

Pollution Prevention Roundtable

Industrial, Commercial and
Institutional P2

April 29, 2004

Alex Winch

Beach Solar Laundromat

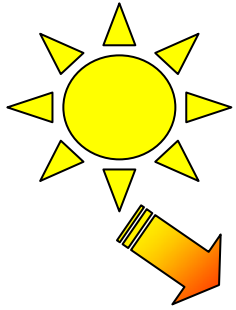


BEACH SOLAR LAUNDROMAT
Laundromat
BEACH SOLAR

Happy Homes
Doggy Daycare Centre
(416) 693-4830
www.happyhomes.ca
Fido... Play!

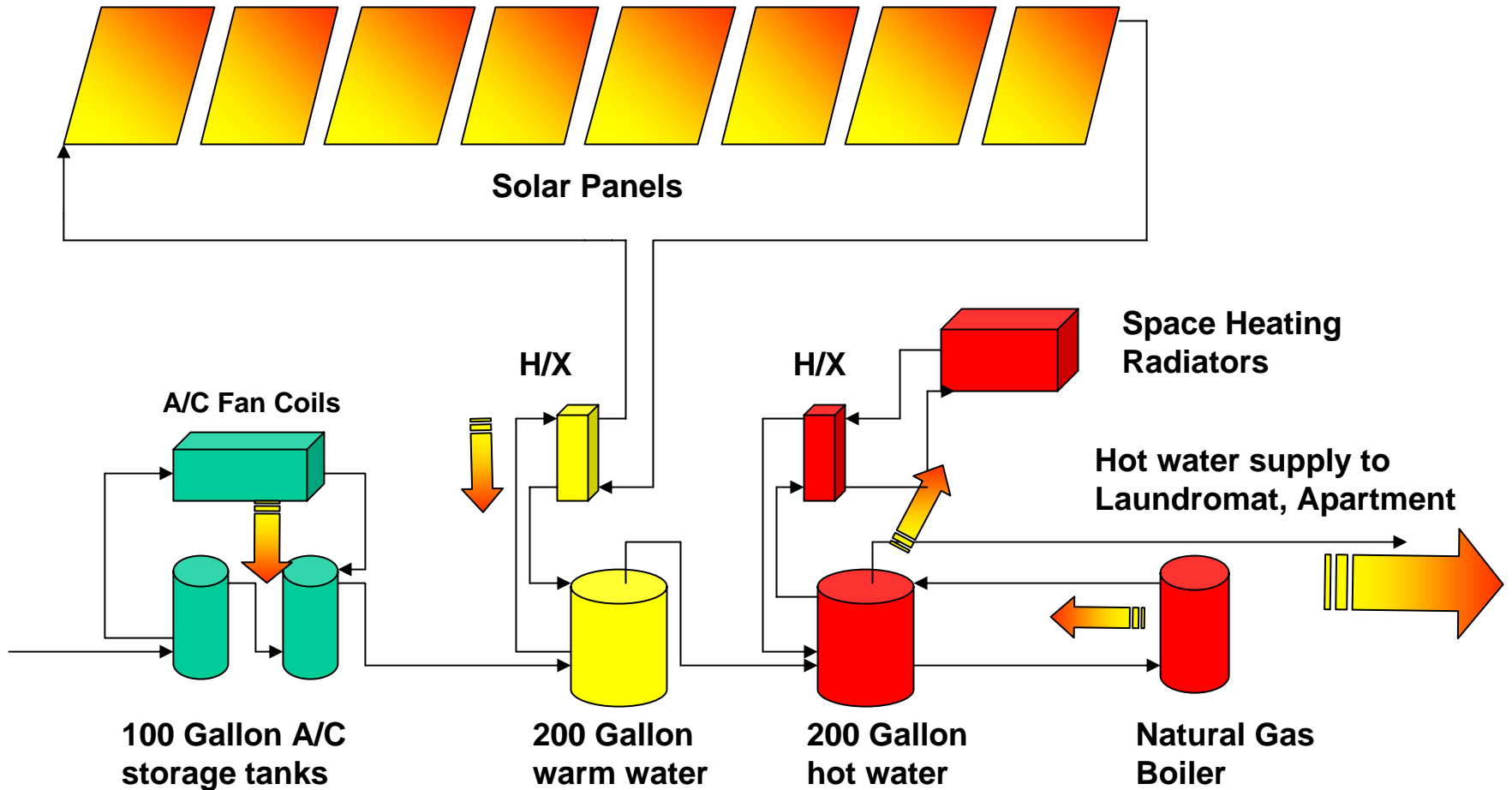
BEACH SOLAR
LAUNDROMAT
WASH • FOLD
SERVICE

