

Chipping Our Way to Energy Independence



DISTRICT ENERGY ST. PAUL

Making Wood Work: Local Energy Solutions

October 16, 2007

Chipping our way to *energy independence.*

- Overview of District Energy St. Paul
- Bringing “Green Energy” to Saint Paul
- Energy Independence...What is Possible?

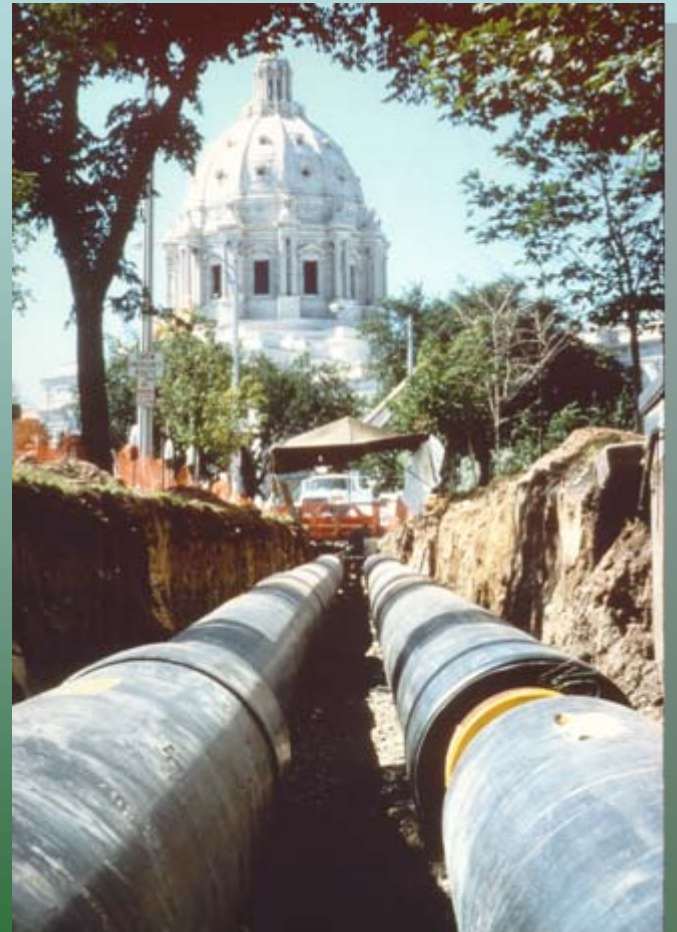


Our history

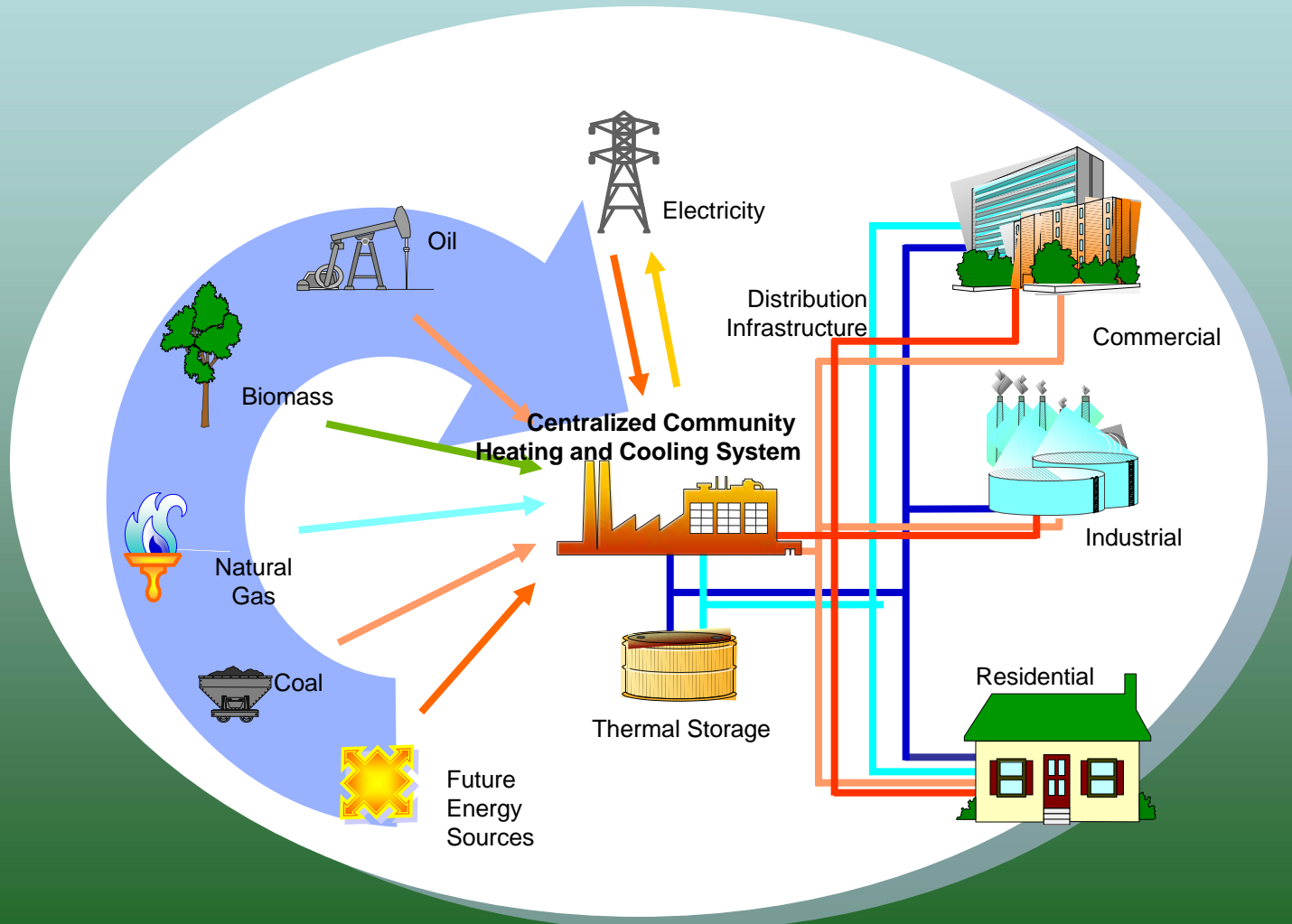


Our mission

“Be the preferred provider of community energy services that benefit our customers, the community and the environment.”

