DUQUESNE LIGHT

Act 129 Collaborative Exchange Meeting

Duquesne Light
Our Energy…Your Power

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Act 129 Collaborative Exchange Meeting

April 3, 2009

Agenda

I. Welcome

II. Roll call of phone and webinar participants

III. Introduction of Duquesne Light/MCR Team

IV. Overview of Pennsylvania Act 129

V. Duquesne's approach to compliance plan development

VI. Subsequent Subgroup Meetings

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What Brought Us Here?

- Energy efficiency and reduction of peak electricity demand has become a required part of the business of electric distribution companies with the passage of Act 129.

- That business will have the following impacts:
  - Assist customers in reducing electricity bills,
  - Allow customers to make informed choices about their use of electricity,
  - Lessen the impact of energy consumption on the environment,
  - Decrease the cost of meeting new demand for electricity.

- To be optimally successful, that business function and process must incorporate the input of the stakeholders in the industry.

Who is this group and what is our intent today?

- The stakeholders are a diverse group, and include the following:
  - Consumers
  - Consumer advocates
  - State and local government
  - Chambers of commerce
  - School districts
  - Community based organizations
  - Environmental groups
  - Conservation service providers
  - Vendors for energy efficiency and demand response products and technologies
- The goal for this meeting is to provide an overview of Act 129 and what it will mean to the stakeholders and then to establish the communication channels that will create the mixture of energy efficiency and demand reduction programs that will best match the needs of this group and meet the targets contained in Act 129.

What happens with this process after today?

- After we provide an overview of Act 129 and our activities to date, we will discuss the formation of smaller sub-groups that will meet again to provide input in the planning and development of our overall program.

- Those subgroups will focus largely on customer segments and will allow for a more productive exchange of information on the issues that concern each of the stakeholders.

- Some of the stakeholders may want to be on multiple sub-groups.

ROLL CALL

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Duquesne's Act 129 Team

- Internal Team Member Disciplines
  - Regulatory
  - Legal
  - Rates and Tariff Services
  - C & I Customers
  - Residential Customers
  - Universal Services
  - Communications
  - IT and Metering
  - Finance

- External Team
  - Duquesne engaged the services of MCR Performance Solutions to provide energy efficiency, conservation and demand response technical expertise and regulatory support for the development and filing of the Plan.

Overview of Act 129: What is Act 129 all about?

- Passage of Act 129 created a mandate for energy efficiency and peak demand reduction across Pennsylvania

- We join several other mid-Atlantic and Northeastern states who also have mandated programs:

New York	Vermont	Connecticut
Maryland	Virginia	North Carolina
Ohio		New Jersey

What are the goals?

- The Act requires the achievement of 1.0% and 3.0% reductions in consumption in our service territory by May 31, 2011 and May 31, 2013 respectively, as measured against the June 2009 – May 2010 kWh sales forecast.
  - 140,885,117 kWh by 2011
  - 422,565,351 kWh by 2013
- The Act requires the achievement of a 4.5% reduction by May 31, 2013 in peak demand in our service territory as measured against the 2007 June – September average of the 100 hours of peak demand.
  - 113 MW in the summer of 2012
- Of these targets, 10% of the reductions must come from government, municipal, educational and non-profit accounts.

What is the PLAN to get there?

- The Act requires each EDC to file with the PUC by July 1, 2009 an Energy Efficiency and Conservation and Demand Response (EEC/DR) Plan.

- The PUC has required that the Plan include at least one energy consumption reduction and one demand reduction program to each customer class (residential, commercial, industrial.)

- There must be specific measures for low-income households (measured at below 150% of poverty level) and these must be in addition to LIURP expenditures already made by the EDCs.

- The Plan must demonstrate that each program measure is cost-effective.

What is the PLAN to get there?

- A contract with one or more conservation service provider (CSP), selected by competitive bid, and to be approved by the PUC will be included in the Plan. The CSP is defined as an entity that provides information and technical assistance on measures to enable a person to increase energy efficiency or reduce energy consumption.

- An estimation of the implementation costs will be included in the Plan.

- The Plan will set forth a cost recovery mechanism that assigns the costs of specific programs to the class of customers that benefit from them and allocates common costs across the customer classes using industry standard allocation methods.