Beach Solar Laundromat



Beach Solar Laundromat

Coloured Arrows Indicate Energy Flows





WASH n FOLD
SERVICE





SEE
RANDOM THOUGHTS
TAMORROW
yrbnuu

Several framed notices and posters are mounted on the wall above the washing machines.

NO SMOKING
No open flames or smoking are permitted in this facility. Violation will result in immediate removal from the premises.

Beach Solar Laundromat





Beach Solar Laundromat

Pumps and Heat Exchangers

Radiator's
heat
exchanger



Solar heat
exchanger

Energy
flow meter

Controller

Insulated Storage Tanks

Hot
Storage
tank



Cold
storage
tank

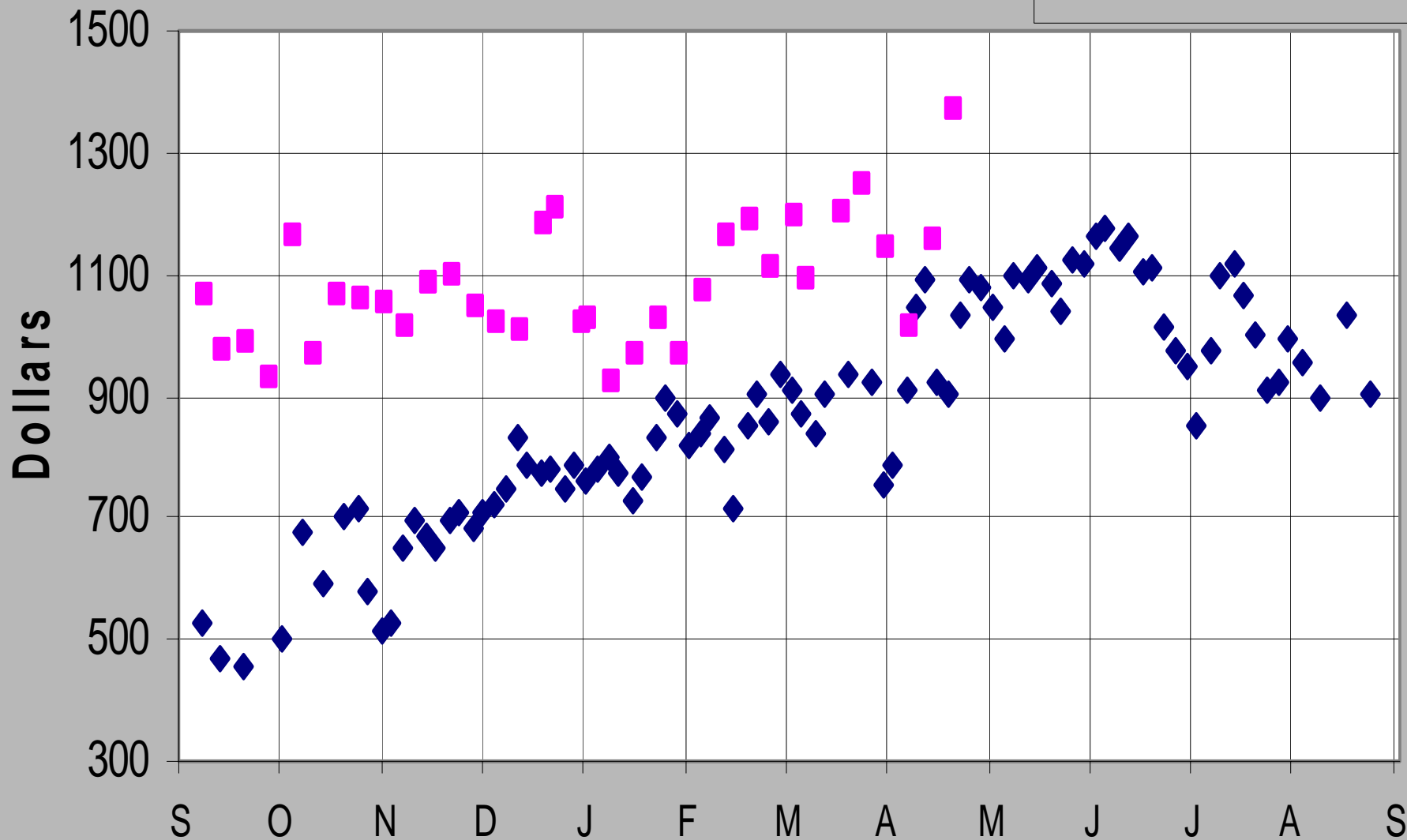
Air Conditioning

- Circulates cold municipal water through ceiling-mounted fan coil assemblies
- Warmed water used in Laundromat
- Electricity consumption up \$1.00 per day
- Gas consumption down \$1.60 per day
- Air chilled 6 degrees Fahrenheit

