



# CHP and Renewable Energy

**Kim Crossman**

**U.S. EPA CHP Partnership**

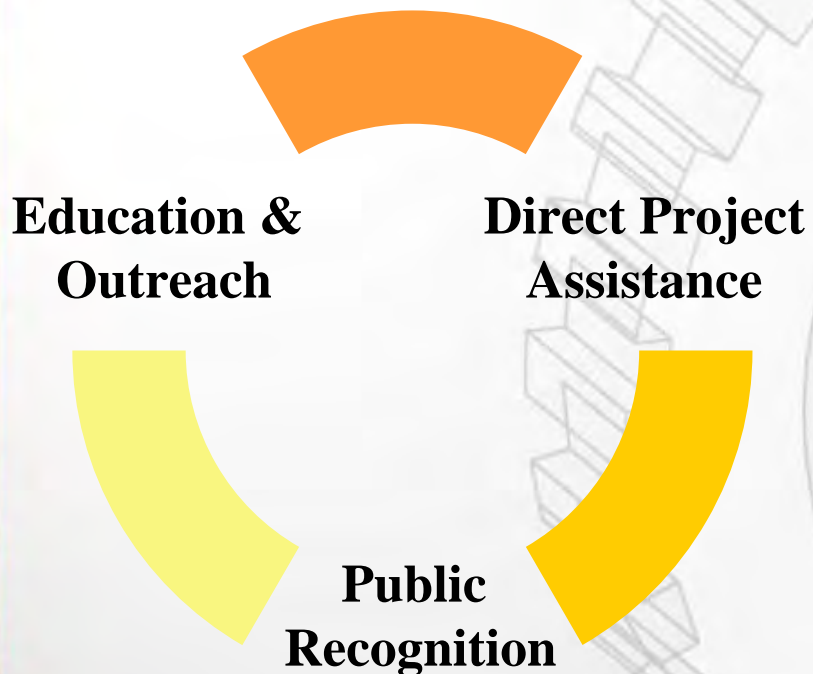
*Presented to the Intermountain CHP Summit*

*May 17, 2006*

# EPA & Combined Heat and Power

- The EPA CHP Partnership is a **voluntary program** that seeks to reduce the environmental impact of power generation by **fostering the use of highly-efficient CHP**
- In the past 4 years, the CHPP has helped Partners put into operation more than **160 CHP projects** representing **3,460 MW** of capacity.

# Core Activities – What We Do



## Facilitate CHP Projects

- Identification
- Development
- Implementation
- Recognition

# CHP: Fossil and Renewably Fueled

## CHP

Efficient  
Clean  
Reliable

### Fossil Fueled

#### Additional Drivers:

- Expanded Renewable Portfolio Standards
- Energy Efficiency Credits (EEC)
- Federal/State grants, tax incentives

### Renewably Fueled

#### Additional Drivers:

- Renewable Portfolio Standards (RPS)
- Renewable Energy Credits (REC)
- State grants, loans, tax credits

# Expanded Portfolio Standards for CHP

- CHP in a separate class with energy efficiency measures:
  - CT (Class III) 4% by 2010
  - PA (Tier II) 10% by 2020
- RPS includes traditionally-fueled CHP
  - HI (DG CHP eligible) 20% by 2020
  - NV (heat recovery only, not electricity gen)
  - ME (pre-1997 only, no new generation)
  - AZ (biomass/biogas-fueled only)

# Energy Efficiency Credits (EECs)/ White Tags™

- Represent 1 MWh of energy savings
- CHP qualifies as an energy savings technology
- 3 states have adopted EECs
  - CT (2007 start-date)
  - PA & NV (soon to follow)

# Benefits of Renewably Fueled CHP

- Produces power at a cost below retail electricity
- Displaces purchased fuels for thermal needs
- Enhances power reliability
- Acts as a hedge against energy price volatility
- Reduces GHG and other emissions
- Eligible as renewable fuel for green power programs
- Qualifies for grant/loan/etc. incentives for renewables
  - [http://www.epa.gov/chp/funding\\_opps.htm](http://www.epa.gov/chp/funding_opps.htm)