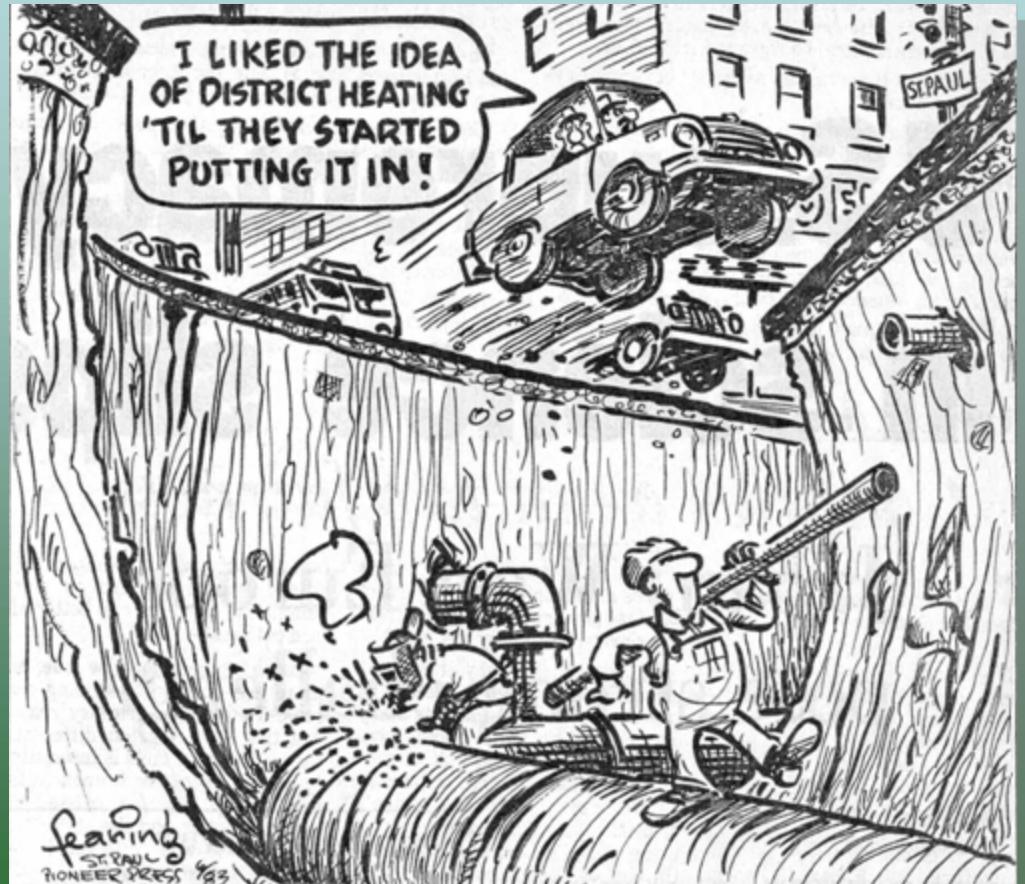


Saint Paul's community energy system

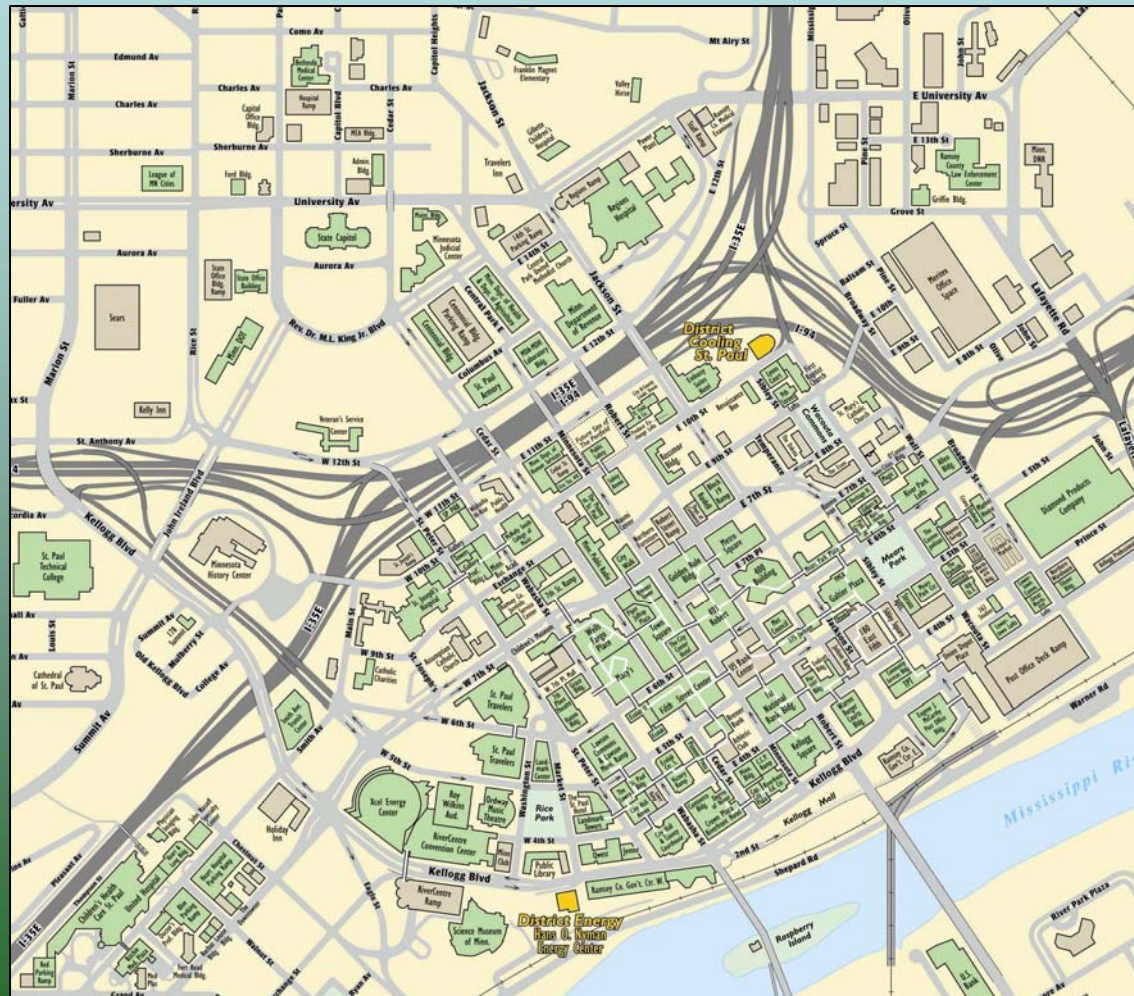


Our approach

- Customer service
- Stable rates
- Fuel flexibility
- Energy efficient
- Low emissions
- Low maintenance
- Integral to community



