Power Generation / Electric Utility Reporting Protocol Version 1.1
Summary of Changes from Version 1.0
May 2009

The Power Generation/Electric Utility Reporting Protocol (PUP) provides reporting standards for how electric power generation and utility (electricity transmission and distribution) entities must compile, report, and verify their entity-wide greenhouse gas (GHG) emissions to submit their annual emissions inventory to the California Registry. The PUP is an industry-specific guidance document and is an appendix to the California Climate Action Registry's (California Registry) General Reporting Protocol (GRP).

California Registry is releasing the PUP Version 1.1 in order to clarify information and update emission factors to provide the most current and best available data to its power/utility reporting members. There are no policy changes made in the PUP Version 1.1 that would require Board approval; technical changes made from PUP Version 1.0 (April 2005) to PUP Version 1.1 (May 2009) are summarized below.

Section 1 Introduction

▪ **Removed natural gas transmission and distribution guidance.** We recommend that electric utilities follow industry best practice guidance for calculating and reporting emissions from natural gas operations, including natural gas storage, transmission, and distribution.

Section 4 Geographic Boundaries

▪ **Added information and requirements pertaining to the PUP Report.** California Registry members must report emissions in CARROT and in the PUP Report. The PUP Report provides a detailed breakdown of a member's power generation and purchases and is a publicly available attachment to the CARROT report.

Section 5 Direct Emissions from Stationary Combustion

▪ **Clarified guidance on reporting biogenic emissions.** Biogenic emissions may be reported under the Optionally Reported category in CARROT but power/utility companies must separately disclose power generation and purchases emissions from biogenic sources in the PUP Report.

- **Updated default CO_2 emission factors (Table 5.2).** California Registry uses U.S. EPA-developed default CO_2 emission factors for fossil fuels used by stationary combustion sources. Table 5.2 was updated to be consistent with the California Registry General Reporting Protocol (GRP) Version 3.1 (January 2009).

- **Updated default values for heat content, carbon content, and fraction of carbon oxidized for fuels used for electric power generation (Table 5.3).** California Registry uses U.S. EPA-developed default values for fossil fuel heat content, carbon content, and fraction of carbon oxidized when used by stationary combustion sources. Table 5.3 was updated to be consistent with GRP 3.1 (January 2009).

- **Updated default CH_4 and N_2O emission factors (Table 5.4).** California Registry uses U.S. EPA-derived default CH_4 and N_2O emission factors. Emission factors were updated for fuel combustion according to fuel type, combustion technology, and equipment configuration. Of note, sub-bituminous coal emission factors were added to this table. All N_2O emission factors have changed except for Large Natural Gas Fired Turbines >3 MW. CH_4 emission factors have also changed for all coal combustion technologies, distillate fuel oil, and boilers using natural gas.

Section 8 Indirect Emissions from Energy Purchased and Consumed

- **Updated eGRID emission factors (Table 8.2).** The California Registry uses U.S. EPA-developed eGRID emission factors as the default emission factors for calculating indirect emissions from purchased electricity. EPA released updated emission factors (eGRID2007 Version 1.1, December 2008), so we are adopting these updated factors for use by our members in the GRP 3.1 (January 2009) and the PUP 1.1 (May 2009).

- **Updated eGRID CH_4 and N_2O emission factors (Table 8.2).** Electricity emission factors for CH_4 and N_2O, in addition to CO_2, are available from eGRID2007 Version 1.1, December 2008. Table 8.2 was updated to be consistent with GRP 3.1 (January 2009).

Section 9 Industry-Specific Efficiency Metrics

- **Clarified who reports the electricity deliveries metric.** Provided clarifying language that independent power producers do not need to report an Electricity Deliveries metric because they do not deliver power to end-users. Only utilities that own transmission and distribution lines and purchase power to meet customer demand should report this metric.

Section 10 Calculating De Minimis Emissions

- **Removed fugitive CH_4 emission factors for coal, weighted average for post-mining at underground and surface mines (Table 10.1).** This table could not be updated with current emission factors for the specific post-mining weighted average; therefore, the table was replaced with a new Table 10.1 using information from the U.S. EPA Coal Bed Methane Emissions Estimates Database.

- **Added default fugitive CH_4 emission factors from post-mining coal storage and handling (Table 10.1).** The new Table 10.1 replaces the previous Table 10.1 and contains emission factors developed by the U.S. EPA according to coal basin and state. This table provides more detail about coal origin and coal mine type than the previous table.