ATTACHMENT 2

PPL Electric Utilities
Smart Meter Plan Budget

ATTACHMENT 2

PPL Electric Smart Meter Program Budget	2010	2011	2012	2013	2014	Total
Minimum Requirements						
6 B(1): Bidirectional data communications capability	-	-	-	-	-	-
1. Demonstration of this functionality will be provided in conjunction with home area network pilot to be completed in Section 6 C(4).	-	-	-	-	-	-
6 B(2): Recording usage data on an hourly basis at least once per day	-	-	-	-	-	-
1. PPL Electric does not anticipate any incremental costs to be expended except for meter replacement under normal conditions such as damage to the meter, defective meters and customer requests.	-	-	-	-	-	-
6 B(3): Provide customers with direct access to price and consumption information	-	-	-	-	-	-
1. Messaging - Price and usage information						
- Evaluate various channels of customer communications	$60,000					**$60,000**
- Implementation		$100,000				**$100,000**
2. Demonstration of this functionality will be provided in conjunction with home area network pilot to be completed in Section 6 C(4).	-	-	-	-	-	-
6 B(4): Provide customers with information on their hourly consumption	-	-	-	-	-	-
1. Work with customers, EGSs and 3rd parties to provide hourly consumption that is in clear and understandable formats. Estimated costs to be quantified later during 30 month grace period.	-	-	-	-	-	-
6 B(5): Enabling TOU and RTP Price Programs	-	-	-	-	-	-
1. Demonstration of capability to comply with this requirement for RTP with industrial and commercial accounts 500 KW and greater to be completed in conjunction with work to be done in Section 6 C(2).	-	-	-	-	-	-
6 B(6):Supporting automatic control if the customer's electric consumption	-	-	-	-	-	-
1. Load Control Evaluation						
- Conduct pilot of 500 Customer installations	$436,000					**$436,000**
- System Implementation		$1,050,000	$1,050,000	$1,050,000	$1,050,000	**$4,200,000**

PPL Electric Smart Meter Program Budget	2010	2011	2012	2013	2014	Total
Minimum Requirements						
Additional Capabilities	-	-	-	-	-	-
6 C(1): Remote disconnection and reconnection	-	-	-	-	-	-
- Conduct pilot- 500 customer installations		$210,000				**$210,000**
- Implementation			$2,645,000	$5,290,000	$5,290,000	**$13,225,000**
6 C(2): Ability to provide 15 minute or shorter interval data	-	-	-	-	-	-
1. Evaluate scalability in PLC based system						
- Performance evaluation for 800 meters >500 KW	$65,000					**$65,000**
- Potential TNS to MV-90 Meter Conversion	$510,000	$120,000	$120,000	$120,000	$120,000	**$990,000**
2. Performance evaluation of Focus UMT-r meters						
- Conduct pilot with 500 meters			$35,000			**$35,000**
6 C(3): On-board meter storage of meter data	-	-	-	-	-	-
1. Ability to read historical data/process IT						
- Design/development & pilot with Aclara		$80,000				**$80,000**
- MDM capability to upload and re-VEE data			$50,000			**$50,000**
6 C(4): Open standards and protocols	-	-	-	-	-	-
1. In-Home Display/Home Area Network						
- Evaluate available technologies and requirements	$60,000					**$60,000**
- Conduct Pilot with 500 customers		$350,000				**$350,000**
- Implementation			$2,000,000	$2,000,000	$2,000,000	**$6,000,000**
6 C(5): Ability to upgrade these minimum capabilities as technology advances and becomes economically feasible	-	-	-	-	-	-
1. General Obsolescence and Upgrade Issues						
- Next generation PLC based system evaluation		$50,000				**$50,000**
- Potential next generation PLC based system implementation			$1,500,000	$1,500,000		**$3,000,000**
- Evaluation next generation AMI technologies/Smart Grid integration		$55,000	$25,000	$25,000	$25,000	**$130,000**
- Assessment of existing PLC based functionality	$30,000					**$30,000**
- Telecommunications Substation Modem evaluation & replacement	$220,000	$420,000				**$640,000**
- Real Time Path mapping in PLC based system						
» Evaluate feasibility and potential design		$25,000				**$25,000**
» Implement/evaluate results of proof of concept design		$50,000				**$50,000**
» Implement full scale			$150,000			**$150,000**
- PLC based system enhancements						

PPL Electric Smart Meter Program Budget	2010	2011	2012	2013	2014	Total
Minimum Requirements						
a. Consider addition of Modulation Transformer Units(MTU)						
» Evaluate the benefits for additional MTUs		$32,500				**$32,500**
b. Consider deployment of SCPA G2 Boards						
» Evaluate the benefits for new SCPA boards		$32,500				**$32,500**
» Install SCPA boards			$420,000	$350,400		**$770,400**
2. Service Extending						
- Conduct pilot - 500 customers				$110,000	$110,000	**$220,000**
3. Prepay Metering						
- Conduct pilot - 500 customers				$240,000		**$240,000**
- Implementation					$3,162,500	**$3,162,500**
4. Momentary Outage Monitoring						
- Conduct pilot		$50,000	$50,000			**$100,000**
- Implement recommendations			$50,000	$50,000		**$100,000**
5. Feeder Meters						
- Pilot on wireless-based systems for 5 feeders with 20 meters per feeder		$300,000				**$300,000**
- Pilot expansion to PLC-based systems on 5 feeders with 20 meters per feeder			$300,000			**$300,000**
- Plan implementation				$8,000,000	$10,000,000	**$18,000,000**
6 C(6): Ability to monitor voltage at each meter	-	-	-	-	-	-
1. Wireless-based system enhancement	$100,000					**$100,000**
2. Voltage measurement/collection/ reporting in PLC-based system						
- Pilot		$100,000				**$100,000**
- Full scale implementation			$125,000			**$125,000**
6 C(7): Remote programming capability	-	-	-	-	-	-
To be demonstrated in conjunction with work to be completed in Section 6 C(5).	-	-	-	-	-	-
6 C(8): Communicate outages and restorations	-	-	-	-	-	-
1. Proactive outage detection	-	-	-	-	-	-
- Assess options to determine how to become more proactive with outage detection	$100,000					**$100,000**
- Implement plan		$115,000				**$115,000**

PPL Electric Smart Meter Program Budget	2010	2011	2012	2013	2014	Total
Minimum Requirements						
6 C(9): Ability to support net metering of customer generators	-	-	-	-	-	-
1. Evaluate feasibility customer owned generation with TNS						
- Conduct pilot with Focus UMT-r meters - 100 meters	$234,000					**$234,000**
- Implementation		$125,000	$125,000	$125,000	$125,000	**$500,000**
Program Management	$300,000	$313,500	$328,000	$343,000	$358,000	**$1,642,500**
Total	**$2,115,000**	**$3,578,500**	**$10,673,000**	**$20,903,400**	**$23,940,500**	**$61,210,400**