

## **Carbon Disclosure Project (CDP5) Greenhouse Gas Emissions Questionnaire**

PPL Corporation was asked in 2006 for the first time to respond to questions from the Carbon Disclosure Project, a collaboration of international investor groups. In 2007, PPL again participated in the project and submitted the responses below on May 31, 2007.

### **Section A**

#### **1. Climate Change Risks, Opportunities and Strategy**

**a. Risks: What commercial risks does climate change present to your company including, but not limited to those listed below?**

- **Regulatory risks associated with current and/or expected government policy on climate change e.g. emissions limits or energy efficiency standards.**
- **Physical risks to your business operations from scenarios identified by the Intergovernmental Panel on Climate Change or other expert bodies, such as sea level rise, extreme weather events and resource shortages.**
- **Other risks including shifts in consumer attitude and demand.**

PPL, a growing company that owns or controls more than 11,000 megawatts of electric generating capacity in the United States, recognizes a responsibility to address climate change in a reasoned and informed way – a way that works to reduce greenhouse gas emissions while maintaining a strong economy, reducing dependence on energy sources from outside of the United States and providing reliable electricity supply and infrastructure. We believe it is essential to identify and understand the risks and opportunities in climate change, and assess the benefits and costs of responses.

About 70 percent of PPL's generating capacity uses fossil fuels. PPL facilities generated 52.5 million megawatt-hours of electricity in 2006. Of that total, 32 million megawatt-hours (61 percent) were generated using fossil fuels, 20.5 million megawatt-hours (39 percent) were generated using sources that do not emit carbon dioxide.

PPL is assessing both regulatory and physical risks of climate change. The United States has no law governing greenhouse gas emissions, but the U.S. Congress is actively discussing various legislative proposals. Based on the proposals evaluated so far and the makeup of PPL's generation portfolio, we do not believe PPL will be significantly disadvantaged by federal legislation controlling carbon dioxide emissions compared with other utilities that generate most of their electricity with fossil fuels. PPL's wholesale and retail electricity customers could see increases in the cost of electricity as a result of increases in the cost of generating electricity with fossil fuels, depending on the legislative measures enacted to control greenhouse gas emissions.

#### **a.i. Regulatory Risks**

- Siting, permitting and cost of future power plants.

- Lack of demonstrated technology to reduce, capture, transport and sequester carbon dioxide emissions from existing or new fossil fuel power plants.
- Uncertain capital cost of carbon dioxide controls.
- Uncertain operating and maintenance costs of carbon dioxide controls.
- Recovery of capital and O&M costs related to greenhouse gas controls.
- Patchwork of inefficient and potentially conflicting state and regional programs if there continues to be no unified national response to greenhouse gas emissions.
- Potential devaluation of existing fossil fuel power plants and higher prices for electricity generated with fossil fuels, depending on the legislative measures enacted to control greenhouse gas emissions.
- Retail electricity prices might not reflect the actual cost of a carbon-constrained market.
- Customer dissatisfaction with increases in electricity prices.

#### **a.ii. Physical Risks to PPL Facilities and Infrastructure**

- Increased spending for repair and replacement of electric transmission and distribution facilities damaged by storms and weather extremes (including heat, cold, drought and flood).
- Disruptions in fuel delivery to PPL generating plants because of weather extremes.

#### **a.iii. Other business risks**

- Revenue effects of weather extremes on wholesale electricity prices.
- Long-term need to shift infrastructure based on changes in electricity use.

#### **b. Opportunities: What commercial opportunities does climate change present to your company for both existing and new products and services?**

Depending on the specifics of climate change legislation, business opportunities for PPL could partly offset compliance costs. Since 2000, PPL has developed profitable renewable energy projects totaling 12 megawatts of generating capacity that displaces about 50,000 tons of carbon dioxide emissions per year. PPL also purchases energy from wind projects totaling about 50 megawatts.

PPL plans to invest at least \$100 million in renewable energy projects over the next five years. The carbon offset potential of that commitment cannot be estimated until specific projects and technologies are identified.

Government incentives for carbon capture research and development also could create opportunities. PPL is participating in the FutureGen Industrial Alliance, a consortium of the U.S. government and private industry to develop a near-zero-emission coal-fired power plant, and the Big Sky Carbon Sequestration Partnership in the northwestern U.S. Both of these leading-edge programs will provide PPL timely access to data and results from carbon capture and sequestration research.

PPL's understanding of markets and proven ability to assess and hedge risk may provide opportunity in the trading of greenhouse gas emissions credits, if U.S. legislation includes a cap-and-trade provision.

PPL also expects new product lines to evolve in support of short-term response to climate change. These include energy efficiency, conservation, demand-management programs, distributed generation and renewable energy. PPL is well-positioned to take advantage of these opportunities with its ongoing development of renewable energy projects and the capabilities of the advanced electric metering system installed by its U.S. electric distribution company, PPL Electric Utilities.

