Table 1. Summary of Existing EDC Demand Side Response (DSR) Programs: Large C&I

EDC	Program	Description; Participation Levels (#Customers; MWh Enrolled); Event Responses (Participation Trends-Last Yr.)	Eligible Participants	Special Requirements	Tariff (Y/N)
PPL **2004**	-- **Interruptible Service – Economic Provisions –**	**--** Permits PPL to request customers to reduce load for economic conditions. In exchange, those customers receive significant rate discounts. Economic load control events are limited to not more than 10 hours per occasion and not more 5 occasions per year. Other limitations exist in combination with Interruptible Service – Emergency Conditions (see below). Total of 67 customers in 2004; 2007 53 customers in 2007.	-- C&I Rate Schedules IS-P; and IS-T	-- Interval Meter & 1,000 kW of interruptible load. Program is closed to new applicants.	--Yes
	-- Interruptible Service – Emergency Provisions	-- Permits PPL to request customers to reduce load for emergency conditions. In exchange, those customers receive significant rate discounts. Emergency load control events are limited to not more than 10 hours per occasion. The total of economic (see above) and emergency load control events is limited to not more than 15 per calendar and not more than 5 per month. Total of 72 customers in 2004; 2007 58 customers in 2007	--C&I Rate Schedules IS-P; and IS-T	-- Interval Meter & 1,000 kW of interruptible load. Program is closed to new applicants	--Yes
	-- Price Response Service –	-- Permits customers to respond to market price signals with a portion of their load. Note that interruptible customers can also take price response service (Rate Schedule PR-2). Total of 9 firm customers in 2004; For the purposes of this summary, interruptible customers are included in the Interruptible program above. 2007 7 customers in 2007	--C&I Rate Schedule PR-1	-- Interval meter and communications link to PPL. Customers must have monthly max demand of 2000kw or greater and are served under Rate Schedule LP-4, LP-5, or LP-6. Program is closed to new applicants.	-- Yes
	-- Off-Peak Space Conditioning/Water Heating --	-- Permits customers to do space conditioning and/or water heating at off-peak rates through a separate sub-meter. Separate Bill charge: $14.65/month, Distribution Charge- .387 cents/kWh, plus CTC, ITC. -- Capacity/Energy Charge -2.073 cents/kWh (As of 1/07-12/07). Billing KW resulting from usage during on-peak hrs billed at Rate Schedule Charges. -- On-peak hrs-7am-3 pm, 8 am -4 pm, or 9 am-5 pm local time at customer option; PPL on-peak-7am-9 pm. 506 customers in 2007	Rate Schedule LP-4	Separate TOU sub-metering. Program is closed to new participants.	-- Yes
	-- Time of Use Billing --	-- Billing KW is average # KW supplied during 15 min. period of maximum use during on-peak hrs of current billing period. Permits customers to shift demand to off-peak periods to reduce billing demand. 5 customers in 2007 -- On-peak hrs-7 am-3 pm, 8 am -4 pm, or 9 am-5 pm local time at customer option; PPL on-peak-7am-9 pm. $14.65/month.	-- Rate Schedules LP-4,LP-5, LP-6, CRR, LPEP	-- Separate TOU sub-metering. Program is closed to new participants.	-- Yes
2007	2007 No Changes	2007 No Changes to Description- Updates on Customer Participation Numbers	2007 No Changes	2007 No Changes	2007 No Changes

Table 2. Summary of Existing EDC Demand Side Response (DSR) Programs: Small Commercial/Residential

EDC	Program	Description; Participation Levels (#Customers; MWh Enrolled); Event Responses (Participation Trends-Last Yr.)	Eligible Participants	Special Requirement	Tariff (Y/N)
PPL **2004**	-- **Demand Side Response Rider – Residential (Experimental) (Supplement No. 23 & 42)**	-- Provides eligible residential customers with an opportunity to shift energy usage away from peak demand hours that can occur during the summer months when wholesale electricity prices are high. Takes unbundled generation rates approved in the settlement and further unbundles them during the months June through September into on-peak and off-peak rates of approximately 8 cents on-peak and 3 cents off-peak. Program was introduced in the summer of 2002 to approximately 22,000 residential customers in Allentown/Bethlehem. Consumer Education on equipment energy use and possible actions to use the rate to save money was provided to all eligible customers. A total of 21 customers participated during 2002. Program was expanded to all of the Allentown/Bethlehem area and to Lancaster and Harrisburg areas in 2003 with a total number of participants increasing to 265.	--Residential Rate Schedule RS	-- Automatic Meter Reading device & monthly energy usage of 1000 kwh or greater during each of the months June, July, August, and September. -- Customers may not receive Off-Peak Water Heating or Separate Water Heating Service under Rate Schedule RS. -- Limited to 300 eligible customers.	--Yes Filed 2/15/02 --Approved 4/11/02; # participants increased 200 to 300 on 6/1/03.
2007	2007 No Change	2007 No Changes to Description- Updates on Customer Participation Numbers 2004 – 217 participants at year end 2005 – 324 participants at year end 2006 – 284 participants at year end	2007 No Changes	2007 No Changes	2007 Changes --Approved 12/2/04 to extend pgr. availability to 9/30/07. -- Filed 8/2/06 to extend into 2008 and 2009 with # participants increasing to 600 and eliminate cap on # of participants thereafter. Approval pending.