Weekly Revenue

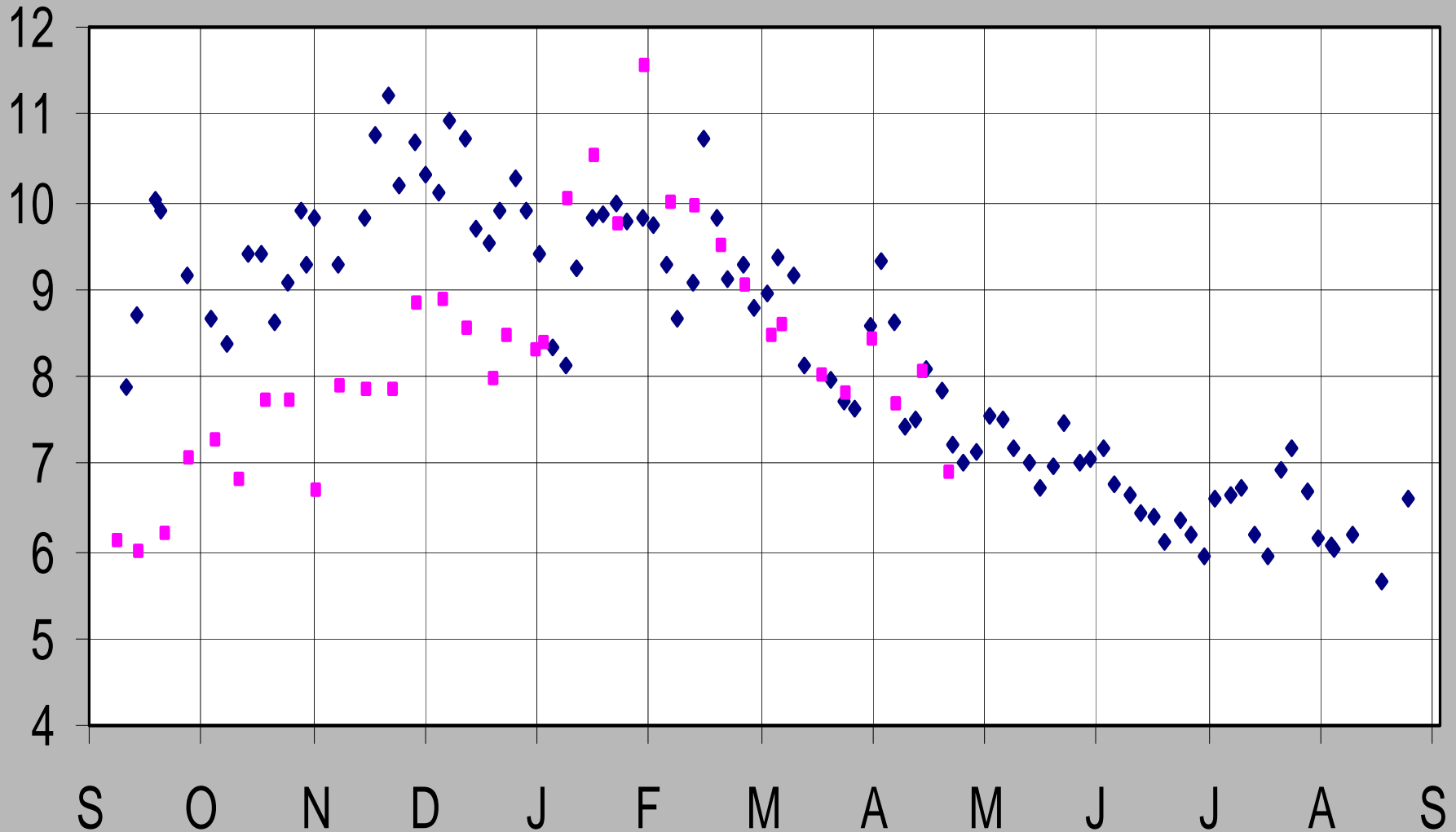
◆ 2002-03

■ 2003-04