In the near future, PPL Electric Utilities will be able to offer its 1.4 million customers new rate options, demand-management programs and enhanced usage information. PPL Electric Utilities will introduce a Web-based home energy analyzer for customers in 2007, and has proposed expanded demand-management and energy-efficiency programs starting in 2008.

**c. Strategy: Please detail the objectives and targets of the strategies you have undertaken or are planning to take to manage these risks and opportunities. Please include adaptation to physical risks.**

PPL is participating in the policymaking process to ensure that the U.S. addresses climate change in a reasoned and informed way – one that works to slow the growth of greenhouse gas emissions and eventually reduce them while keeping the economy strong, reducing dependence on foreign energy sources and providing reliable electricity supply and infrastructure.

Through the policymaking process, PPL supports the idea of government incentives that encourage development of new technologies to reduce and capture/sequester greenhouse gas emissions from stationary and mobile sources.

PPL will maintain a diversified generation portfolio, and is developing plans to expand renewable energy capacity and increase generation at existing hydro and nuclear facilities that do not emit carbon dioxide.

**d. Reduction targets: What are your emission reduction targets and time frames to achieve them?**

PPL has not established firm emission reduction targets because of the uncertainty about climate change legislation in the U.S., but has taken actions to reduce greenhouse gas emissions. Those actions are listed in section B.

## **2. Greenhouse Gas Emissions Accounting**

**a. Methodology: Please provide the following information on your company's emissions measurements:**

- **The accounting year used to report emissions.**
- **The methodology by which emissions are calculated.**
- **Whether the information has been externally verified or audited.**

- **An explanation for any significant variations in emissions from year to year, e.g. due to major acquisitions, divestments, introduction of new technologies, etc.**

The accounting year for this report is Jan. 1, 2006, to Dec. 31, 2006.

PPL's carbon dioxide emission monitors are installed, operated and maintained according to Title 40 Code of Federal Regulations Protection of Environment Part 75, Continuous Emission Monitoring regulations. Other greenhouse gas emissions not directly measured by instruments are estimated in accordance with the WRI/WBCSD Greenhouse Gas Protocol or U.S. Department of Energy 1605(b) Technical Guidelines.

CEM analyzers at PPL power plants are audited periodically by environmental agencies in the states where PPL operates fossil fuel power plants: Pennsylvania, Montana, Connecticut, New York and Illinois. PPL and the U.S. Environmental Protection Agency review and verify CEM data before it is posted on EPA's Web site.

**b. Scope 1 and 2 of GHG Protocol: Direct and indirect greenhouse gas emissions and electricity consumption**

Scope 1 activity tons CO2e emitted	30.3 million tons(1)
Scope 2 activity tons CO2e emitted	See footnote 2
MWh of purchased electricity	19.1 million MWh(2)
% of purchased MWh from renewables	0.4% (77,000 MWh)

(1) Includes direct emissions of SF6 of about 100,000 tons CO2e from electric distribution operations in the U.S., U.K. and Latin America.

(2) Purchases are U.S. data and include the effects of energy line loss.

**c. Scope 3 of GHG Protocol: Other indirect GHG emissions. Where feasible please provide estimates for the following categories of emissions: use/disposal of company's products and services, your supply chain, external distribution/logistics, employee business travel.**

The primary product PPL produces is electricity. We do not monitor internal use of electricity in production of our product. We do not include greenhouse gas emissions resulting from customer use of our product because the emissions would be double-counted.

PPL does not monitor greenhouse gas emissions by its more than 9,000 suppliers. PPL expects suppliers to comply with applicable environmental laws and regulations.

PPL operates a vehicle fleet in the U.S. that emitted an estimated 25,000 tons of greenhouse gases in 2006.

PPL does not estimate greenhouse gas emissions associated with employee business travel.

**Section B**

**3. Additional Greenhouse Gas Emissions Accounting: Using the methodology as set out in 2(a), please state your Scope 1 and 2 emissions as follows:**

**a. Countries: For each country in which you have operations, where available.**

More than 99 percent of PPL's greenhouse gas emissions result from electric power generation in the United States. PPL electric distribution subsidiaries in the U.K., Chile, Bolivia and El Salvador have minimal reportable direct greenhouse gas emissions.

**b. Facilities: For facilities covered by the EU Emissions Trading Scheme. Please also include the number of allowances you were issued under the applicable National Allocation Plans.**

PPL's U.K. electric distribution facilities are not covered by the EU Emissions Trading Scheme and have no allowances under the U.K. National Allocation Plan.

**c. EU ETS Impact: What has been the impact on your profitability of the EU Emissions Trading Scheme?**

Because PPL facilities are not covered by the EU ETS, it has had no effect on PPL's profitability.

