

## **Carbon Disclosure Project (CDP4) Greenhouse Gas Emissions Questionnaire**

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

In September 2006, CDP reports will be sent to participating investors and responding companies and made publicly available at [www.cdproject.net](http://www.cdproject.net).

### **1. General: How does climate change represent commercial risks and/or opportunities for your company?**

*Response:* Climate change and government response to greenhouse gas (GHG) emissions are significant issues for the electric power generation business, particularly for companies that use fossil fuels for a large portion of the electricity they generate. More than 60 percent of the electricity produced by PPL generating facilities in 2005 was derived from fossil fuels. About 70 percent of PPL's 12,000 megawatts of generating capacity is fossil fuel-based.

PPL believes it is essential to identify and understand the risks and opportunities in climate change, and to appropriately assess the benefits and costs of potential responses to the issue.

PPL also operates electric delivery businesses in the U.S., the U.K. and Latin America. We believe the climate change issue will have limited effects on those businesses.

### **Risks**

Depending on the specifics of any future legislative or regulatory action concerning climate change, the issue could have material adverse consequences for PPL. Such potential consequences could result from legislative/regulatory actions or changes due to weather.

#### **Regulatory risks include:**

- Cost, availability and cost recovery of environmental controls.
- Devaluation of fossil-fuel generation assets.
- Cost and availability of fuels.
- Siting and cost of future power plants.
- Higher prices for electricity generated with fossil fuels.

#### **Weather-related risks include:**

- Reliability performance of electric transmission and distribution facilities in the event of more severe storms.
- Increased costs for design, construction, maintenance and repair of electric transmission and distribution facilities in the event of weather extremes.

- Changes in patterns of customer energy consumption (e.g., reduced energy revenue in the event of milder winter weather, higher wholesale energy prices in summer months in the event of increased demand)

### **Opportunities**

Depending on the specifics of any future legislative or regulatory action concerning climate change, the issue could present opportunities for PPL, which could partially offset the cost that may be associated with regulatory compliance. They include:

- Use of experience in energy marketing and trading of emissions credits.
- Potentially higher wholesale energy prices in summer months in the event of increased demand.
- Increased value of land owned by PPL affiliates that could be used for carbon sequestration.
- Additional investment opportunities in renewable energy projects.

### **2. Regulation: What are the financial and strategic impacts on your company of existing regulation of GHG emissions, and what do you estimate to be the impact of proposed future regulation?**

*Response:* No such laws or regulations are in place at the federal or state levels in the United States at this time, so there are no direct financial impacts on PPL's U.S. operations. Because the form of regulation has not been sufficiently defined, PPL has not quantified the financial impact.

Regulation of GHG emissions in the U.K., Chile, El Salvador and Bolivia does not have a significant financial impact on PPL, because PPL's assets in those countries are mainly power transmission and/or distribution facilities.

### **3. Physical Risks: How are your operations affected by extreme weather events, changes in weather patterns, rising temperatures, sea level rise and other related phenomena both now and in the future?**

*Response:*

- Storms can cause damage to transmission and distribution facilities. Increased frequency of storms could increase repair and replacement costs. Both of these results could lead to higher delivery prices.
- Extreme weather events and changes in weather patterns may change construction requirements for transmission and distribution facilities, and require investment to upgrade and fortify facilities.
- Reduced rainfall could affect soil thermal conductivity and reduce the expected life of underground electric cables; and increased rainfall could increase the potential for flooding of substations and underground electric facilities.
- Extreme heat or cold may affect the operation of generation assets and cause disruptions in fuel delivery to PPL generating plants. PPL-owned generating plants are located in areas where they would not likely be affected significantly by sea level rise or major hurricanes.

### **What actions are you taking to adapt to these risks, and what are the associated financial implications?**

*Response:* As part of our ongoing operations, we routinely assess storm recovery readiness and preparation in our delivery operations. We also take measures to avoid disruption in fuel delivery to our power plants.

