

Green Heat

*Heating & cooling the world
with renewable energies*

Conservation / efficiency

Power - green power
Fuel - green fuel
Heat - green heat

Residential - PJ

TOTAL	1,458
Appliances, lights	255
Space cooling	<u>17.7</u>
Water heating	<u>311.8</u>
Space heating	<u>873.4</u>

1,203

83%

2003 Comprehensive Energy Use Database, Office of Energy Efficiency, NRCan



Residential - Mt

TOTAL	79.8
Appliances, lights	16
Space cooling	<u>1.1</u>
Water heating	<u>17.4</u>
Space heating	<u>45.1</u>

64

80%



Commercial - PJ

TOTAL	1,180
Motors, equip, lights	387
Space cooling	<u>73.4</u>
Water heating	<u>76.2</u>
Space heating	<u>644.0</u>

794

67%



Commercial - Mt

TOTAL 69.3

Motors, equip, lights 25
 Space cooling 4.5
 Water heating 4.3
 Space heating 35.8

45 **64%**



Mitigation Potential

Res		C/I
45	Space heating	36
17	Water heating	4
1	Space cooling	5
<u>109 Mt</u>		

All coal-fired power generation in Canada = 107 Mt





Biomass heating



RENEWABLES.CA

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Solar thermal water heating



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Solar thermal air heating



Earth Energy (geothermal heat pump)



Lessons Learned:

- 'Behind the meter' / electron obsession
- On-site, no 'tags'
- Lower grid congestion
- High employment / local content
- Natural gas displacement
- Consumer comfort, cooling load
- Dispatchable / DSM



Next Steps:

Global: Call for EU directive
UK Renewable Heat Obligation
Refocus editorials

Canada: Government procurement / assessment
GreenTherms Standard
Emission credits
Baseline data
Training / certification





Green Heat Silver Bullets

www.GreenHeat.org / www.GreenTherms.com

