



## Capturing Energy Waste

---

**Dick Munson**

*Senior Vice President, Recycled Energy Development, LLC*

March 2, 2009


1

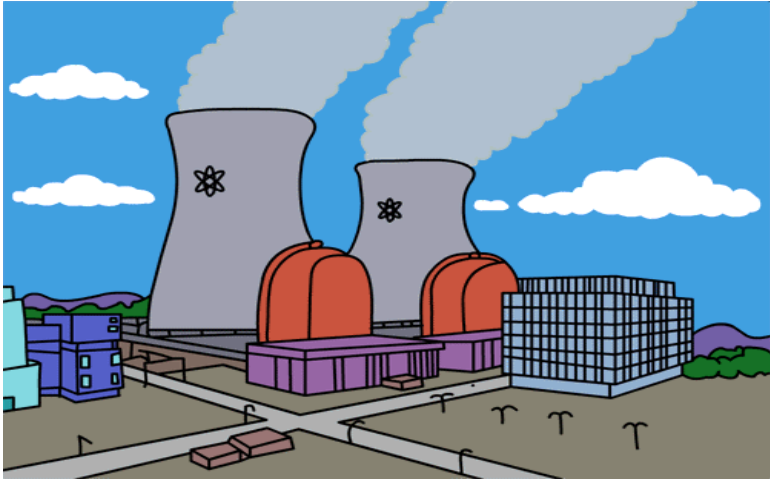


## Profitably Reduce Greenhouse-Gas Emissions

- Reframe the climate debate away from moral outrage versus economic fear.
- Energy waste is vast – creating an opportunity.
- Focus on the inefficient generation of heat and power.
- U.S. manufacturers can increase both efficiency and productivity, resulting in more jobs and less pollution.


2


 **Homer Simpson's Power Plant**  
(Springfield)



3

RED | the new green [www.recycled-energy.com](http://www.recycled-energy.com)

 **Real Electric Generation Plant**  
(Craig, CO)



4

RED | the new green [www.recycled-energy.com](http://www.recycled-energy.com)



## Inefficient Power System

- Three units of fuel are used to generate each unit of power – 33 percent efficiency.
- Efficiency has not improved since President Eisenhower.
- Thomas Edison's power plants achieved 50% efficiency by capturing excess heat to warm nearby buildings.
- U.S. is an international laggard. Germany, Japan, and other industrialized countries capture heat and power at more than twice the U.S. rate.

5




## 220 MW from Steel Smelter's Waste Energy



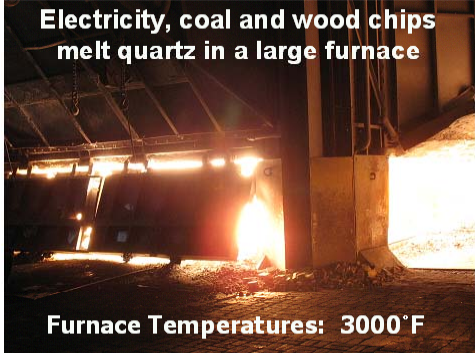
- Smelter saves \$100 million annually.
- Cuts CO<sub>2</sub> emissions by 916,000 metric tons/year

Courtesy Primary Energy

6

 **45 MW from Silicon Production** (Alloy, WV)

**Electricity, coal and wood chips melt quartz in a large furnace**




**Furnace Temperatures: 3000°F**

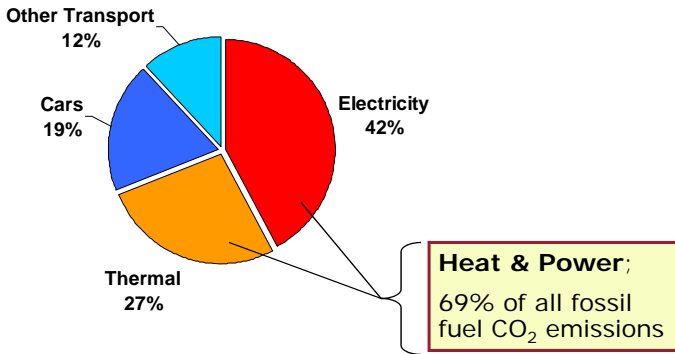
- Recycles exhaust into 45 megawatts
- More efficient plant will expand production and jobs by 20%
- We are taking silicon manufacturing back from China!

7

RED | the new green [www.recycled-energy.com](http://www.recycled-energy.com)

 **US Carbon Dioxide Emissions, 2005**

*Breakdown of Emitting Sources:*



Source	Percentage
Electricity	42%
Thermal	27%
Cars	19%
Other Transport	12%

**Heat & Power;**  
69% of all fossil fuel CO<sub>2</sub> emissions

8

RED | the new green [www.recycled-energy.com](http://www.recycled-energy.com)



## Thank You

**Dick Munson**  
**Recycled Energy Development**  
[dmunson@recycled-energy.com](mailto:dmunson@recycled-energy.com)  
[www.recycled-energy.com](http://www.recycled-energy.com)

9