What is the PLAN to get there?

- Evaluation, measurement and verification procedures that will demonstrate the achieved kW and kWh savings from the programs will be included in the Plan.

- The results of the Plan will be subject to annual, independent evaluation, and modifications, where appropriate, may be recommended to improve its cost-effectiveness or impact. That review will be conducted by a state-wide independent evaluator engaged by the PUC.

What happens if we DON'T achieve the goals?

- The legislation provides for mandatory penalties of between $1 million and $20 million to be levied against an EDC that does not succeed in meeting the targeted reductions.

- Penalties or not, Duquesne Light has an outstanding record of success in major regulatory initiatives and expects and intends to continue on that path.

  - Duquesne Light was the first EDC to complete its recovery of stranded costs after deregulation and it's customers enjoyed several years of reduced rates following the end of rate caps.

  - Duquesne has negotiated four POLR plans that included fixed and reasonable generation rates for its residential and small business customers.

  - Duquesne continues to support the revision of the RPM in PJM to achieve more economical capacity charges for its default customers.

Which programs will qualify for inclusion in Duquesne's plan?

- Measures that will get PUC approval MUST be cost effective as measured by a Total Resource Cost Test, the particulars of which are being developed by the PUC.
- This test includes ALL expenditures on a program measure, both what the customer contributes and what Duquesne Light would contribute.
- The ultimate plan to be approved should represent an array of programs that optimize the available funding to achieve the greatest energy and peak demand savings.

How will the programs be administered and implemented?

- That will depend on the nature of the programs that are included in the approved plan. Some may be implemented as turn key projects, some as in-house projects and some in combination.

- A variety of marketing and financial incentive tools will be used, depending upon the ultimate mix of program measures and the targeted customer bases for each measure.

Where does the funding for the programs come from?

- Act 129 sets annual spending on the programs at 2% of the EDC's 2006 total retail revenue. For Duquesne that equates to a little under $20 million per program year.
- Law provides for current recovery of these dollars from customers classes relative to the dollars expended on the programs for each class.
- Duquesne is also studying the stimulus package for opportunities to take advantage of funding for energy efficiency that would allow for a broader implementation of our programs and greater reductions in energy use and demand.

How are energy reductions verified?

- For some program measures, there are industry standard “deemed savings” associated with the certain prescriptive efficiency technologies. A Technical Reference Manual is under development by the PUC to be used as a guide for quantifying the deemed savings associated with a number of energy efficiency measures and technologies.

- Savings from customized measures are verified through inspections, software modeling, engineering studies, pre- and post- measure metering and other types of validation methodologies.

- EDC’s Measurement and Verification processes, or M&V, will be the basis for demonstrating the achievement of the targeted reductions.

How are the measures that get into the Plan identified?

- Technical and statistical analysis of our customer base.
- Identification of cost-effective measures.
- Input from stakeholders.

EE Program Planning & Implementation Process

- Residential
  - Single-Family
  - Multi-Family
  - Mfg Housing
- Commercial
  - 10 Building Types
- Industrial
  - 16 Market Segments

- Technical Potential
- Economic Potential
- Achievable Potential
- ID key measures & markets

- Communicate findings from previous steps
- Evaluate potential delivery approaches
- Establish subgroups
- Collect input on measures & markets

- Finalize measures & markets
- Develop goals & budgets
- Implementation planning
  - Delivery org.
  - Marketing Plan
  - Processes (incentives, audits, etc)
  - Verification Plan
  - Procedural Guidelines

- Training
- Collateral material
- Tracking, processing, reporting

Development of Major Modeling Assumptions

Major Planning Inputs and Modeling Assumptions

- Residential Customers
  - DLCo sector summary data
    - 2007 – 2008 customer, energy and demand statistics
    - 2009 – 2013 forecast customer, energy and demand statistics
  - 2006 American Community Survey and 2000 Census (county housing vintages and dwelling types.
  - Analysis of (Pennsylvania) building construction codes & standards
- Commercial Customers
  - DLCo 2007 - 2008 customer account level detail – monthly & annual maximum demand (kW) and energy consumption (kWh); SIC Codes
  - Manual SIC coding brought SIC code data to 99% of energy use
  - Segment data was further adjusted based on secondary research:
    - 2006 County Business Patterns (NAIC proportional allocation)
    - U.S. DOE EIA (energy use by building type)
    - National Center for Educational Statistics (schools data)

