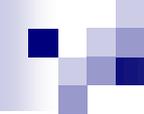




DEP 2008 Carbon Footprint

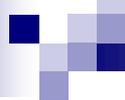
Owen Barrett

7/16/2009



Monitoring Consumption

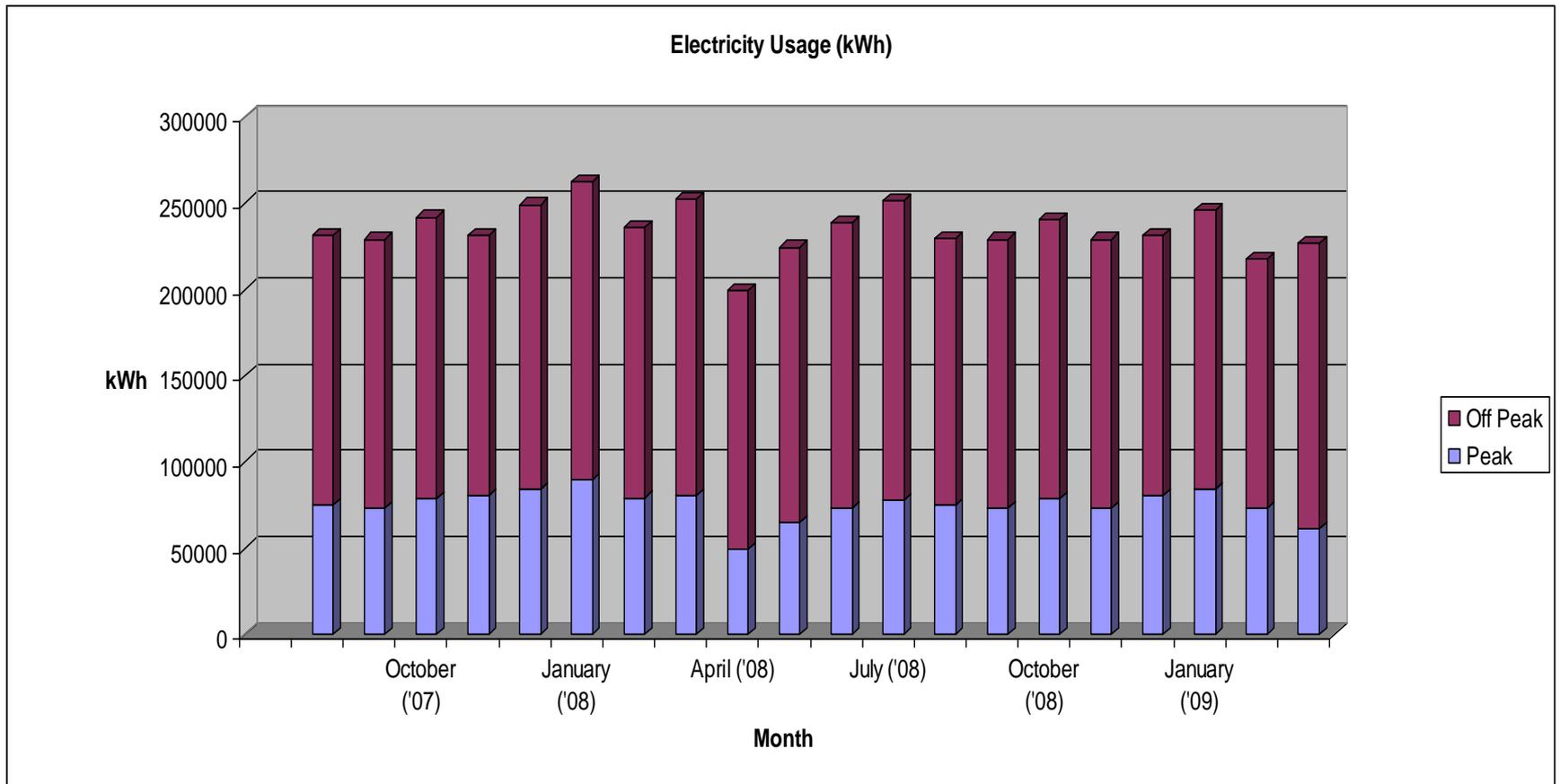
- Electricity (kWh): Aug '07 – Mar '09
- Chilled Water (Day Ton): Jan '08 – Mar '09
- Hot Water (mmBtu): Jan '08 – Mar '09