Heating and cooling Saint Paul



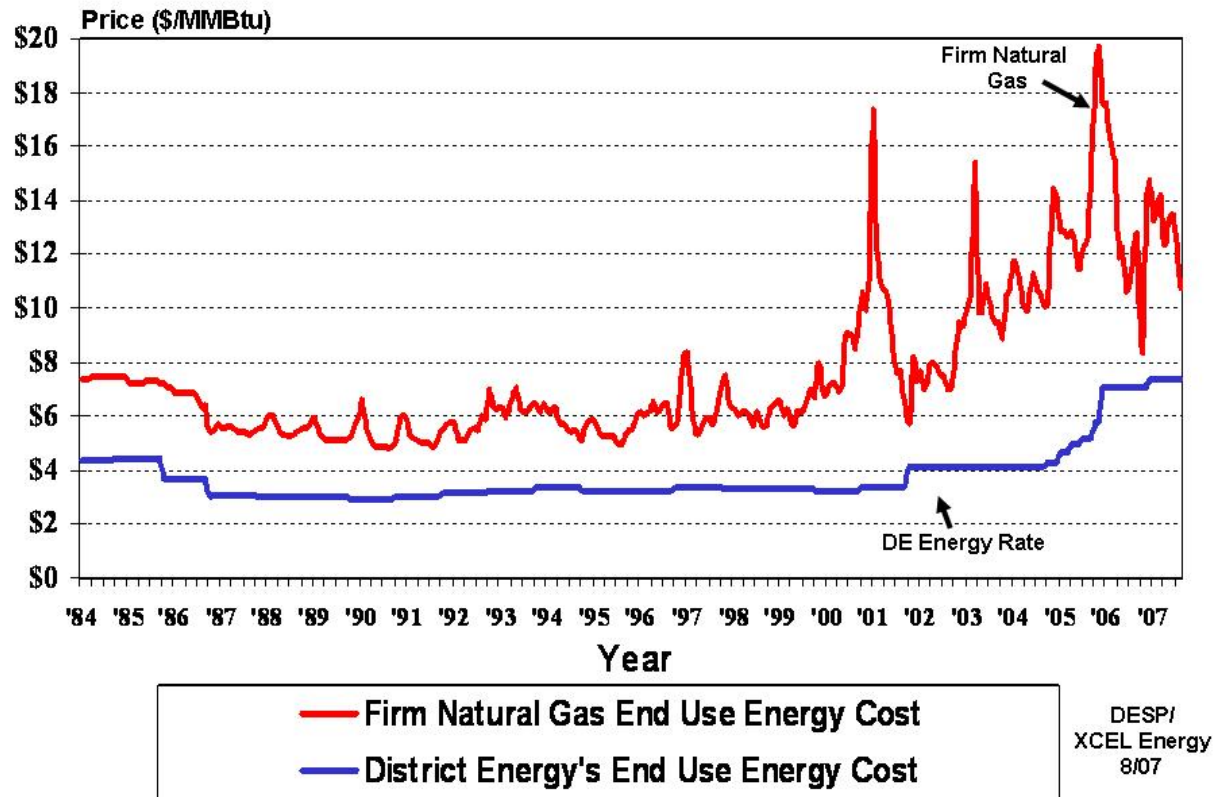
District Energy today

- Serves more than 80 percent of the downtown area - over 31 million square feet
- Eliminated more than 150 smokestacks