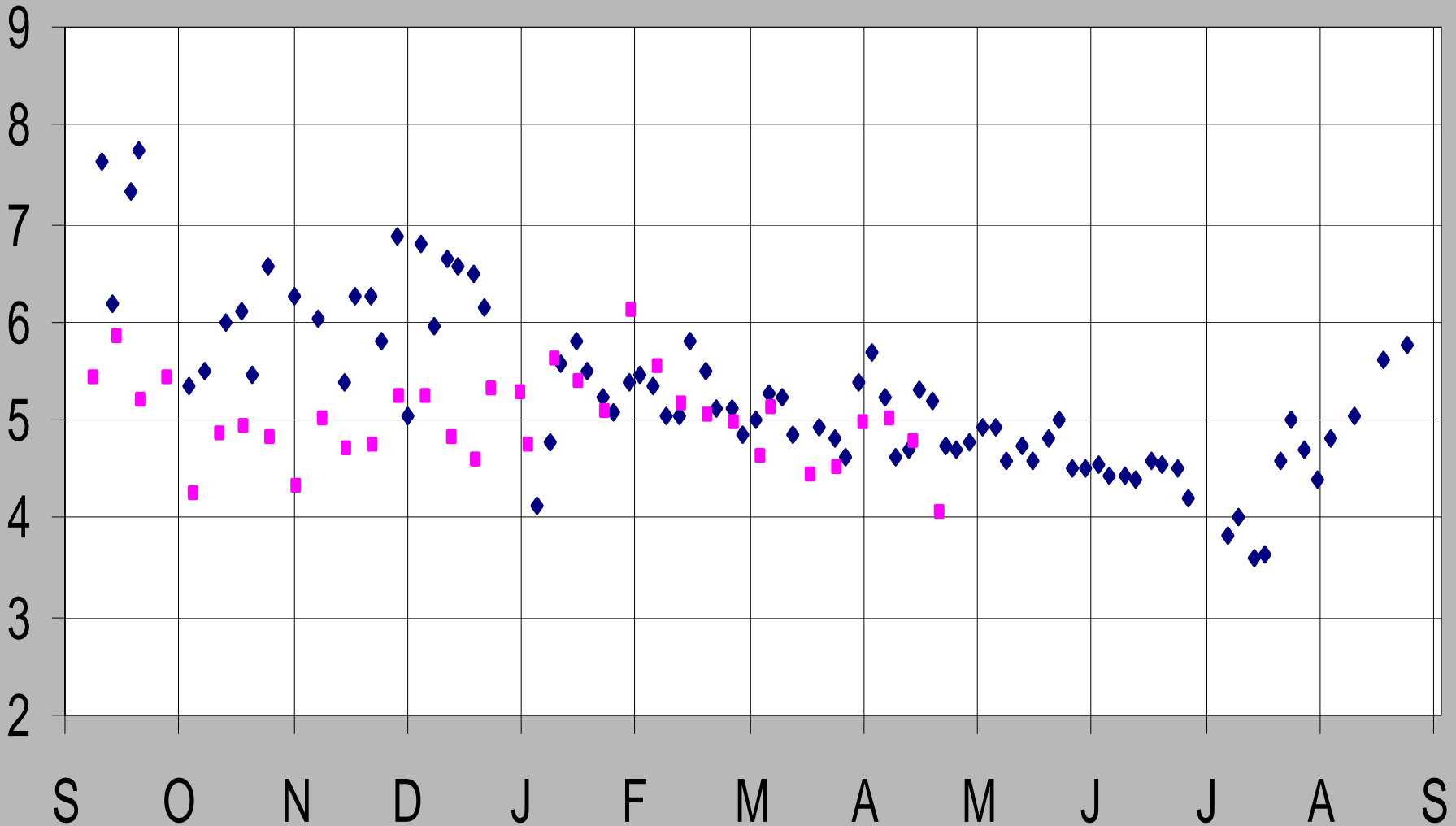
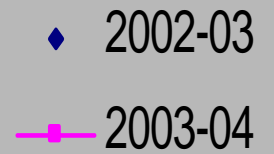
Gas Usage