Table 2. Summary of Existing EDC Demand Side Response (DSR) Programs: Small Commercial/Residential

EDC	Program	Description; Participation Levels (#Customers; MWh Enrolled); Event Responses (Participation Trends-Last Yr.)	Eligible Participants	Special Requirement	Tariff (Y/N)
PPL 2004	--Residential Thermal Storage	-- Provides eligible residential customers with an opportunity to shift energy usage for space heating and water heating to off peak periods and, thereby, access a lower rate. -- On-peak hrs-7 am-5 pm, 8 am-6 pm, or 9 am-7 pm at customer option; Monthly Distribution Charge-$16.45; Billing demand is average KW supplied during 15 minute period of maximum use during on-peak hrs of billing period. --Charges (1/07-12/07): $1.113/KW in excess or 2 KW; Capacity & Energy Charge $5.32/KW of on-peak billing KW in excess of 2 KW. $3.201 cents/kWh for all kWh. Also CTC & ITC Charges	--Residential customers with qualifying thermal storage systems.	-- Thermal storage system that meets Company requirements. TOU meter with pre-programmed on-peak and off-peak period with capability to operate the thermal storage system. Closed to new participants.	--Yes
	2007 No Change	13,866 participants in 2007	2007 No Changes	2007 No Changes	2007 No changes
	-- Off-Peak Space Conditioning/Water Heating --	-- Permits customers to do space conditioning and/or water heating at off-peak rates through a separate sub-meter. -- Water heater is equipped w/ auto timing controls. Charges: Distribution-$7.49/month plus 1.855 cents/kWh & CTC/ITC. Capacity/Energy Charge .965 cents/kWh (1/07-12/07) 488 customers in 2007.	Rate Schedules RS, GS-1, GS-3	Separate TOU sub-metering. Program is closed to new participants.	-- Yes
	-- Time of Use Billing –	--Permits customers to shift demand to off-peak periods to reduce billing demand. Rate RTD: Distribution Charge: $15.45 ; Capacity/Energy Charge: 9.965 cents/kWh on-peak, 2.958 cents/kWh off-peak (1/07-12/07); -- On-peak hrs- 7 am-5 pm, 8 am-6 pm, or 9 am-7 pm at customer option. 3,513 customers in 2007	Rate Schedules RTD, GS-1, GS-3	Separate TOU sub-metering. Program is closed to new participants.	-- Yes
2007	2007 No Changes	2007 No Changes to Description- Updates on Customer Participation Numbers	2007 No Changes	2007 No Changes	2007 No Changes