Development of Major Modeling Assumptions – continued -

- Industrial Consumer Base
  - DLCo 2007 - 2008 customer account level detail – monthly & annual maximum demand (kW) and energy consumption (kWh); SIC Codes
  - Manual SIC coding brought SIC code data to 85% of energy use
- Energy Efficiency Technology (Measure):
  - Residential Measures: Lighting, appliances, HVAC, building shell, water heating, other (57)
  - Commercial Measures: Lighting (interior/exterior), HVAC (DX/chillers), Building Shell, control technologies, refrigeration, office equipment (78)
  - Industrial Measures: Compressed air systems, fans, pumps, control technologies, power management, process optimization (136)
  - Measure definition is aligned with regional weather characteristics and adoption by market segment (applicability, saturation, and feasibility)
  - Measure metrics include annual energy savings, peak period demand reductions, estimated operating life, annual hourly savings profiles and incremental cost (3,298 unique measure/building applications)
  - All assumptions are adjusted to be consistent with the PA PUC TRM (where applicable)

Customer Sector Information - Residential

Residential Housing Stock	2011 Dwellings	
Single Family Post-1978	58,411	10.9%
Single Family Pre-1978	329,561	61.7%
Multi-Family Post-1978	20,984	3.9%
Multi-Family Pre-1978	118,393	22.2%
Mobile Homes Post-1978	996	0.2%
Mobile Homes Pre-1978	5,622	1.1%
Total Post-1978	80,391	15.1%
Total Pre-1979	453,577	84.9%
	533,968	

Customer Sector Information - Commercial

Commercial Building Stock

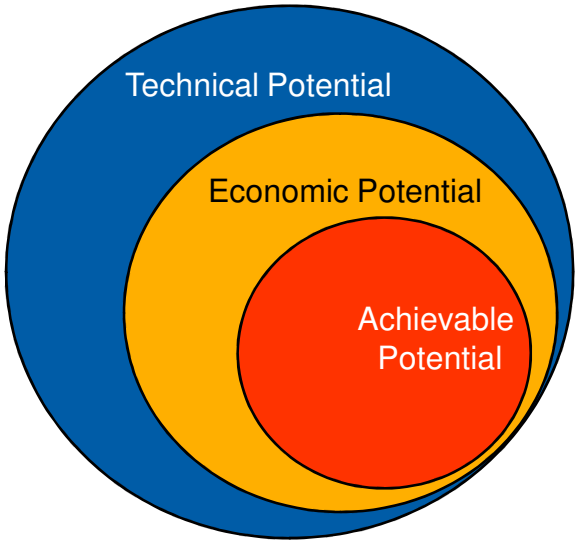
	Energy (kWh)	Floor Space ft^2	kWh/ft^2	
Colleges	479,694,840	40,242,856	11.92	7.0%
Food Stores	205,583,503	3,884,798	61.74	3.0%
Health Care	1,164,973,183	37,398,818	31.15	17.0%
Lodging	68,527,834	4,052,504	16.91	1.0%
Large Offices	2,055,835,029	107,635,342	19.10	30.0%
Misc	342,639,171	26,458,623	12.95	5.0%
Refrigerated Warehouses	6,852,783	370,421	18.50	0.1%
Retail Stores	719,542,260	46,936,873	15.33	10.5%
Restaurants	342,639,171	8,763,150	39.10	5.0%
Schools	239,847,420	27,132,061	8.84	3.5%
Small Offices	1,096,445,349	64,801,735	16.92	16.0%
Warehouses	130,202,885	17,571,240	7.41	1.9%
	6,852,783,429			100.0%

Customer Sector Information - Industrial

Market Segment	2011 Energy (kWh)	
Food Processing	83,021,048	2.8%
Textiles/Apparel	886,599	0.0%
Lumber/Furniture	4,686,239	0.2%
Paper	462,822	0.0%
Printing	38,469,324	1.3%
Chemicals	577,320,680	19.8%
Petro/Coal	4,790,976	0.2%
Rubber/Plastics	46,538,528	1.6%
Stone/Clay/Glass	214,176,577	7.3%
Prim Metals	1,588,592,204	54.5%
Fab Metals	112,223,274	3.9%
Ind Mach	77,479,766	2.7%
Electronics	113,514,590	3.9%
Transp Equip	24,618,855	0.8%
Instruments	5,350,047	0.2%
Misc Mfg	21,993,046	0.8%
Industrial $/kWh	2,914,124,575	100.0%