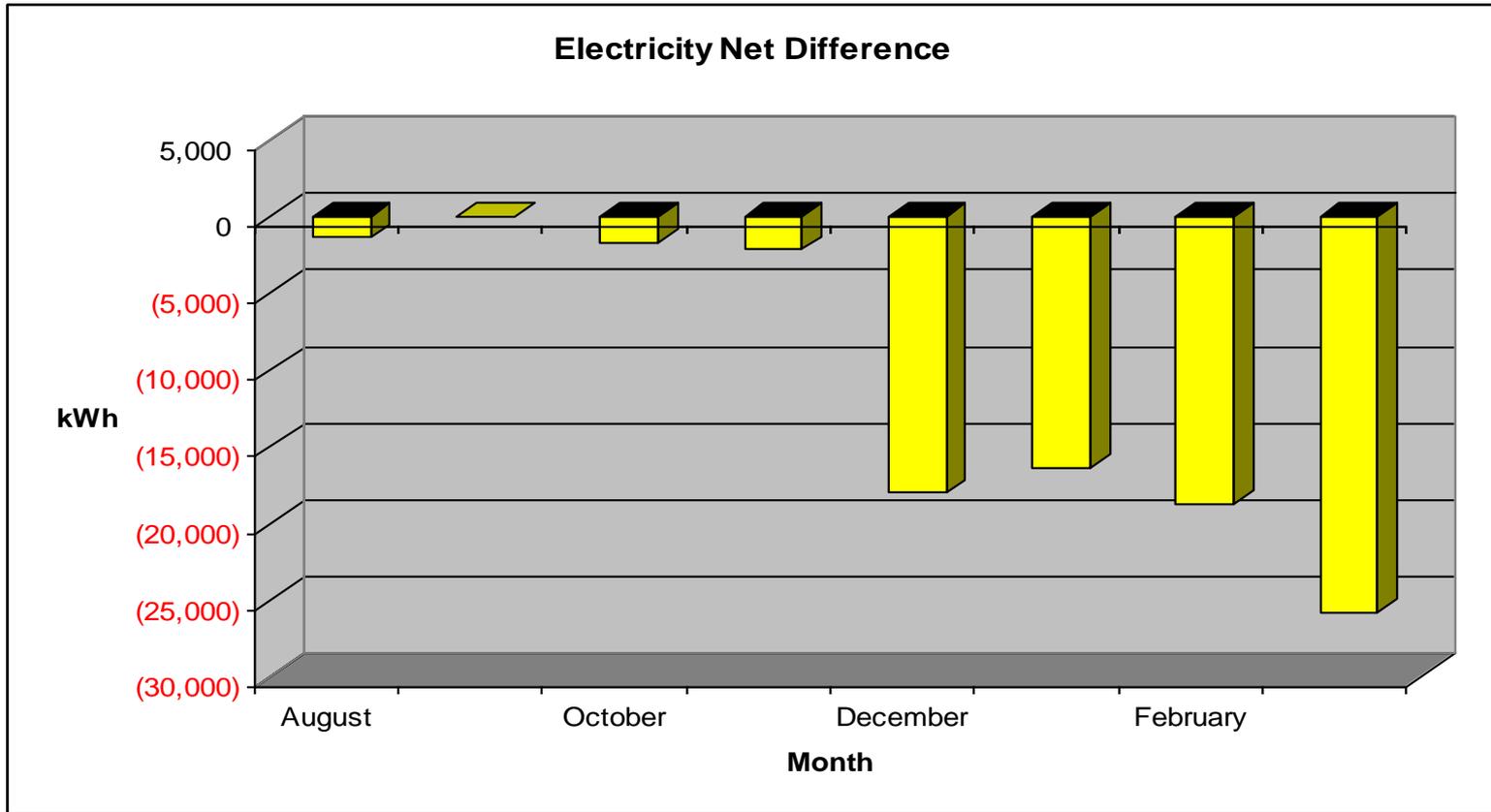
Monitoring Consumption Cont.