M3 Gas Use per M3 Water



Electricity Usage

kWhr Use per M3 Water

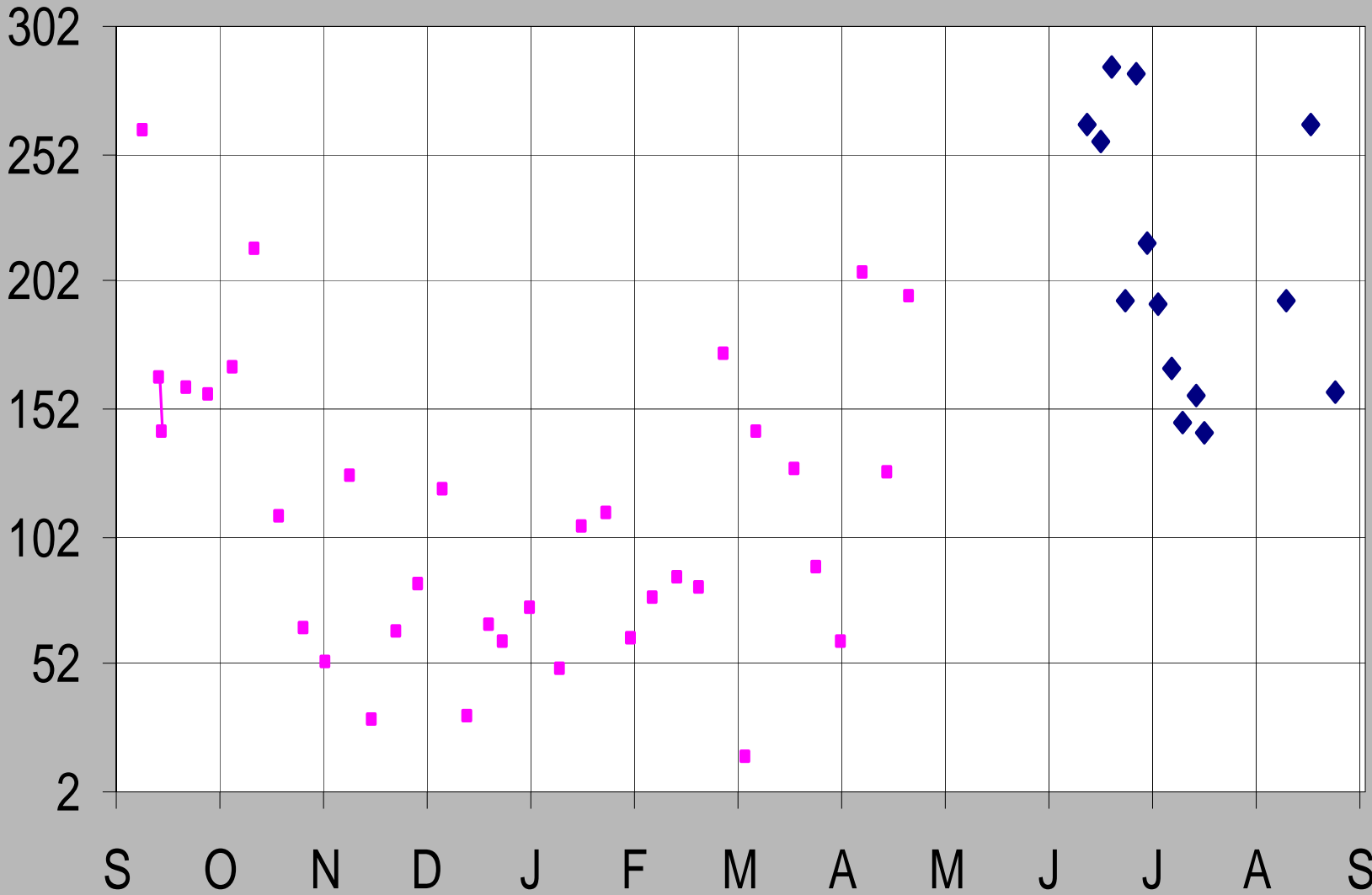


Solar Energy Produced

Average Daily Thermal MJ

using eight 4' x 8' panels

2003-04
2002-03



Wash and Fold

- Launched in April, 2003 with Neighbourhood Link / Senior Link (NL/SL)
- Laundromat injected capital to fund startup
- NL/SL hires and trains recent immigrants from their Newcomers program
- NL/SL keeps all profits after expenses of soaps, machine usage and repayment of startup capital

Next Steps



- DSM Project with OCS-Crestech, Enbridge Gas Distribution and Solcan

Solar Thermal Utility Company

- Install Panels on Third Party Customers' Roofs
- Retain Ownership of Panels, bill customer for energy delivered
- Energy Flow Meter transmits data to central office via e-mail
- Panels can be located anywhere in the world

Solar Thermal Utility Company

- Assumptions:
- Gas costs CDN\$0.41 per m³ delivered
- Each m³ has theoretical energy of 38 MJ
- combined boiler and combustion efficiency is 50%
- Each 4' x 8' panel captures 9 GJ per year
- Then each panel reduces natural gas bill by CDN \$194 per year

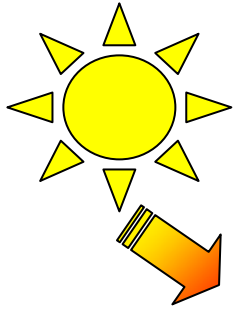
Solar Thermal Utility Company

Capital Costs

- Per panel, installed with heat exchangers, controllers and storage tanks: CDN\$2,500
- 25% REDI funding reduced net cost to CDN\$1,875
- Reduced Gas Bill of \$194 represents a 10.3% return on cost of capital