Achievable Energy Efficiency Potential

- Technical and economic potentials are produced using quantifiable algorithms
- "Achievable Potential" is a qualitative assessment incorporating:
  - Customer probability for acceptance (payback period based)
  - Maximum annual capture rates
  - Scaling or calibration to previous program results
  - Aware & willing population assumptions



Forecast Annualized Energy Efficiency Potential and Program Budgets

DLCo Forecast Annualized Energy Efficiency Potential and Program Budgets

	(2011) Sector Use kWh	Technical Potential kWh	Economic Potential kWh	Achievable Program Potential kWh	Achievable Program Potential kW	Program Costs	Program Levelized Cost/kWh	TRC
Residential	4,276,840,291	633,075,861	281,757,422	57,019,772	47,478	$5,968,024	$0.00902	3.7
Commercial	6,852,783,429	302,424,310	216,110,803	67,973,214	16,010	$9,641,018	$0.02231	2.1
Industrial	2,914,124,575	853,866,072	703,725,145	32,056,756	4,951	$3,984,097	$0.01265	3.6
Composite	14,043,748,296	1,789,366,243	1,201,593,371	157,049,742	68,440	$19,593,140	$0.01495	2.9
			% Annual Consumption	1.1%				

		Annual kWh Use	Achievable kWh	Impact %	Program Funding	% Costs
Residential	30%	4,276,840,291	57,019,772	1.3%	$5,968,024	30.5%
Commercial	49%	6,852,783,429	67,973,214	1.0%	$9,641,018	49.2%
Industrial	21%	2,914,124,575	32,056,756	1.1%	$3,984,097	20.3%
		14,043,748,296	157,049,742		$19,593,140	

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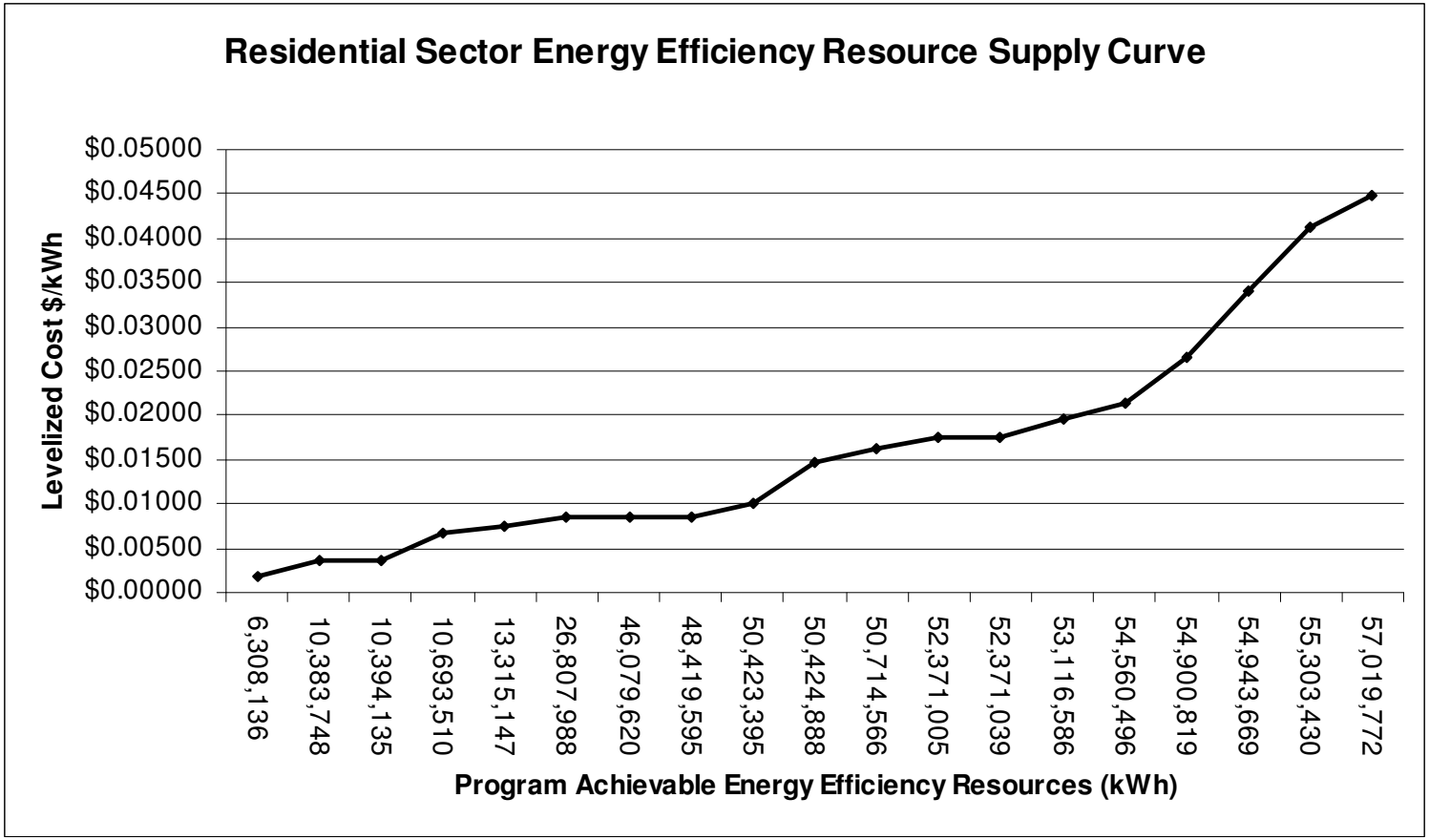
Umbrella Programs