- Reduced sulfur dioxide and particulate emissions by more than 60 percent
- Twenty-four years of outstanding reliability and rate stability



Rate stability

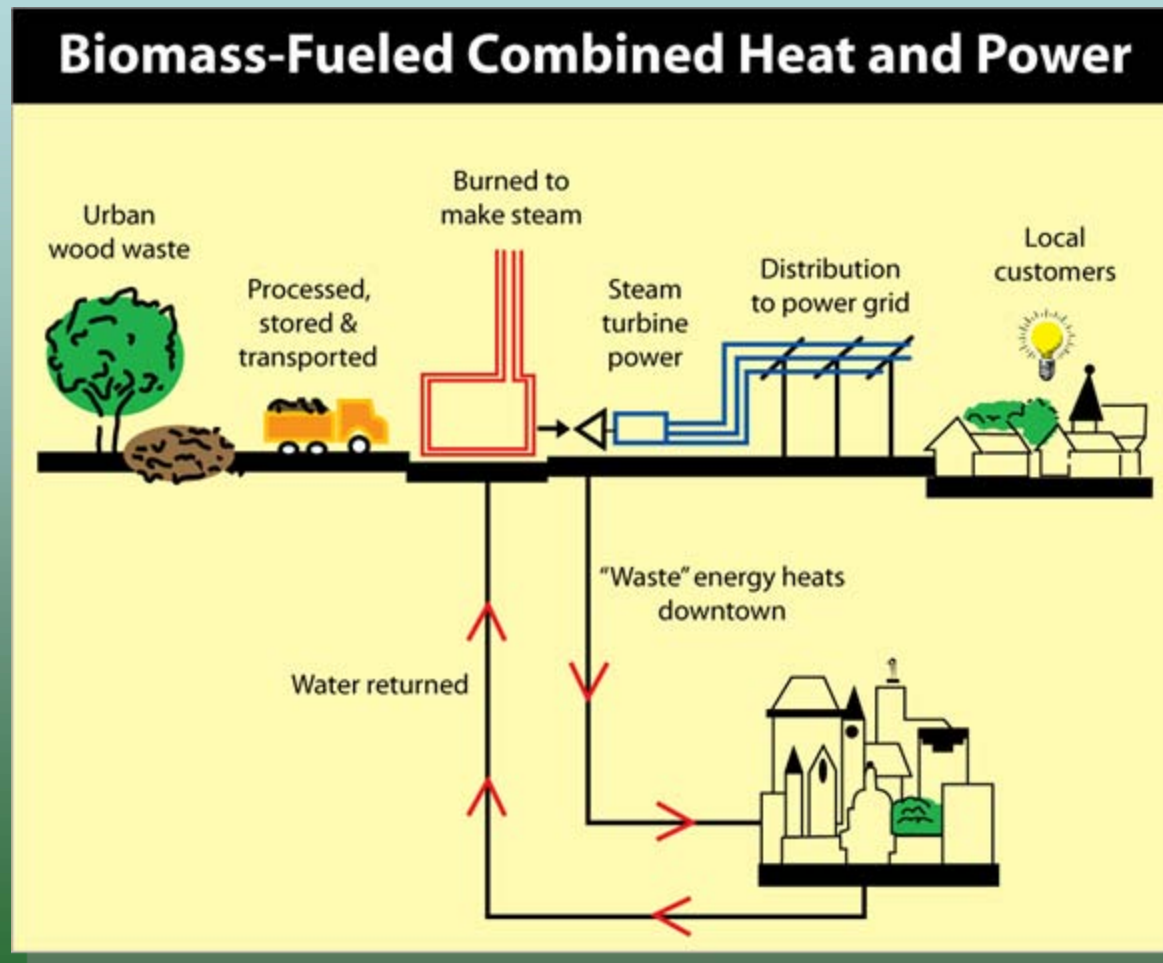
Energy Charges: District Energy vs. On-Site