- Electricity: CL&P
- Hot and chilled water: originally from Ten Companies, now owned by CT

Electricity Consumption (kWh)

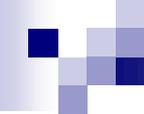


'08/'09 Electricity Comparison



Electricity Calculations

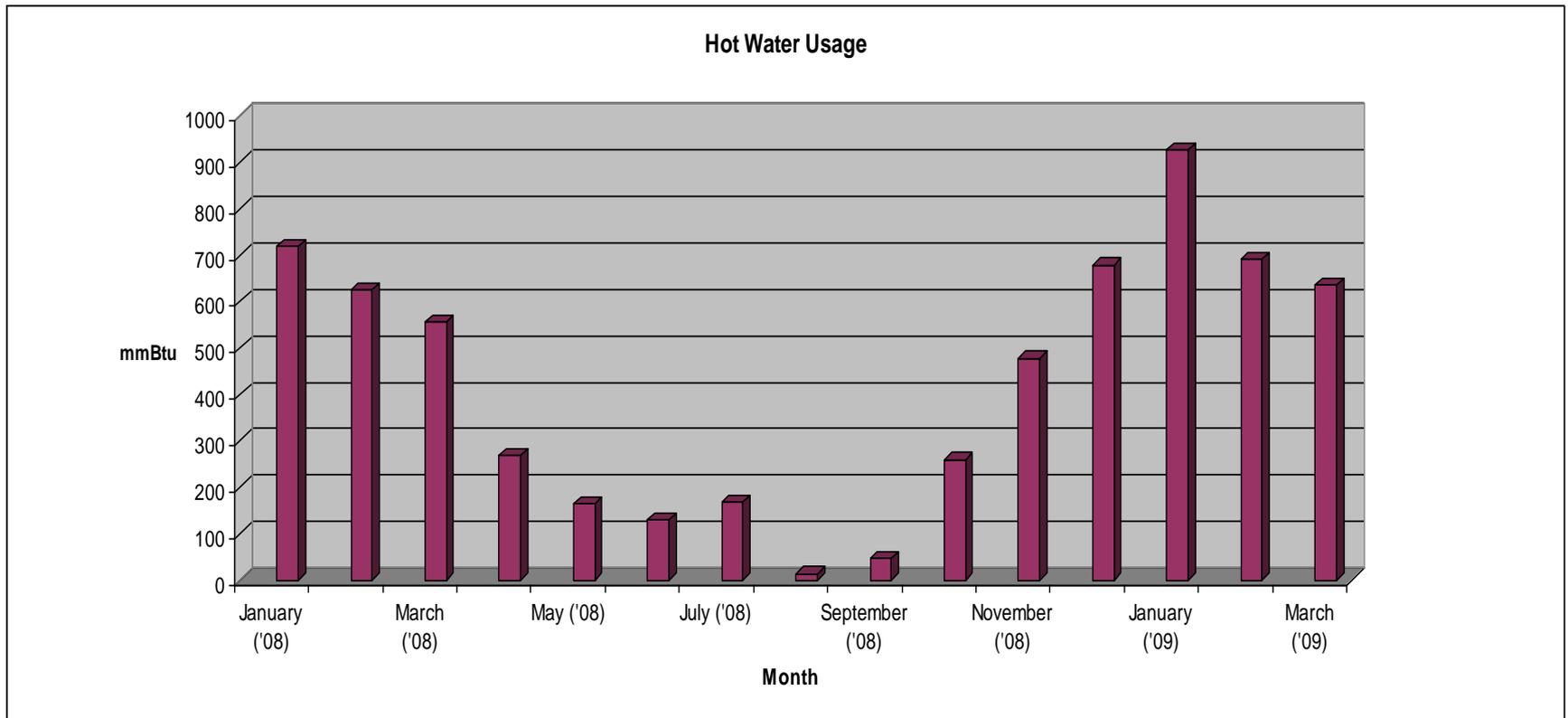
- 2008 usage: 2,826,456 kWh
- Line loss of 8%
- Total 2008 usage = 3,052,572 kWh
- CACP Software: 10,418 mmBtu
- CACP Software: 1,136 tons of CO₂