Residential Sector Achievable Potential Supply Curve



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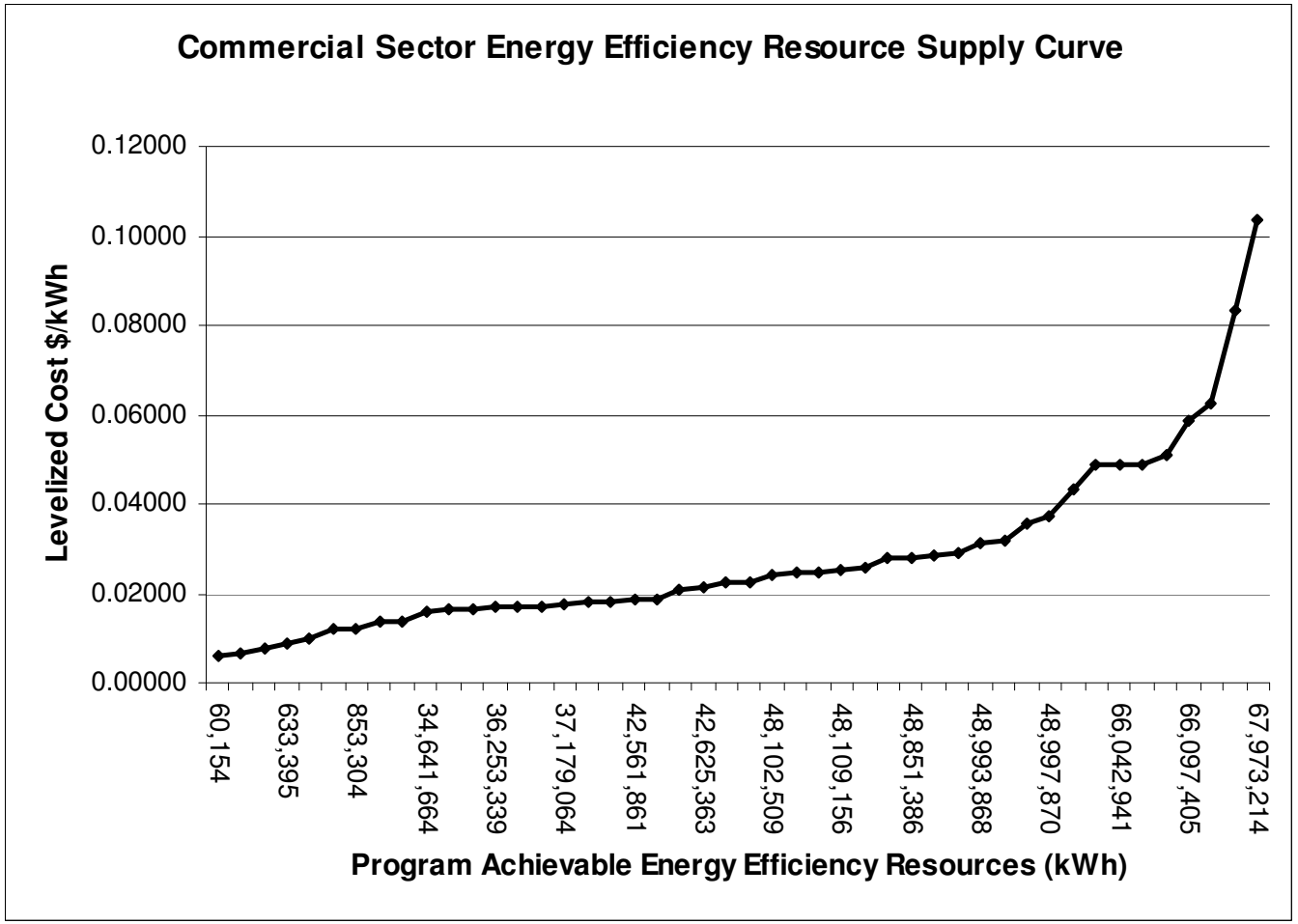
Umbrella Programs (continued)