**4. Innovation: What technologies, products, processes or services has your company developed, or is developing, in response to climate change?**

*Response:*

- PPL has participated in various power generation projects that reduce GHG emissions, including wind, landfill methane, fuel cells and solar photovoltaic, as well as customer energy efficiency and conservation, projects.
- PPL is a member of the FutureGen Industrial Alliance, a non-profit consortium working to develop a zero-emission fossil-fuel plant in the U.S.
- PPL is considering proposals to expand the generating capacity of its existing hydroelectric and nuclear plants, which do not emit GHG.
- A building at PPL's corporate headquarters is the first privately owned building in Pennsylvania to receive a "gold" rating from the U.S. Green Building Council through its Leadership in Energy and Environmental Design program.
- Beneficial reuse of fly ash from PPL coal-fired generating plants helps the concrete industry avoid GHG emissions.
- PPL is participating in the U.S. Environmental Protection Agency's Coal Combustion Product Partnership.
- PPL has worked with Ceres on the Electric Utility Dialogue on Climate Risk.
- In the U.K., PPL's Western Power Distribution is monitoring GHG emissions using the U.K. Department for Environment, Food and Rural Affairs reporting guidelines, and drafting standard reporting arrangements for the use of SF6.

**5. Responsibility: Who at board level has specific responsibility for climate change related issues and who manages your company's climate change strategies?**

*Response:* Climate change is an important part of the Board's overall review and monitoring of PPL's environmental performance. PPL's climate change strategies and response are the responsibility of the Corporate Leadership Council (the senior executives of the corporation). Three CLC members also serve on the Board of Directors. Direct management of PPL's climate change response is a function of the Director of Environmental Management, who reports directly to the President and Chief Operating Officer. PPL has a climate change strategy team, with representation from all business lines. The company has conducted an inventory of GHG emissions, identified and evaluated opportunities, and purchased and installed a GHG emissions data management software system.

**How do you communicate the risks and opportunities from GHG emissions and climate change in your annual report and other communications channels?**

*Response:* PPL has addressed climate change in its Annual Report to Shareowners, Community and Environmental Report, Ceres Report, and in SEC disclosures. These documents are available through PPL's Internet site, [www.pplweb.com](http://www.pplweb.com).

**6. Emissions: What is the quantity in tonnes CO<sub>2</sub>e of annual emissions of the six main GHG's produced by your owned and controlled facilities in the following areas, listing data by country?**

*Response:*

*Globally:* In 2005, PPL's CO<sub>2</sub>e emissions were approximately 32 million tons from operations in the U.S., the U.K., Chile, Bolivia and El Salvador. Based on our 2002 corporate GHG inventory, this number almost exclusively results from generation of electricity in the U.S. with fossil fuels.

*Annex B countries of the Kyoto Protocol:* PPL facilities in Annex B countries of the Kyoto Protocol operate electricity transmission and distribution networks, and produce less than 1% of PPL's GHG emissions.

*EU Emissions Trading Scheme:* PPL operates an electric distribution company in the U.K. PPL does not have an opportunity to participate in the EU Emissions Trading Scheme.

**To assist in comparing responses please state which methodology you are using for calculating emissions and the boundaries selected for emissions reporting. Please standardize your response data to be consistent with the accounting approach employed by the GHG Protocol ([www.ghgprotocol.org](http://www.ghgprotocol.org)). Please list GHG Protocol scope 1, 2 and 3 emissions equivalent showing full details of the sources. How has this data been audited and/or externally verified?**

*Response:* In PPL's 2002 CO<sub>2</sub>e inventory, more than 99 percent of its emissions were the result of electricity generation using fossil fuels. Data provided to the U.S. Environmental Protection Agency were taken from continuous emission monitors at each plant and had undergone rigorous verification procedures.

All 32 million tons of CO<sub>2</sub>e emissions are Scope 1 emissions, following the guidelines of the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD) GHG protocol. The data have not been independently audited.

The methodologies used for calculating emissions and the boundaries are from the Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard, World Resources Institute/World Business Council on Sustainable Development, September 2001.