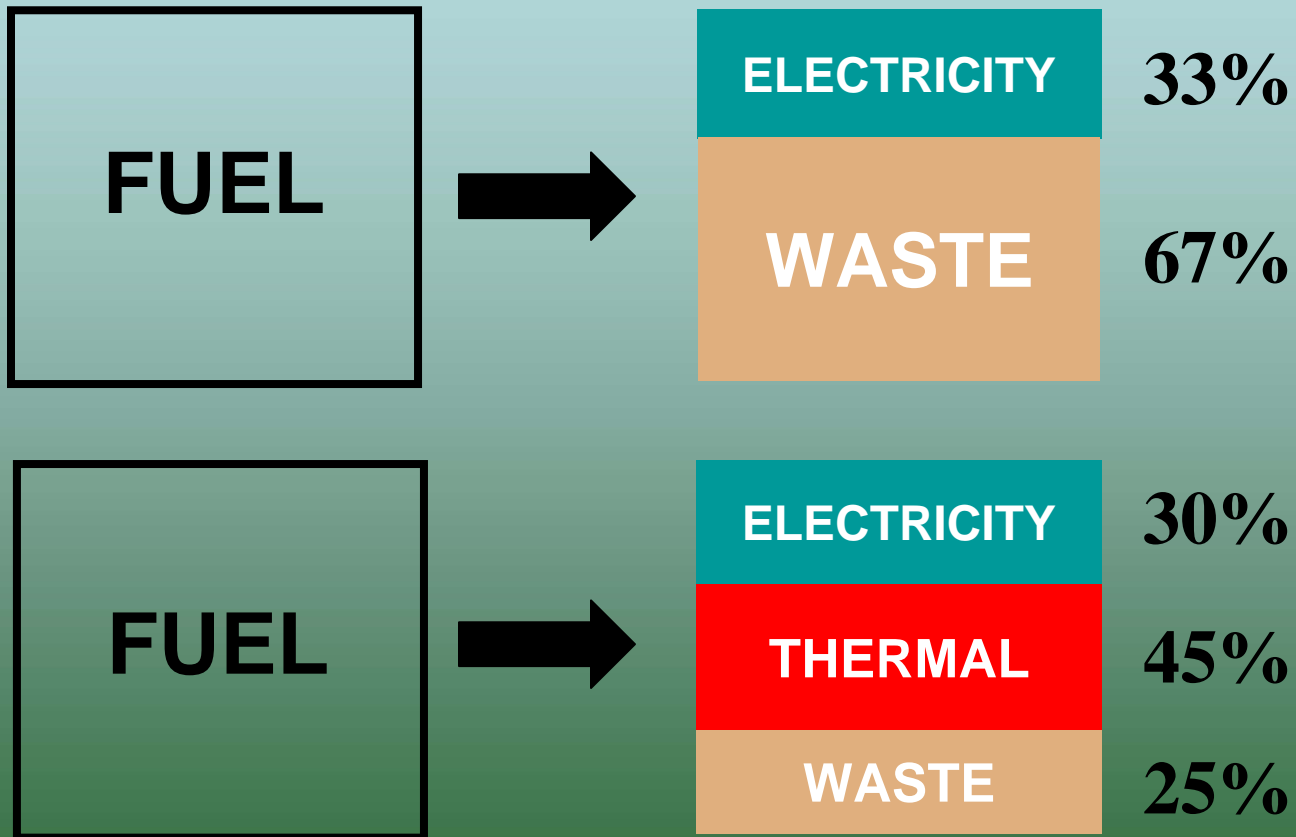
Bringing “green energy” to Saint Paul



What is combined heat & power?