Forecast Residential Measure Impacts Modeled

EnergyStar Clothes Washers
EnergyStar Dehumidifier
EnergyStar Dishwasher
EnergyStar Freezer
EnergyStar Fridge
EnergyStar Room Air Conditioner
Refridgerator Recycling
Blue Line Innovations PowerCost Monitor
Clothes Dryer
ES Computers / monitors
ES Televisions
Reduce Standby Wattage
Cooling Equipment (SEER 14 / 15 / 16)
Cooling Equipment Maintenance
Direct Evaporative Cooler
Duct Repair
Duct Repair (CAC HP Cooling)
High efficiency fan - heating / cooling
Programmable Thermostat
Whole House Fans
Ceiling Insulation
Duct Insulation
Infiltration Reduction
Wall Insulation
Energy Star Windows
CFLs (5-wattages / hard-wire and screw-in)
Indoor Fixture
Outdoor Fixture
Torchieres
Linear Fluorescent T5/T8
Occupancy sensor
High Efficiency Pool Pump and Motor
Faucet Aerator
HE Electric Water Heater
Low Flow Showerhead
Pipe Wrap
Solar Water Heat

Umbrella Programs (continued)

Commercial Sector Achievable Potential Supply Curve



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Umbrella Programs (continued)

Forecast Commercial Measure Impacts Modeled

Lighting Measures
- CFLs (4-Sizes / hard-wired and screw-in)
- Interior Metal Halide (4-Sizes)
- Exterior Pulse Start Metal Halide (3-Sizes)
- Linear Fluorescent T5/T8 (4-foot and 8-foot / fixture / lamp / ballast retrofit)
- High-Output T5 4-Lamp Hi-Bay fixture
- Reflectors with Delamping, (4 and -foot lamp removed)
- Interior High-Intensity Discharge (HID) Fixtures (3-Sizes)
- Exterior Metal Halide
- Exterior Pulse Start Metal Halide
- Photocell Control / Time Clock
- Electronic Ballast, Dimming (w/daylighting)
- LED Exit Sign
- Occupancy Sensor - (lighting and plug-load)