Table 3. Summary of PPL DSR Program Evaluations: Current & Past Programs

Program	Summary of Evaluations: Current & Past Programs	Reports Available for Review? Yes/No
Demand Side Response Rider – Residential 2007	In 2002, PPL Electric obtained Commission approval to offer an experimental Demand Side Response Rider – Residential over a three-year period to up to 200 eligible residential customers. This rider provides those customers a rate incentive to shift their load from on-peak periods to off-peak periods during the four summer months. To qualify for this program a customer must have an AMR meter. As a result, the only customers eligible in the first year were those included in the AMR project's test population. About 25 customers participated during July, August, and September of 2002. Approximately three-quarters of the monthly bills rendered to participants during this period were lower as compared to what they would have been charged for standard residential service under Rate Schedule RS. The summertime electric bills for participants were, on average, $3.31 per month below what they would otherwise have been. For those customers whose bills were lower, the average saving was $6.10 per month for the summer period. In aggregate, the participating customers saved about $202 on the generation component of their electric bills. PPL Electric estimates based on actual Locational Marginal Prices that, over the same period, the shifting of load translated into a saving of about $230 to serve those customers compared to the cost to serve a normal residential load profile. While this was a modest beginning, the fact that customers captured benefits from their actions that were nearly equivalent to the value of those benefits in the energy market suggested that this approach had merit. Follow-up customer research determined that participants were generally pleased with the program. PPL Electric spent about $65,000 on solicitation and enrollment, programming of necessary billing system changes, customer research, and administration and monitoring. In 2003, PPL Electric was able to expand the customer base because the AMR project had reached more customers. In 2003, following an extremely positive response to early solicitations, PPL Electric obtained Commission approval to increase the participation limit to 300 eligible customers. About 275 customers participated in 2003 and, again, about three-quarters of the monthly bills rendered to participants during this period were lower as compared to what they would have been charged for standard residential service under Rate Schedule RS. The summertime electric bills for participants were, on average, $2.82 per month below what they would otherwise have been. For those customers whose bills were lower, the average saving was $4.93 per month for the summer period. In aggregate, the participating customers saved about $3,037 on the generation component of their electric bills. PPL Electric estimates based on actual Locational Marginal Prices that, over the same period, the shifting of load translated into a saving of about $2,204 to serve those customers compared to the cost to serve a normal residential load profile. Clearly, the balance between customer savings and avoided costs that existed in 2002 did not exist in 2003 as participants during 2003 achieved benefits from their actions that were significantly greater than the value of those actions in the energy market. PPL Electric's preliminary analysis indicates that actual off-peak prices were higher in 2003 than in 2002 so that there was less real value associated with the shifting of kWhs in 2003 than in 2002, even though the customer billing values remained about the same (i.e., about 8 cents/kWh on-peak and about 3 cents/kWh off-peak). Again, follow-up customer research found that participants were generally pleased with the program. In 2003, PPL Electric spent an additional $73,000 on solicitation and enrollment, communication with prior year participants, customer research, and administration and monitoring.	Raw data on customer usage and market generation prices exists for 2002 through 2006. The analysis at left has been completed for 2002 and 2003. Similar analysis is underway for 2004 through 2006. Customer survey information is available for 2002 through 2005. No customer survey was conducted in 2006.

Table 4. Summary of PPL Meter Steps Needed to Make Hourly Pricing Available to ALL Its Customers

Current Status: Availability/Capabilities of Advanced Metering System Infrastructure	Overview of Infrastructure Requirements (Include every aspect from operations center, software to customer location) to Permit All Customers the Ability to Use Hourly Pricing	Costs Associated with Giving All Customers the Ability to Access Hourly Pricing	Future Plans: Approximate Deployment Timeframe
-- **Interval Meters** **2004**	-- AMR meters can be queried on demand so they could be considered to satisfy both functions. However, a meter data management system and billing interface is required to automate those functions if DSR programs were to be offered to large numbers of customers. The next step, depending on the nature of the program, would be to provide data back to the customer so that he can monitor his performance. We are attempting to develop information regarding both of these additional functions, but have nothing to offer yet.	The AMR deployment totals approximately $116 million. The cost of communications equipment, computer hardware, and computer software is an additional approximately $44 million. This does not reflect the costs to operate the system which includes personnel dedicated to operation and maintenance, and the cost of communication.	
2007	2007 Changes to Program Description -- PPL Electric is in the process of installing a meter data management system that includes the following components: - a repository to store customer data, including hourly data; - a validation, editing and estimating system to assure the quality of data, fill in missing data, and edit erroneous data; - a complex billing system to enable hourly, on peak/off peak, or other forms of billing not within the capability of PPL Electric's Customer Service System; - a settlement system that will permit the settlement of energy supply on a usage rather than a load profile basis; and, - a customer interface that will permit customers to view their hourly usage; - interfaces with existing systems.	2007 Changes -- The installation of meter data management is anticipated to total approximately $10 million.	2007 Changes -- PPL Electric's plan is to have in place infrastructure that will permit any of its customers to be provided generation service at hourly prices (or at prices that require hourly consumption information) beginning January 1, 2010; i.e., the date when the caps on the Company's POLR rates expire. PPL Electric has requested Commission approval (Docket No. P-00062227) of a POLR supply plan for 2010 that includes an hourly option for large commercial and industrial customers and the availability of its Demand Side Response Rider – Residential to all eligible customers. The Company has no current plans to offer hourly (or hourly based) POLR service to small commercial and industrial customers. However, the settlement system will enable generation suppliers to offer such rates.