

# ***Development of WTD's Energy Plan:***

## ***Ensuring Reliability and Seeking Energy Efficiencies***

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**King County**

# 2006 KC Renewable Energy Order


- (1) Requires at least 50% of King County's total non-transit energy use come from renewable energy sources by 2012.
- (2) The following actions, among others, will be taken to achieve compliance:
  - Seek to maximize conversion & use of waste-to-energy. 
  - Transition to electricity produced from renewable sources, as practical.
  - Implement program to minimize existing energy use through increased efficiency, optimized operation & maintenance, & conservation efforts.



# King County Energy Plan

Roadmap to achieve the mandates of the Renewable Energy Order & planning for King County's future use, generation & conservation of energy.

Three main goals:

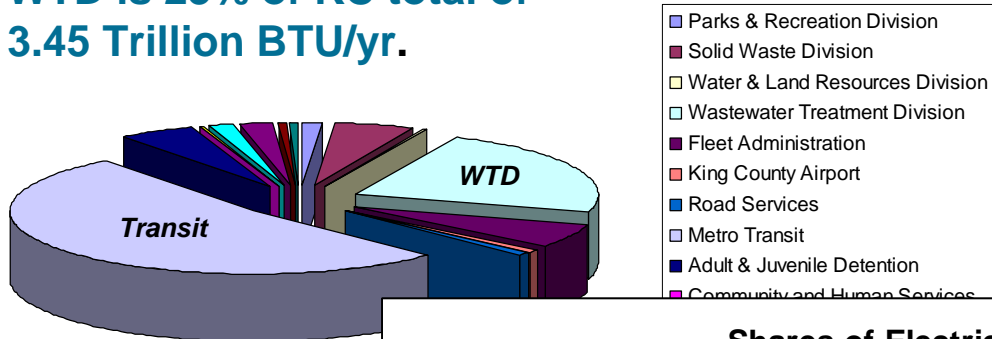
1. King County will be a leader in the use of climate friendly, renewable energy sources & will achieve the goals of the Renewable Energy Order. 
2. King County will maximize the conversion of waste-to-energy.
3. King County will be a leader in energy efficiency by achieving a 10% normalized net reduction in county energy use by 2012.



# 2007 Energy Baseline: WTD Figures Prominently

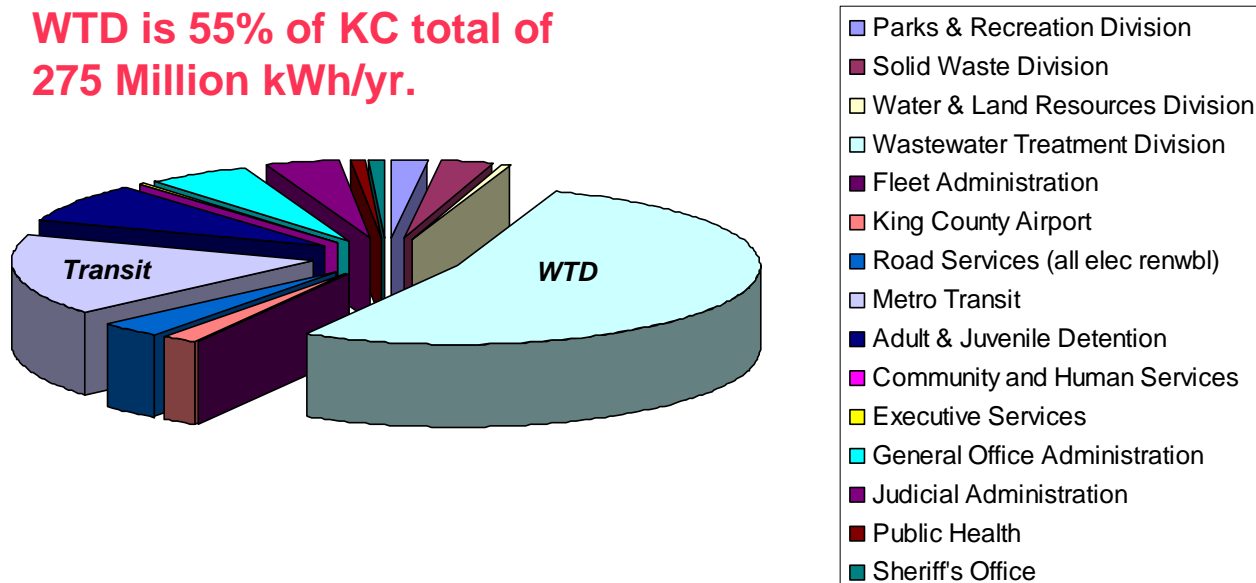
Shares of County Total Energy Use by Division

**WTD is 23% of KC total of 3.45 Trillion BTU/yr.**



Shares of Electric Energy Use by Division

**WTD is 55% of KC total of 275 Million kWh/yr.**



# King County Actions to Meet Goals

1. *Seek to foster broader use & development of clean, renewable fuel technologies through energy demonstration projects.*
2. *Convert 100% of all reasonably usable waste products at landfills & wastewater treatment plants to energy by 2012.*
3. *Set targets to achieve energy savings, using the agreed on baseline energy use & normalizations appropriate to their service functions.*
4. *Adopt mandatory energy efficiency & resource use guidelines for O&M of all facilities.*
5. *Develop specific energy management plans for each energy-intensive or special purpose facility, such as West Point & South Plant.*
6. *Conduct & update efficiency audits of all significant county buildings by 2010 & create prioritized action plan for reducing energy use at each building.*
7. *Aggressively pursue utility grant funding & energy services contracts to supplement county monies for energy efficiency efforts.*



# How will WTD meet these goals?

1. Maintain reliability for energy supply.
2. 10% normalized net reduction in WTD energy consumption by 2012.
3. 50% power come from renewable resources by 2012. (maximize waste-to-energy)

- Energy conservation
  - Capital equipment
  - Behavioral/operational
- Energy generation
  - Optimize use of digester gas

(P.S. they don't end in 2012, they're ongoing)



# Energy Conservation

- Energy plan in development
- Energy teams @ treatment plants
- Facility energy audits
- WTD Green Building team
- Utility data gathering & analysis




# Normalized Energy Usage

- Absolute vs. normalized energy use
- Normalization metrics
  - Different metrics useful for different facility types:
    - Treatment plants: kWh / TSS removed
    - Pump stations: kWh / MG - ft
    - System as a whole: kWh / MG processed



# Energy Generation

- Goal: 50% of power to come from renewable resources by 2012
  - County-wide can meet goal with landfill & digester gas; still evaluating what to do with RECs
- W2E cogen plant – West Point
  - In final design, waiting on EPA grant
  - Rate negotiations with SCL moving forward
  - Renewable Energy Credits (RECs) 
- Fuel cell future
- Other technologies with aid of Technology Assessment unit



# Utility Incentives

- Myriad financial incentives
  - Rebates, grants, bill credits, etc.
- Seattle City Light, Puget Sound Energy, Snohomish County PUD
- Recent example:
  - PSE Schedule 258 grant
  - Replacing (2) pre-aeration blowers @ South Plant

• Equipment & installation cost	\$ 380,858
• PSE Grant	\$ 323,726
• Projected annual savings <i>(less electricity consumed)</i>	\$ 23,312



# Thank you

Questions?

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