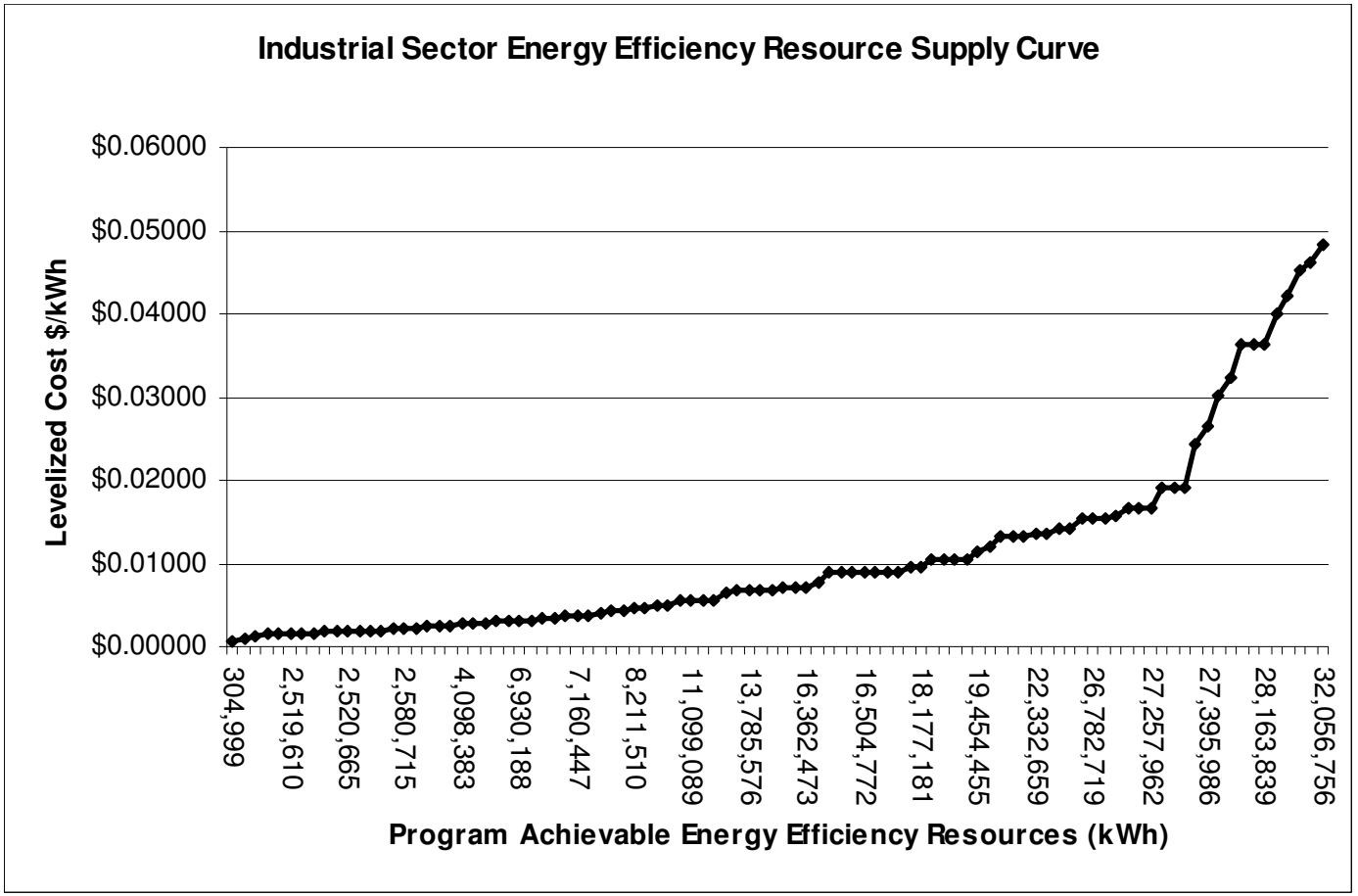
Space Cooling Measures
- Single Package AC <65 kBtuh, SEER 14 - Base SEER 13
- Split-System AC <65 kBtuh, SEER 14 - Base SEER 13
- SS/SP AC & HP 65-135 kBtuh, EER 12.0 - Base EER 10.1
- SS/SP AC & HP 135-240 kBtuh, EER 12.0 - Base EER 9.7
- SS/SP AC & HP 240-760 kBtuh, EER 14.0 - (W/C) Base EER 10.1
- SS/SP AC & HP >760 kBtuh, EER 10.8 - Base EER 9.3
- HE Chiller - 0.51 kW per Ton, 500 Tons, Base 5.8 kW/Ton
- Cooling Cir. Pumps - VSD
- Cool Roof (DX and Chiller)
- Reflective Window Film
- Programmable Thermostat
- HVAC Tune Up and Diagnostics (DX and chillers)
- Evaporative Pre-Cooler (DX)
- Air Handler Variable Speed Drives