#### **4. Greenhouse Gas Emissions Management**

**a. Reduction Programs: What emission reduction programs does your company have in place? Please include any reduction programs related to your operations, energy consumption, supply chain and product use/disposal.**

- PPL participates in clean energy projects that use wind, landfill methane, sunlight and fuel cells to generate electricity. One of our landfill energy projects was selected as a 2006 Project of the Year by the U.S. Environmental Protection Agency.
- PPL purchased 77,000 megawatt-hours of renewable energy in 2006.
- PPL plans to invest at least \$100 million to develop renewable energy projects over the next five years.
- PPL is one of four U.S. utility members of the FutureGen Industrial Alliance, which is developing a near-zero-emission coal-fired power plant that can capture carbon dioxide emissions for sequestration.
- PPL is a member of the U.S. Department of Energy's Big Sky Carbon Sequestration Partnership in the northwestern U.S. to support the development of technologies that can provide for long-term storage of carbon dioxide through geologic or terrestrial sequestration.
- PPL has increased electric generation capacity at existing nuclear and hydro plants, and is pursuing plans to further expand these sources.
- PPL is decommissioning two coal-fired power plants in 2007, which will reduce annual carbon dioxide emissions by about 1.3 million tons.
- PPL Electric Utilities has installed an advanced metering system. This technology will enable the company to offer new rate options and demand

management programs to help consumers reduce their electricity use. PPL Electric Utilities has proposed expanded programs for demand management and energy efficiency starting in 2008.

- A building at PPL’s headquarters was the first privately owned building in Pennsylvania to receive a “Gold” rating from the U.S. Green Building Council.
- PPL Electric Utilities uses bio-diesel alternative fuel (20% supplemented with soybean or vegetable oil) for more than 300 vehicles, and is looking to expand its use of alternative fuels (bio-diesel and ethanol).
- PPL Electric Utilities has ordered its first hybrid diesel/electric powered bucket truck for delivery in 2007.

**b. Emissions Trading: What is your company’s strategy for trading in the EU Emissions Trading Scheme, CDM/JI projects and other trading schemes (e.g. CCX, RGGI, etc.), where relevant?**

More than 99 percent of PPL’s greenhouse gas emissions result from electric power generation in the United States. Because the United States government has not signed the Kyoto Protocol, PPL’s U.S. operations may not participate in the EU Emissions Trading Scheme or CDM/JI projects. PPL’s electric distribution company in the United Kingdom does not have an obligation to participate in the EU Emissions Trading Scheme. PPL has elected not to participate in the Chicago Climate Exchange at this time.

**c. Emissions Intensity: Please state which measurement you believe best describes your company’s emissions intensity performance. What are your historical and current emissions intensity measurements? What are your targets?**

PPL measures annual greenhouse gas emissions in tons and total emissions per megawatt-hour of electricity generated by PPL-owned generation assets. Performance for the last five years is shown in the chart below.

Year	Emissions	Emissions Rate
2006	30.3 million tons	0.58 tons/MWh
2005	32.6 million tons	0.55 tons/MWh
2004	32.3 million tons	0.60 tons/MWh
2003	30.8 million tons	0.59 tons/MWh
2002	29.9 million tons	0.58 tons/MWh

**d. Energy Costs: What are the total costs of your energy consumption from fossil fuels and electric power? What percentage of your total operating costs does this represent?**

PPL facilities generated 52.5 million megawatt-hours of electricity in 2006. Fuel is a major component of generation costs. PPL’s fuel costs in 2006 were \$909 million, which represents about 17 percent of total operating expenses.

**e. Planning: Do you estimate your company’s future emissions? If so, please provide details of these estimates and summarize the methodology for this. How do you factor the cost of future emissions into capital expenditure**

**planning? Have these considerations made an impact on your investment decisions?**

PPL analyzes the dynamics of climate change under a variety of potential legislative scenarios to inform decision-making on capital expenditures and investments. At this time, because there is no proven technology to address capture and sequestration of greenhouse gases, it is not a critical component of the capital budgeting process for existing generation sources. However, as noted above, PPL continues to explore expansion of hydro and nuclear plant capacity. Associated costs for those projects are included in the capital planning process.

**5. Climate Change Governance**

**a. Responsibility: Which Board Committee or other executive body has overall responsibility for climate change? What is the mechanism by which the Board or other executive body reviews the company's progress and status regarding climate change?**

PPL's climate change response is the responsibility of the Corporate Leadership Council, which consists of the Chief Executive Officer, Chief Operating Officer, Chief Financial Officer and Senior Vice President-General Counsel & Secretary. The council receives regular updates on progress and status of climate change actions from a cross-departmental climate change team that includes representation from operating companies and corporate service organizations such as Environmental Management, Office of General Counsel and External Affairs. PPL has designated the president of its Energy Services Group as the executive liaison for climate change issues.

**b. Individual Performance: Do you provide incentive mechanisms for managers with reference to activities relating to climate change strategy, including attainment of greenhouse gas targets? If so, please provide details.**

A portion of executive compensation is based on achievement of prescribed business results. The awards are based on objective corporate financial and operational measures. Specific written performance objectives and business goals are established during the first quarter of each year. Operating goals for 2006 did not include climate change strategy or attainment of greenhouse gas targets.