Renewable Energy Production on Contaminated Lands

U.S. EPA

Center for Program Analysis

Office of Solid Waste and Emergency Response

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National Energy Picture

- Energy consumption in the U.S. is estimated to increase by 40% increase by 2025
- Energy Breakdown (2005)
  - 87% fossil fuels
  - 6% nuclear
  - 6% hydroelectric
  - 1.4% renewable energy (geothermal, wind, solar, biomass)
- Low and high growth projection scenarios*, energy consumption will increase approximately 33% and 49%, respectively by 2030

*Energy Information Administration

National Energy Picture (continued)

- To meet increasing energy demand, hundreds of new power generation facilities will need to be constructed, including renewable energies
  - State RPS – requiring a percentage of RE to be produced from renewable sources including solar, wind, geothermal, biomass, and biofuels
    - 26 states currently have a RPS
    - AZ – 15% by 2025
    - CA – 20% by 2020
  - States on the west and east coasts have or are developing carbon trading schemes
    - Northeast States Carbon Trading Initiative
    - Western Regional Climate Action Initiative
    - Chicago Climate Exchange
    - California AB32 – Global Warming Solutions Bill
  - Potential future carbon constraints on a national scale

EPA National Efforts

- Agency clean energy and climate change priorities
  - Energy Efficiency
  - Energy Production and Supply
  - Manufacturing and Industrial Processes
  - Transportation and Fuels
- OSWER Focus
  - Solid Waste Management and Lands Management
    - Renewable Energy Development on Contaminated Lands
    - Green Remediation Practices
    - Carbon Sequestration

Role of EPA OSWER

- Encourage and facilitate renewable energy development on contaminated lands
- What are contaminated lands?
  - National Priority List (NPL) sites – a.k.a. Superfund sites
    - Non-Federal and Federal (including BRAC sites)
  - EPA and State Brownfields sites
  - Resource Conservation and Recovery Act (RCRA)
  - UST Sites
  - State Cleanup Sites
  - Former Mining Lands

Preliminary Screening

- Limited universe of contaminated lands
  - NPL sites
  - EPA Brownfields sites
  - Abandoned mines sites
- Over 40,000 sites for screening
- Over 7 million acres of land

Preliminary Screening (continued)

- Criteria
  - Transmission lines, roads
  - Slope
  - Acreage
  - Available solar, wind, biomass, etc. resources
  - Is the site ready for reuse

Example

- Wind Energy Production Potential on Contaminated Lands

- Based on a preliminary screening, approximately 3,980 MW of capacity could be sited on 98,000 acres of contaminated lands
  - Power over 630,000 households per year
  - GHG emissions reductions are equivalent to 1.34 MMTCE
  - Over 1 million cars being taken off the road for one year

Benefits

- A productive reuse strategy that has economic value for otherwise unattractive properties
  - Growth in private equity funds
  - Brownfields cleanup tax incentives
  - State Brownfields incentives
  - Federal and State grants and loans
- Furthers environmental sustainability through reuse of contaminated lands rather than green fields, open space, agricultural land
- GHG reductions
  - Clean energy production
  - Less energy required to develop land with existing infrastructure
  - Reduced reliance on peak power supplies
- Societal Benefits
  - Job creation

Next Steps

- Continue collaboration on this and other renewable energy projects in AZ
- Regular, structured meetings with the parties here today

Questions?

Penelope McDaniel
U.S. EPA
Center for Program Analysis
Office of Solid Waste & Emergency Response
202-566-1932
mcdaniel.penelope@epa.gov