Refrigeration Measures
- Replace Single Line Compress System w/Multiplex system
- Permanent-Split Capacitor (PSC) Evaporator Fan Motor
- Electronically Commutated (ECM) Evaporator Fan Motor
- Efficient Low Temperature Compressor EER >= 5.2
- Efficient Condenser Added to Standard Multiplex System
- Electronically Commutated (ECM) Evaporator Fan Motor, Walk-in Cooler
- Anti-Sweat Heater Controls - Low Temp Glass Door Case
- New Glass Doors w/ECM Fan Motor, T8 Lamps and Electronic Ballasts
- Floating Head Pressure Controller - Multiplex Compress
- Night Covers for Vertical and Horizontal Display Cases
- Strip Curtail on Walk-in Cooler Doorway
- Evaporator Fan Motor Controller for Walk-in Cooler

Office Equipment
- Power Management Enabling
- Purchase LCD Monitor
- Network Power Management Enabling
- Power Management Enabling
- External Hardware Control
- Nighttime Shutdown

Umbrella Programs (continued)

Industrial Achievable Potential Supply Curve



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Umbrella Programs (continued)

Forecast Industrial Measure Impacts Modeled

All Commercial Measures
Compressed Air Systems
- Operations and Maintenance
- Controls
- System Optimization
- Sizing
- Motors, motor practices and variable speed drive

Fan Systems
- Operations and Maintenance
- Controls
- System Optimization
- Sizing
- Motors, motor practices and variable speed drive

Pump Systems
- Operations and Maintenance
- Controls
- System Optimization
- Sizing
- Motors, motor practices and variable speed drive

Power Recovery
Refinery Controls
Energy Star Transformers
Optimize Drying Process
Bakery - Process (Mixing) - O&M
O&M - Drives Spinning Machines
Air Conveying Systems
Replace V-Belts
Gap Forming Paper Machine
High Consistency Forming
Optimization Control PM
Efficient Practices Printing Press
Efficient Printing Press (fewer cylinders)
Light Cylinders
Clean Room - Design and Control
Process Controls (batch + site)
Process Optimization
O&M - Extruders/Injection Moulding
Extruders/Injection Moulding-Multipump
Direct Drive Extruders
Injection Moulding - Impulse Cooling / Direct Drive
Efficient Grinding
Efficient Drives - Rolling
Drives - Scheduling
Base Heating
Bakery - Process
Drying (UV/IR)
Heat Pumps - Drying
Top-Heating (glass)
Efficient Electric Melting
Intelligent Extruder (DOE)
Near Net Shape Casting
Heating - Process Control
Efficient Curing Oven
Heating - Optimization Process (M&T)
Heating - Scheduling
Efficient Desalter
New Transformer - Welding
Efficient Processes (welding, etc.)
Process Control
Power Recovery
Refinery Controls
Membranes for Wastewater

Umbrella Programs and Sub-Programs by Customer Sector

- **Residential**
  - Low-Income / Weatherization
  - Retrofit / New Construction
- **Commercial**
  - Office Buildings
  - Health Care
  - Retail Stores & Restaurants
  - Education
  - Local Government Agencies
- **Industrial**
  - Primary Metals (Steel / Copper / Aluminum)
  - Chemicals
- **Demand Response** (multiple sectors and technologies)

Discussion of Model

Demand Response Findings

- PUC requires that one demand reduction program is offered in each customer class
- Benefits are significant in short term and long term, including
  - More efficient use of electric system in short term
  - Defer or displace additional generation, transmission and distribution capacity in the long term
  - Improve system reliability
  - Satisfy customers with additional energy services
- Local experience exists with demand response
  - DLC pilot program with residential air conditioner cycling switches
  - Curtailment service providers acting in wholesale markets of PJM
- Significant opportunities remain for programs serving all customer classes and various end uses including:
  - Air conditioning in residential and commercial facilities
  - Lighting in commercial and industrial facilities
  - Refrigeration in commercial and industrial
  - Industrial process
  - Backup generators
- Program options include:
  - Direct control (dispatchable)
  - Indirect control (voluntary/economic)

Contact Information

Michele Sandoe
Director, Customer Care
412.393.4027
Act129Feedback@duqlight.com