0.099



Market Transformation: Codes, LEAP, BITE

• Codes Training:

- Programs to ensure Illinois achieves 90% compliance with applicable advanced codes as required by U.S. DOE
- Develop and implement a comprehensive plan that will include training, enforcement, baseline development, annual tracking

LEAP:

- Provide manufacturing companies, large hospitals, and other large customers with total energy cost optimization & energy management planning (assistance in identifying prescriptive and custom program opportunities)
- Target customers with energy costs greater than \$500,000 per year – all Illinois companies eligible (within utility territories)



Market Transformation: Codes, LEAP, BITE

BITE:

- Large range of training programs for all groups related to the design, construction, rehab, operation and maintenance of buildings and industrial facilities (includes industrial process improvements)
- Provide program implementation assistance
- Costs are embedded as portfolio admin costs in public sector, low income, and R&D programs
- Enhanced Implementation
 - SAG and evaluator recommended DCEO increase funding for technical assistance to governmental entities to assist them in applying for EEPS and financing options.
 - RFP to solicit applications for Project Implementation Assistance and enhanced implementation
 - Performance-based grants



Market Transformation: Codes, LEAP, BITE

Budgets

	Annual Electric Budget	Annual Gas Budget	Total Annual Budget
Codes	\$0.15 M	\$0.08 M	\$0.23 M
LEAP	\$0.40 M	\$0.10 M	\$0.50 M
BITE / Enhanced Imp.	\$2.18 M	\$0.58 M	\$2.76 M
Total	\$2.73 M	\$0.76 M	\$3.49 M



Portfolio Metrics

	Yr 1	Yr 2	Yr 3
Incentive Costs (\$ M)	\$54.55	\$54.93	\$55.31
Portfolio Admin. Costs	\$13.31	\$13.38	\$13.46
Total Cost	\$67.86	\$68.31	\$68.77
Net kWh 10 ⁶ Saved	151.88	153.22	154.68
(% of Goal)	(14.7%)	(11.8%)	(8.6%)
Gross kWh 10 ⁶ Saved	211.92	213.79	215.83
(% of Goal)	(20.4%)	(16.5%)	(12%)
Net Therms 10 ⁶ Saved	4.30	4.30	4.30
(% of Goal)	(40.6%)	(20.3%)	(13.5%)
Gross Therms 10 ⁶ Saved	5.12	5.12	5.12
(% of Goal)	(48.3%)	(24.2%)	(16.1%)

Portfolio TRC: 1.58

Self-Directing (Gas Program)

Natural gas statute

- Large gas users may apply to DCEO to be designated a "Self-directing Customer" (SDC)
- Large users that use 60% or more of their natural gas as a feedstock may also apply to be exempt from the natural gas efficiency portfolio

Approved entities must:

- Create an energy efficiency reserve account, equal to the lesser of 2% of the customer's cost of gas or \$150,000
- Use such funds to undertake energy efficiency measures
- Annually report to DCEO on expenditures and energy savings.

Status

30 large gas users were approved as Self-directing Customers
 3 were approved as Exempt Customers (gas as a feedstock)
 758 million the mass were exempted from the Natural Gas



dcoILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

Outreach

Innovative Project Financing

- Performance Contracting
 - Integrating EPC technical assistance Portfolio
 - Coordinate with SEDAP and Public Housing Authority program
- Illinois Treasurer's Office
 - Low-interest loans to business, non-profit, & local government
 - Eligibility criteria include proof of participation in EEPS
- Illinois Finance Authority
 - P.A. 96-817 authorized the IFA to provide moral obligation loan guarantees for energy efficiency projects
 - Must apply for other available incentives before applying to IFA
- Property Assessed Clean Energy (PACE)
 - P.A. 96-481 authorized municipalities to finance energy improvements through property taxes
- On-bill financing
 - P.A. 96-0033 required utilities to offer on-bill financing programs for residential customers and small-business customers



Marketing Strategy

- Concentrating limited resources on the greatest opportunities to achieve program participation in order to maximize energy savings using the allotted program funds
- Traditional marketing strategies
- Enhanced marketing:
 - Targeted sales and promotions
 - Project implementation assistance
 - Leveraging of other funds
 - Promotion of innovative financing



Multi-Layered Marketing

- DCEO EEPS brand
- DCEO Regional offices/staff
- Utility External Affairs and Account Managers
- Partner with statewide organizations such as ILARC, Illinois Municipal League, Metropolitan Mayor's Caucus
- Strengthened trade ally network
- State of Illinois press office
- Elected officials to do project announcements
- DCEO Office of Energy website
- DCEO social networking
- Participate in select trade shows
- Increased outreach staff
- Targeted market sectors







www.illinoisenergy.org