Energy efficiency of CHP



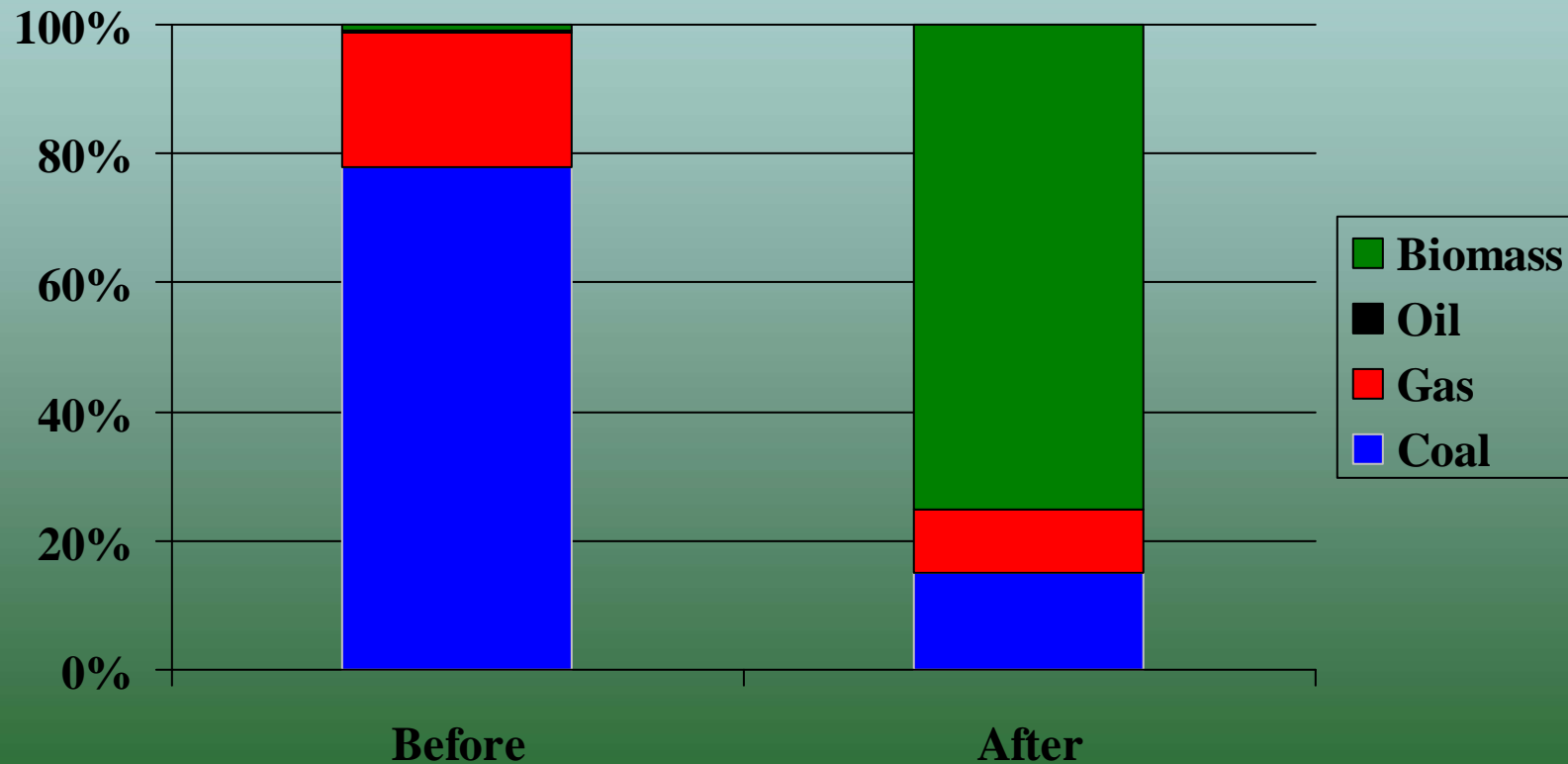
Why wood waste?

- Available in metro area
- Disposal problem
- Economically viable
- Community based

