CONNECTICUT
GREEN BANK

Memo

To: Keri Enright-Kato, Director, Office of Climate Change, Technology, & Research, Connecticut Department of Energy Environmental Protection, Ric Piroli, Bureau of Air Management, Connecticut Department of Energy Environmental Protection, Bryan Toal, Environmental Health, Connecticut Department of Public Health, and Denise Mulholland, Senior Analyst - State Climate and Energy Program, US Environmental Protection Agency;

CC: Robyn DeYoung, Environmental Specialist, US Environmental Protection Agency

From: Lucy Charpentier, Manager of Evaluation, Measurement and Verification; Eric Shrago, Director of Operations

Date: August 25, 2017

Re: Connecticut Green Bank use of EPA CoBRA for Public Health Impact Measurement for Projects

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BACKGROUND

Earlier this year, the Connecticut Green Bank (Green Bank) operationalized the Environmental Protection Agency (EPA)'s Avoided Emissions and Generation Tool (AvERT) model as the basis for measuring the environmental impacts of its investments. AvERT models the pollutants emitted by energy producers based on what would have been used to generate electricity had these projects not existed. AvERT measures these results in terms of CO_2, NO_X, SO_2, and $PM_{2.5}$.

The Green Bank, recognizing these pollutants effect a person's wellbeing, would like to gage the impact of improved air quality supported by its investments with regards to public health in the state.

The U.S. EPA created the Co-Benefit Risk Assessment (CoBRA) model as a tool for policy makers to assess public health impacts that are supported by changes in emissions.). The model allows users to estimate and map the air quality, human health, and related financial benefits of clean energy policies or programs.[1]

COBRA is built upon emission 2017 estimates of PM2.5, S02, NOX, NH3, and VOCs and a reduced form air quality model (Source-Receptor (S–R) Matrix). Users create their own

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[1] https://19january2017snapshot.epa.gov/statelocalclimate/co-benefits-risk-assessment-cobra-screening-model_.html

scenario by inputting increases or decreases to emissions. The model then converts the air quality changes into human health effects (e.g. number of cases of asthma, fatal heart attacks, hospitalizations, etc.) using standard EPA methods and applies monetary factors so that the user can see the health improvements in financial terms as well.

Once the methodology for the use of CoBRA is implemented, the Green Bank will:

- Calculate and disclose the public health benefits anticipated from the issuance of "green" bonds that finance clean energy projects; and
- Publicly report the public health benefits resulting from its investment activity in clean energy through its Comprehensive Annual Financial Report.

OVERVIEW OF OPERATIONALIZATION
The Green Bank will use outputs from AvERT as the inputs for CoBRA. The organization envisions running the model on a portfolio of projects at a time rather than calculating impacts on a per project level due to the complexity of the model and the small effects of a single project. The Green Bank will use the built in monetary factors in CoBRA unless otherwise approved by Connecticut Department of Public Health (DPH).

RECOMMENDATION
The Green Bank proposes to use CoBRA as its official tool for measuring health impacts and will automate its use where and when possible in our Data Warehouse.