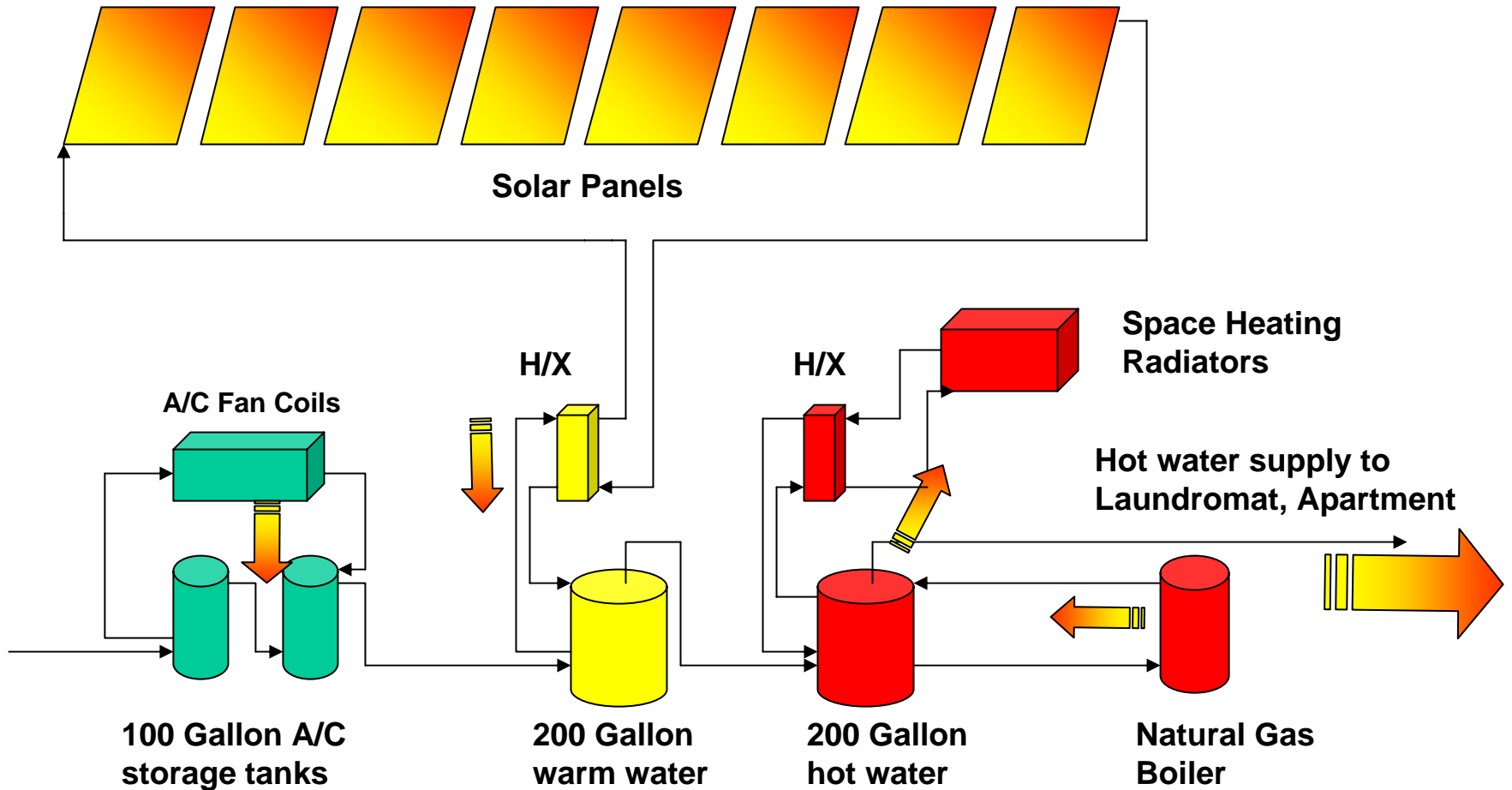
Solar Thermal Utility Company Income Statement

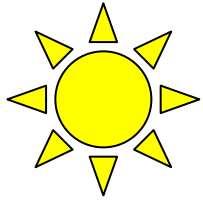
- Revenue 10.3%
- Interest Expense 5.1%
assumes 80% debt financed at
6.4% interest cost
- Legal, Audit, Maintenance 2.0%
- Cash available for debt repayment 3.2%



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Coloured Arrows Indicate Energy Flows





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