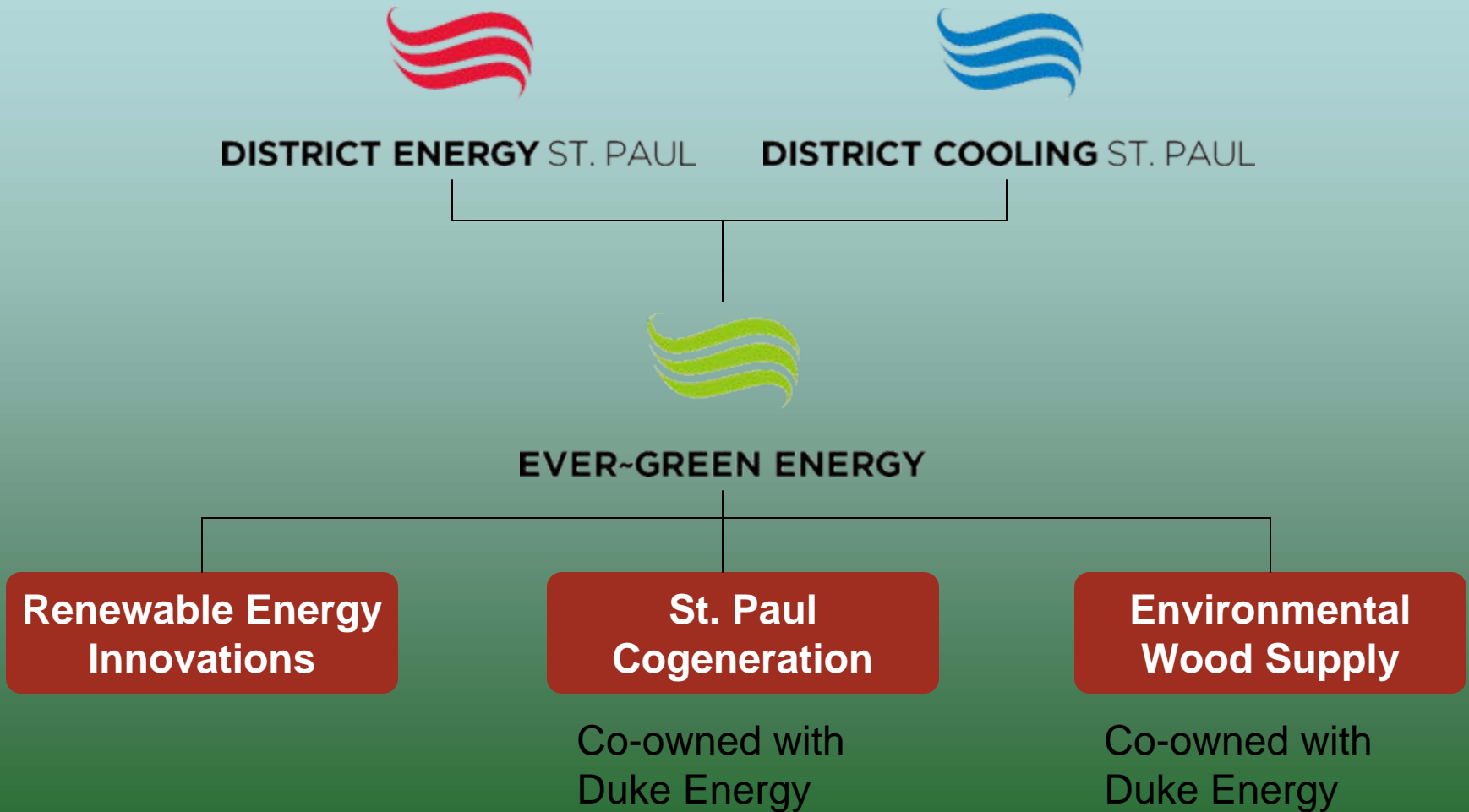


Fuel diversification (2007)

Before and after wood-fired CHP project...



Company structure



Benefits of CHP & biomass

✓ Customers



- Competitive energy prices
- Marketing – served by renewable energy



Benefits of CHP & biomass

✓ Community



- Keeps energy dollars local
- Competitive energy prices
- Fuels economic growth
- Efficient use of resources
- Marketing opportunities
- Improves power grid