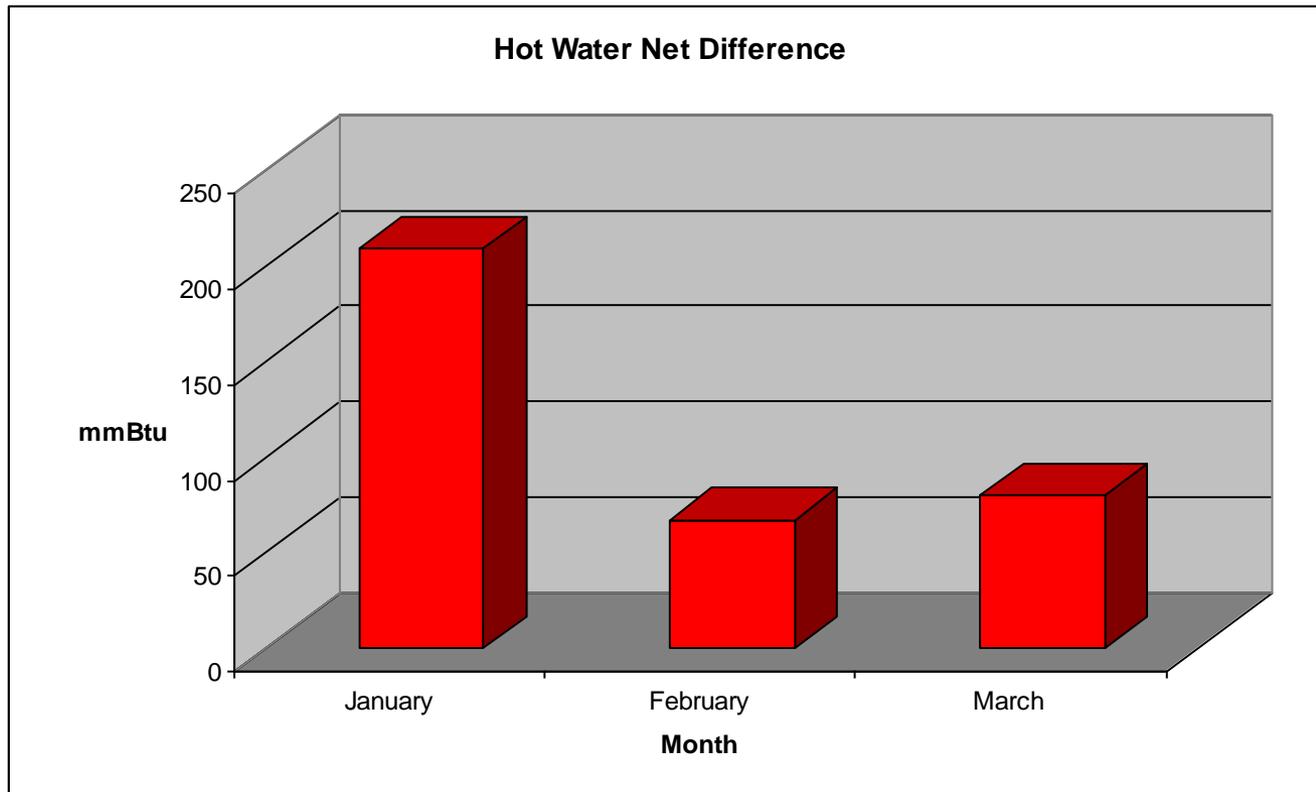
Hartford District Energy System

- Hot water loop is driven by natural gas and co-generated from Aetna
- Cold water loop is electricity driven and independent

Hot Water Consumption (mmBtu)



