King County

Department of
Natural Resources and Parks
Director's Office
King Street Center
201 South Jackson Street, Suite 700
Seattle, WA 98104-3855

July 15, 2011

David W. Danner
Executive Director and Secretary
Washington Utilities and Transportation Commission
1300 South Evergreen Park Drive S.W.
P. O. Box 47250
Olympia, WA 98504-7250

Dear Mr. Danner:

Attached, please find King County Department of Natural Resources and Parks (DNRP) comments regarding the Washington Utilities and Transportation Commission's Study of the Potential for Distributed Energy in Washington State, Docket UE-110667.

The DNRP strives to benefit its utility ratepayers and residents through the use of a range of alternative energy strategies. We appreciate the opportunity to provide comments on this important subject, which will undoubtedly impact our resource recovery programs.

Sincerely,

Christie True
Director

cc: Pam Elardo, Division Director, Wastewater Treatment Division, DNRP

King County
Department of Natural Resources and Parks
King Street Center, KSC-NR-0700
201 S. Jackson Street
Seattle, WA 98104-3855

Docket Number:	**UE-110667 –**
	(Study of the Potential for Distributed Energy in Washington State)
Comments by:	**King County Department of Natural Resources and Parks**
Date:	**July 15, 2011**

WUTC GOAL: *Encourage the development of cost-effective distributed energy in areas served by investor-owned utilities, as well as the opportunities and challenges facing investor-owned utilities and their ratepayers in developing distributed energy in this state.*

The State proposes to address opportunities and challenges for developing distributed energy by reviewing:

- *The current state and federal statutory authority governing distributed energy;*
- *Issues that apply to all forms of distributed energy, regardless of technology, including interconnection standards, system sizing restrictions, storage, and financial incentives, such as tax incentives, net metering and feed-in tariffs;*
- *Evaluations of the technical and economic potential for distributed energy, and the challenges and issues in Washington using specific technologies, including, but not limited to solar, hydrokinetic, wind, biomass, and biogas.*
- *Policy options and recommendations for developing distributed energy in areas served by investor-owned utilities.*

This study may impact King County facilities and projects at several locations:

- At **Cedar Hills Solid Waste Landfill,** King County Solid Waste Division (SWD) sells landfill gas (LFG), a qualified renewable energy supply, to BioEnergy Washington (BEW). BEW refines and compresses the gas to pipeline quality gas and sells it to Puget Sound Energy (PSE). King County has separately negotiated the sale of all emissions credits rights to PSE, including but not limited to those necessary to qualify the gas as a renewable source of energy.

- At **South Treatment Plant in Renton,** King County's Wastewater Treatment Division (WTD) scrubs and sells digester gas to PSE – an Investor-Owned Utility (IOU).

- King County WTD is also working with several local real estate developers on **Sewage to Energy Demonstration Projects** where heat and/or organic material pulled from conveyance lines can be converted into power to be used at a neighborhood or building level. For each of these projects, the real estate developer would identify an operator, possibly an IOU, to manage and operate the distributed energy facilities. WTD's goal is to

enable the private sector to invest in new or untested technologies that have the possibility of helping us meet our long-term WTD and King County climate, energy, and resource recovery goals for the benefit of utility ratepayers, county residents and the environment.

In addition to these facilities which work with Investor-Owned Utilities, King County WTD also will be operating a 4.6 MW installed cogen which uses digester gas as a fuel source. This new facility is expected to be in operation in 2013 at the West Point Treatment Plant in Seattle. Power from this cogen facility will be sold to a public utility, Seattle City Light. While not an IOU under the jurisdiction of the Utilities Commission, this facility will be subject to many of the same challenges.

For questions about these comments, please contact David Van Holde, Energy Manager, Department of Natural Resources and Parks (DNRP), at david.vanholde@kingcounty.gov or 206-296-3748, or Jessie Israel, Manager, Resource Recovery Section, WTD, DNRP, at jessie.israel@kingcounty.gov or 206-684-1844.

Please include both Ms. Israel and Mr. Van Holde in any further mailing list communication about Docket UE-110667.

Cedar Hills Solid Waste Landfill

A. General – Cross-Cutting Issues:

(1) What is the scope of current and anticipated distributed energy in the service territories of Washington's investor-owned utilities, including technology type, size and capacity; distribution across service territory; application of feed-in tariffs or net-metering; and any other relevant information? For each technology, what is its total technical resource potential (in contrast to the present, economically viable potential)? Is it concentrated within the state?

- Landfill gas is a significant distributed energy resource in Washington State, and King County operates a large landfill at its Cedar Hills site. At Cedar Hills, the King County SWD sells LFG, a qualified renewable energy supply, to BEW. BEW refines and compresses the gas to pipeline quality gas and sells it to PSE. Refining of LFG for sale as pipeline gas is not likely to be widely employed in the state due to limitations on access to large-volume gas transmission pipelines, where such injection may be allowed. Pricing of gas that is qualified as a renewable energy supply such as this, is currently on contract basis.

B. Technology-Specific Issues:

Biogas

(11) What is the generation capacity and energy production potential from biogas fuels located in Washington State?

- In 2010, at Cedar Hills, approximately1.4 trillion BTUs of landfill gas was produced.

South Treatment Plant in Renton

A. General – Cross-Cutting Issues:

(1) What is the scope of current and anticipated distributed energy in the service territories of Washington's investor-owned utilities, including technology type, size and capacity; distribution across service territory; application of feed-in tariffs or net-metering; and any other relevant information? For each technology, what is its total technical resource potential (in contrast to the present, economically viable potential)? Is it concentrated within the state?