Benefits of CHP & biomass

✓ Environment

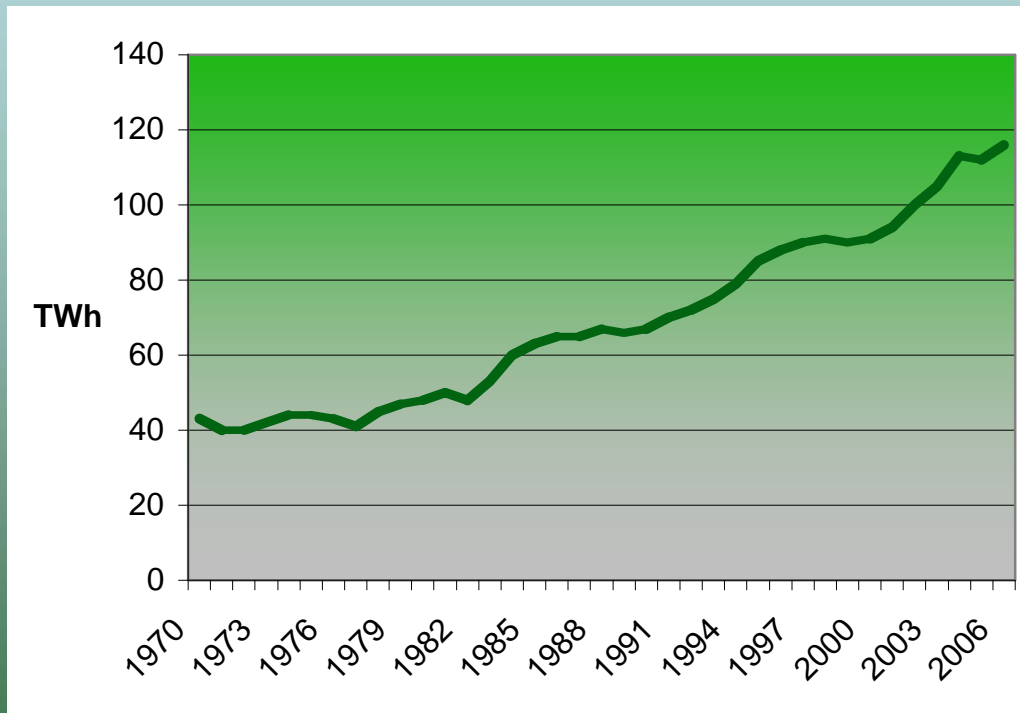


- Decreased emissions
 - Air contaminants
 - Greenhouse gases
- Improved efficiency
- Decreased waste



Energy Independence.... What is Possible?

Bioenergy development in Sweden 1970-2006



Source: SVEBIO

The bioenergy share of the total energy use

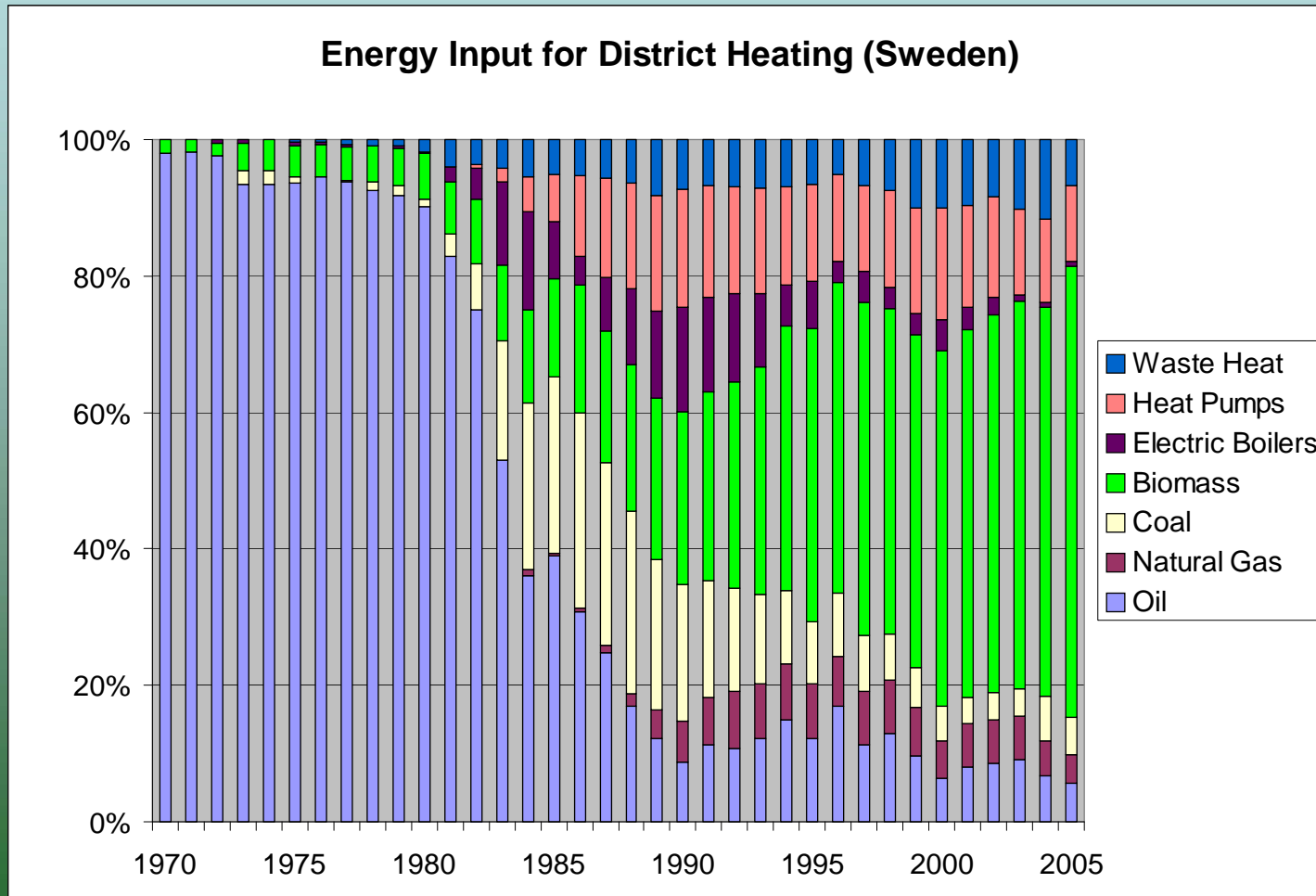
- 1970: 9%
- 1980: 11%
- 1990: 15%
- 2000: 20%
- 2005: 26%







Energy Independence.... What is Possible?



Thank You!



DISTRICT ENERGY ST. PAUL

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