# Renewably Fueled CHP

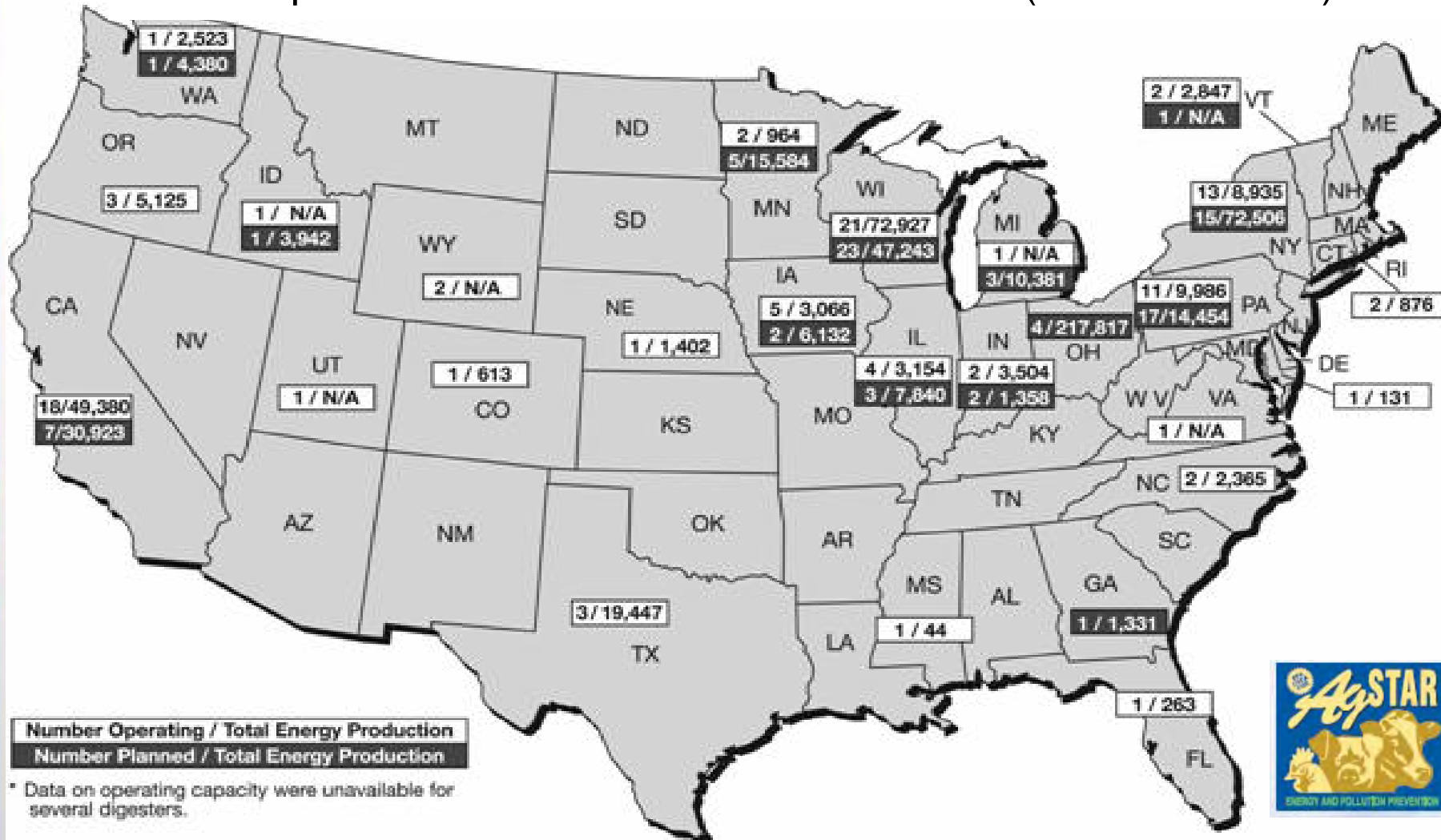
- Biomass fuels
  - Wood waste
  - Switch grass
  - Bagasse
  - Corn stover
  - Biogas
- CHP Applications
  - Farms
  - Landfills
  - Wastewater treatment facilities (anaerobic digesters)

# Biomass CHP Applications

- Wood products, paper, food, furniture industry (wood waste) – 1,643 MW at 139 sites
- Food processing plants, agriculture, universities (agricultural or food processing waste) – 356 MW at 54 sites
- Pulp and paper mills (black liquor) – 12,300 MW at 86 sites

# Farm-based CHP applications

- 101 livestock-based anaerobic digestion systems - many w/ CHP
- GHG potential = 1.3 million tons of methane (4.7 million cars)