- South Treatment Plant in Renton currently scrubs and sells digester gas derived from the wastewater treatment process to PSE.
- WTD is currently studying the potential to increase digester gas production by locating a brown grease disposal facility at the treatment plant. This study is expected to be complete in 2011 and the increase in digester gas production will be estimated at that time.

(3) Describe the incentives paid by or through investor owned utilities. How much is paid annually for each technology?

- PSE currently pays King County WTD $0.56/therm (indexed to residential rate) for scrubbed digester gas.

(4) Are there changes in state statutes or rules that would encourage technology- neutral development of distributed energy generally, such as changes to financial incentives? For example, would current interconnection standards need to be changed to accommodate more distributed energy or to accommodate different distributed energy technologies? Why?

- King County's scrubbed gas system at South Treatment Plant was built in 1987 and does not qualify for Renewable Energy Credits (RECs). It is one of only a handful of wastewater gas scrubbing systems in the nation. Qualifying for RECs would improve the economic viability of current or expanded production levels.
- In addition, energy captured from sewage in conveyance lines, before it reaches a treatment plant, should also clearly be defined as "renewable" in State legislation. As noted below, I-937 has left some question as to whether sewage-based energy (through heat recovery or other technologies) will qualify as "renewable" in Washington State.

B. Technology-Specific Issues:

Biogas

(11) What is the generation capacity and energy production potential from biogas fuels located in Washington State?

- In 2010 at South Treatment Plant, 288,440 MMBtu of digester gas was produced.

Proposed Sewage to Energy Demonstration Projects

A. General – Cross-Cutting Issues:

(1) What is the scope of current and anticipated distributed energy in the service territories of Washington's investor-owned utilities, including technology type, size and capacity; distribution across service territory; application of feed-in tariffs or net-metering; and any other relevant information? For each technology, what is its total technical resource potential (in contrast to the present, economically viable potential)? Is it concentrated within the state?

- King County WTD is working with several local real estate developers on **Sewage to Energy Demonstration Projects** where heat energy transfer technology may be used at a neighborhood or building level. For each district energy project, a real estate developer or private company would develop the neighborhood utility and identify an operator to manage and operate the distributed energy facilities. King County WTD would provide a fuel source via sewage in urban conveyance lines and have no operations or maintenance liability.

(13) What marginal costs are associated with the interconnection requirements for the connection of distributed energy systems? Are those costs material, and how should the costs be recovered (socialized or born by customer-owners of distributed resources)?

- The marginal costs of an interconnection requirement require labor hours and certain pieces of equipment. This will be a multiplicative cost base on the number of distributed energy facilities that are connected.
- As this cost is based on the necessity to connect a system for localized use, we believe that it should be borne by customer-owners of the distributed resource.

B. Technology-Specific Issues:

Are additional incentives needed?

- I-937 has left some question whether sewage-based energy will qualify as "renewable" in Washington State. Energy captured from sewage in conveyance lines, before it reaches a treatment plant, should clearly be defined as "renewable" in state legislation.
- While neighborhood-scale energy generators may be interested in developing district energy systems, they will also need to incentivize end users (real estate developers) to convert to the system. Many district energy technologies rely on hydronic building heating and air conditioning systems – radiators, in-floor radiant heat, or forced air – with a backup boiler system for peak use. Incentives for capital-intensive hydronic systems (rather than electric baseboard systems) would *not only* buy down the cost of connecting to a district energy system but also preserve future distributed energy potential. Interestingly, older or historic buildings with existing boilers and water radiators become good candidates for district energy retrofitting.

Public sewer/wastewater agency interests:

- King County is currently working to set forth mutual rights, responsibilities and obligations of parties relating to the construction and operation of District Energy Demonstration Projects connecting to WTD's wastewater conveyance system. Based on feedback from the development community and internal King County discussions, key issues related to the County's perspective regarding Sewage Energy Demonstration Project Agreements include:

  1. *Maintaining sewage heat/organic material content as a WTD asset:* With a demonstration period that allows developers access to sewage for district energy projects, WTD can incentivize District Energy innovations while gathering information on the value of heat energy as a product. This window also allows the project piloting the technology a "start-up" period for testing the technology before establishing the value of the heat energy.

  2. *Supporting WTD's Primary Mission and Asset Integrity:* Any connection to the County's sewer main that allows the drawing of fuel (heat, organic material, flow) from the wastewater conveyance must not impact WTD flow or reliability. The County's operation of its wastewater system shall have priority, and the County may require the temporary suspension of the heat energy recovery operation as necessary to ensure reliable performance of the wastewater system.

  3. *Determining the Level of Certainty Required to Incentivize Capital Investments:* Developers will need a reasonable length of agreement and some sense of a future rate model to assess their capital risk. Based on the information gained during the demonstration period, the County will develop a rate model for heat energy.

  4. *How It Gets Built - Developer Builds, Permits, Operates and Maintains:* The developer will construct the connection to WTD's conveyance system in conformance with the County design standards at its sole expense and be responsible for obtaining all permits and regulatory approvals for the design, installation and operation of the District Energy Project.

  5. *Required Data Gathering for Demonstration Period:* The developer will keep records of various ongoing data points for the project and will make those records available to County for the life of the connection to WTD's system. Such data points include, but are not limited to, the amount of sewage diverted, amount of heat extracted from sewage, and detailed operating costs of heat exchanger system.

  6. *Ownership of Potential Renewable Energy Credit (REC)s:* A portion of any REC proceeds received by the developer for the project should be shared with the County.