**7. Products and Services: What are your estimated emissions in tonnes CO<sub>2</sub>e associated with the following areas and please explain the calculation methodology employed.**

**Use and disposal of your products and services:**

*Response:* The primary product that PPL produces is electricity. PPL reported CO<sub>2</sub> emissions associated with power generation in the previous question. Including emissions from customer use would be double-counting.

**Your supply chain:**

*Response:* PPL has not integrated the supply chain into its climate response program, nor has it calculated or estimated these emissions.

**8. Emissions Reduction: What is your firm's current emissions reduction strategy?**

*Response:* PPL expects to identify projects that can reduce, offset or sequester carbon dioxide to minimize emissions. PPL will decommission two coal-fired generation units in 2007 (totaling 300 megawatts), which will reduce CO2 emissions by 1.3 million tons per year, but does not expect other major short-term actions to address GHG emissions in the U.S. due to continuing uncertainty surrounding climate change regulation or legislation.

**How much investment have you committed to its implementation, what are the costs/profits, what are your emissions reduction targets and time-frames to achieve them?**

*Response:* PPL has initiated or invested in projects that reduce GHG intensity, including wind energy projects, landfill methane-to-energy projects, commercial fuel cell projects, solar photovoltaic projects, expanded capacity at existing hydroelectric and nuclear generation plants, and improved plant efficiency projects.

PPL has joined the FutureGen Industrial Alliance, a non-profit consortium working with the U.S. Department of Energy to build the cleanest coal-fired power plant in the world.

PPL has not set an investment plan or time frame for definitive responses to climate change. As the U.S. government response becomes clearer, PPL will allocate funding and set timetables as appropriate. PPL has participated in the U.S. Department of Energy's voluntary Climate Challenge Program that documented GHG emission reduction during the 1990 through 2000 timeframe.

**9. Emission Trading: What is your firm's strategy for, and expected cost/profit from trading in the EU Emissions Trading Scheme, CDM/JI projects and other trading systems, where relevant?**

*Response:* PPL's U.S. operations do not participate in the EU scheme or CDM/JI projects. PPL's United Kingdom and Latin American electric distribution affiliates do not have opportunities to participate in the EU scheme or CDM/JI projects. PPL is exploring how these affiliates might contribute to PPL's overall response to climate change issues. PPL has elected not to participate in the Chicago Climate Exchange program at this time.

**10. Energy Costs: What are the total costs of your energy consumption, e.g. fossil fuels and electric power? Please quantify the potential impact on profitability from changes in energy prices and consumption.**

*Response:* In 2005, PPL generation facilities produced 58,855,223 megawatt-hours. Fuel sources for this generation are: 58 percent from coal, 28 percent from nuclear, 7 percent from oil or natural gas and 7 percent from water.

Fuel is a major component of the cost of electricity generation. In 2005, PPL spent \$933 million on fuel purchases. Because PPL generates more than 60 percent of its electricity today using fossil fuels, increases in fossil fuel prices or a surcharge on the use of fossil fuels to address climate change would increase the cost of generation. Ultimately, any such additional costs would be reflected in higher energy prices for consumers.

**For electric utilities:**

**Explain to what extent current and future emissions reductions involve a change of use in existing assets (i.e. fuel switching at existing facilities) or a need for new investment?**

*Response:* PPL is reducing its GHG emissions intensity levels through increased

power plant operating efficiency, increased hydro and nuclear generation, investments in renewable energy and investments in distributed generation technologies. The company will decommission two coal-fired units in the U.S. in 2007, but does not plan fuel switching at other facilities.

**What percentage of your revenue is derived from renewable generation in a government sponsored price support mechanism?**

*Response:* Government-sponsored price support programs are currently not directly available to PPL and its affiliates. PPL affiliates have been involved in some projects related to renewable energy technologies and fuel cells that receive federal tax benefits, state financing support and incentives, and support from certain non-profit entities with a renewable energy focus.