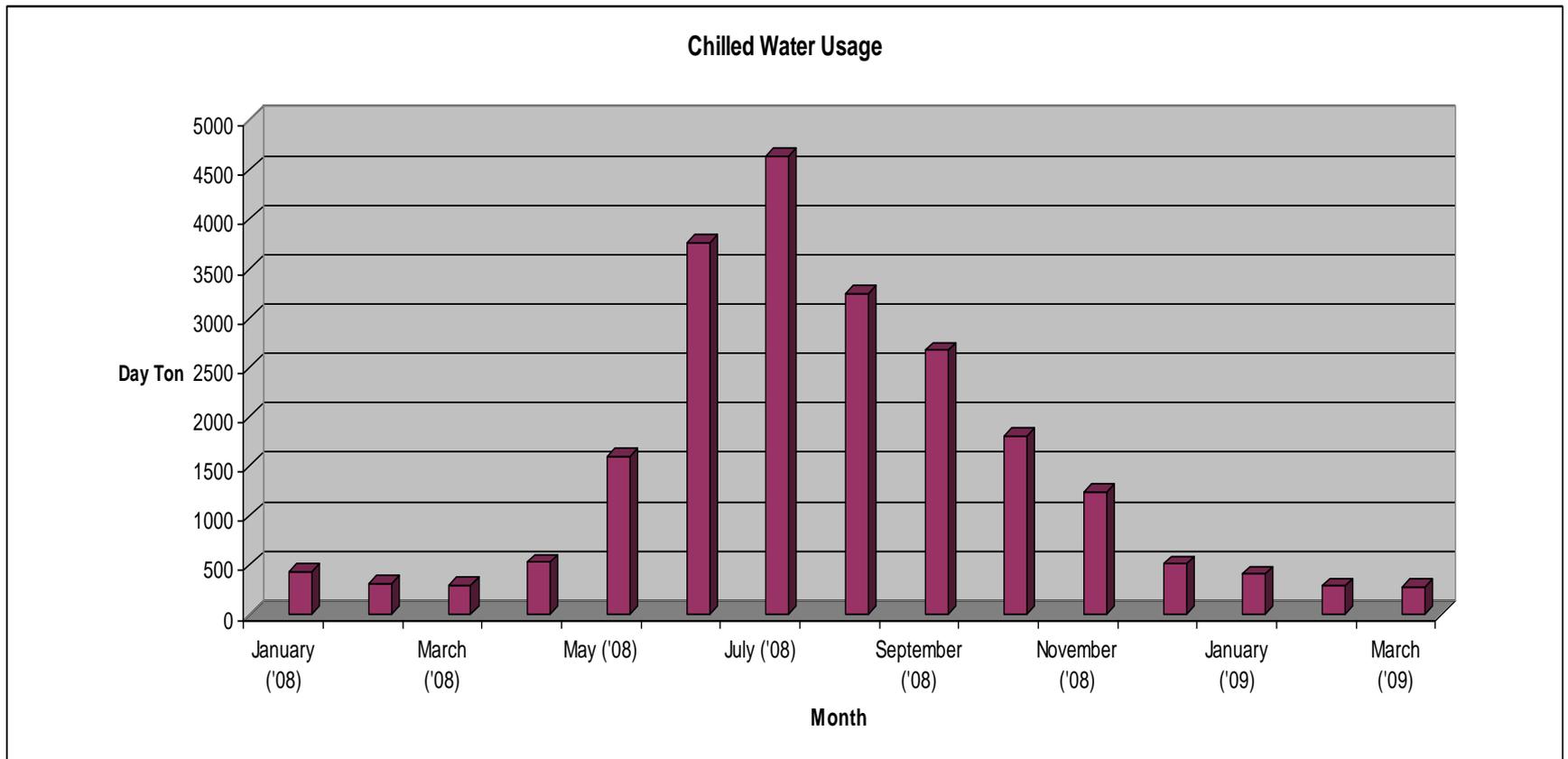
'08/'09 Hot Water Comparison



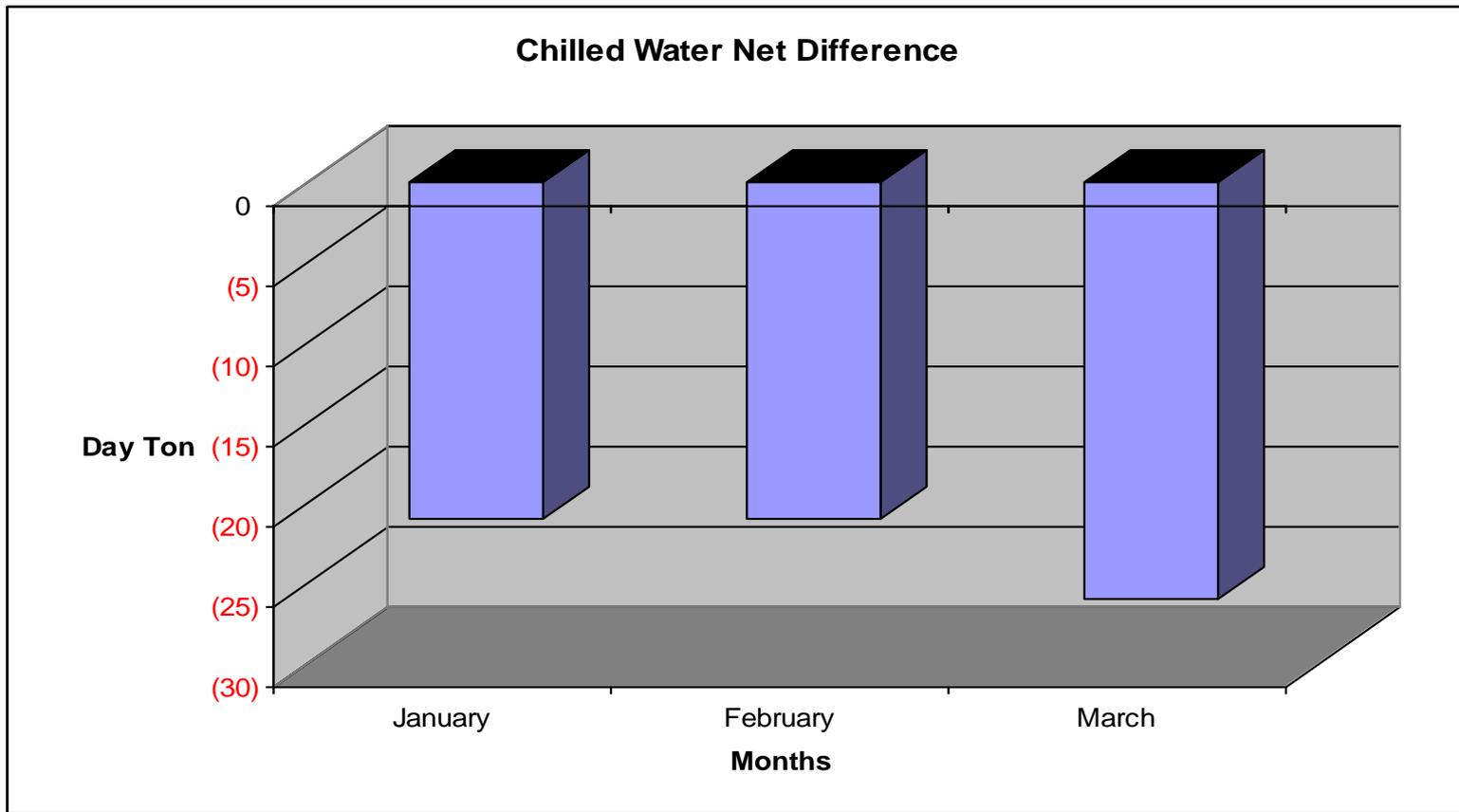
Hot Water Calculations

- 2008 usage: 4,106 mmBtu of hot water
- Line loss of 2%
- Total 2008 usage = 4,188 mmBtu
- 75% fuel efficiency at Aetna
- = 5,584 mmBtu of natural gas
- 117 pounds of CO₂ per mmBtu
- = 327 tons CO₂

Chilled Water Consumption (DT)



'08/'09 Chilled Water Comparison



Chilled Water Calculations

- 2008 usage: 21,041 DT of chilled water
- Line loss of 2%
- Total 2008 usage = 21,462 DT
- 1 DT chilled water = .288 mmBtu electricity
- 1 mmBtu = 153.8 pounds CO₂
- = 475 tons CO₂

2008 Carbon Footprint Calculations

- Electricity: 1,136 tons of CO₂
- Hot Water: 327 tons CO₂
- Chilled Water: 475 tons CO₂

- TOTAL = **1,938 tons CO₂**

CACP Software Calculations

- Electricity: 1,136 tons CO₂
- Hot Water: 352 tons CO₂
- Chilled Water: 609 tons CO₂

- TOTAL = **2,097 tons CO₂**



Bill Gerin (DPW)

- In charge of energy projects within CT
- Wants all buildings registered with Energy Star and eventually certified
- DPW is one of few CT governmental agencies with money in their budget
- (860) 713-5616
- Bill.Gerin@CT.gov



Sources

- Rob Thornton @ IDEA
- Bill Gerin & Steve Murphy @ DPW
- EIA
- Connecticut Light and Power