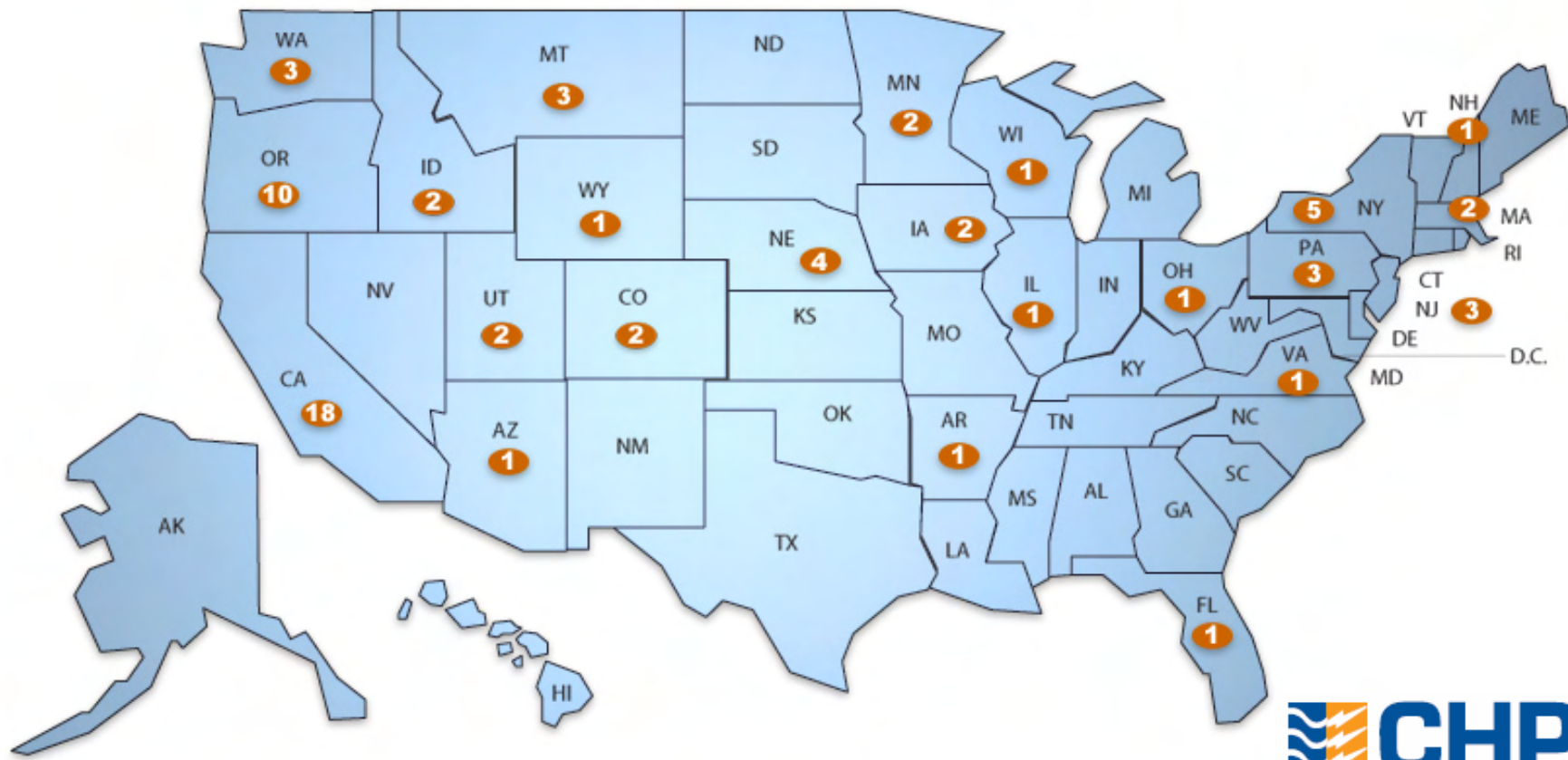
# Landfill Methane CHP Applications

CHP applications - 153 MW at 36 sites



# CHP Applications at Wastewater Treatment Facilities (WWTF)

Biogas CHP applications – 300 MW at 70 sites



# Renewable Portfolio Standards (RPS) & Renewable Energy Credits (RECs)

- 23 RPS/RPG in the U.S.
- Biomass/biogas electricity generation qualifies in all (including renewably-fueled CHP)
- Biomass/biogas electricity generation qualifies for national voluntary RECs
- Thermal portion of CHP does not generate credits

# For More Information

Kim Crossman

Combined Heat and Power Partnership  
U.S. Environmental Protection Agency

***[crossman.kim@epa.gov](mailto:crossman.kim@epa.gov)***

ph.: (202) 343-9388

fax: (202) 343-2208

***[www.epa.gov/chp](http://www.epa.gov/chp)***