



Solar PV panels
(independent)

Solar
Thermal
panels

50 kW Air-heat
Collector
(behind hedge)

25 kW heat pump

Six boreholes
20 m deep
(208 watts/m)

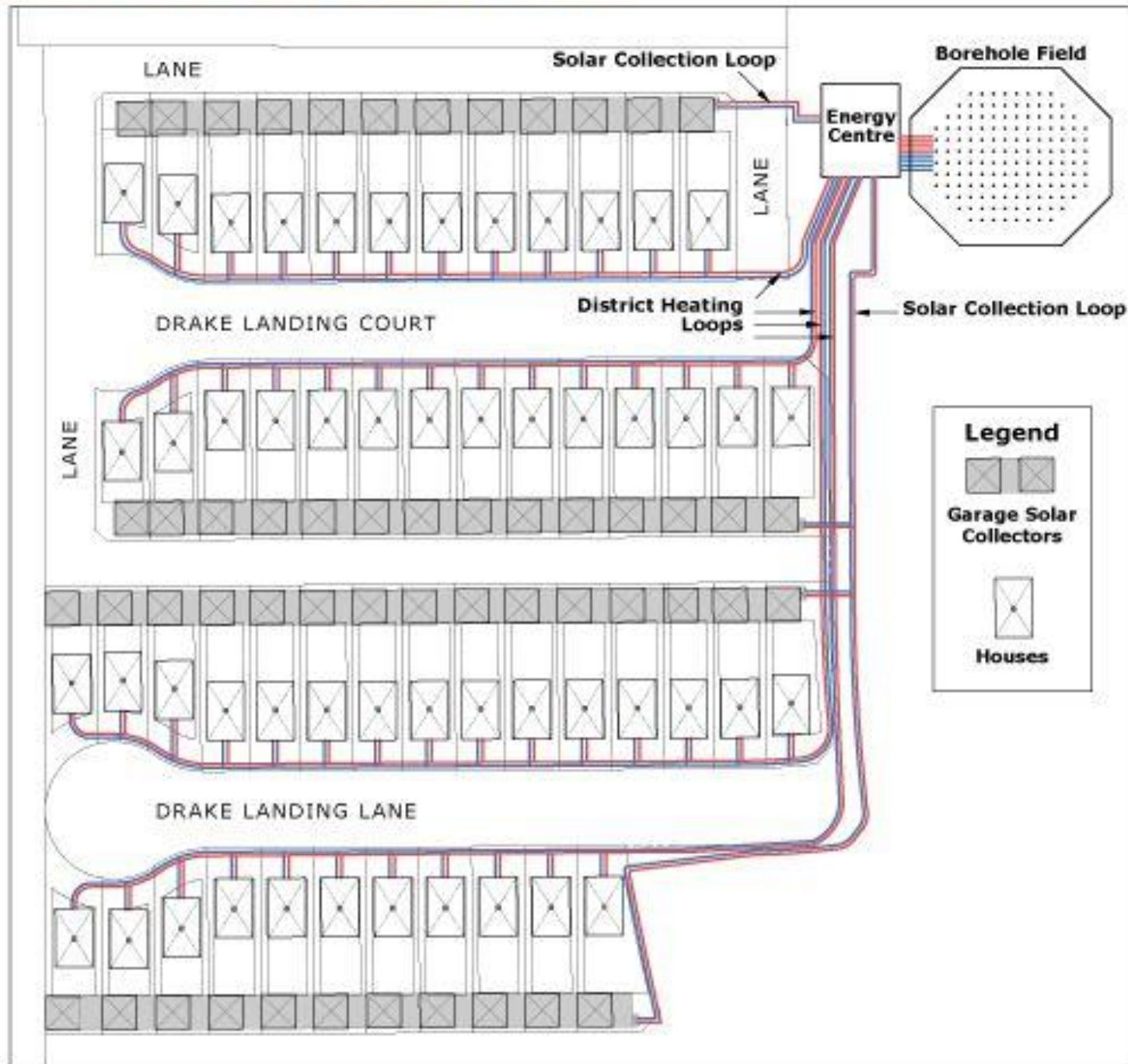
Test-bed installation in Kingston



50 kW Air-heat exchanger transfers heat into the ground loop of the Test-bed system



Drake Landing Solar Community Site Plan



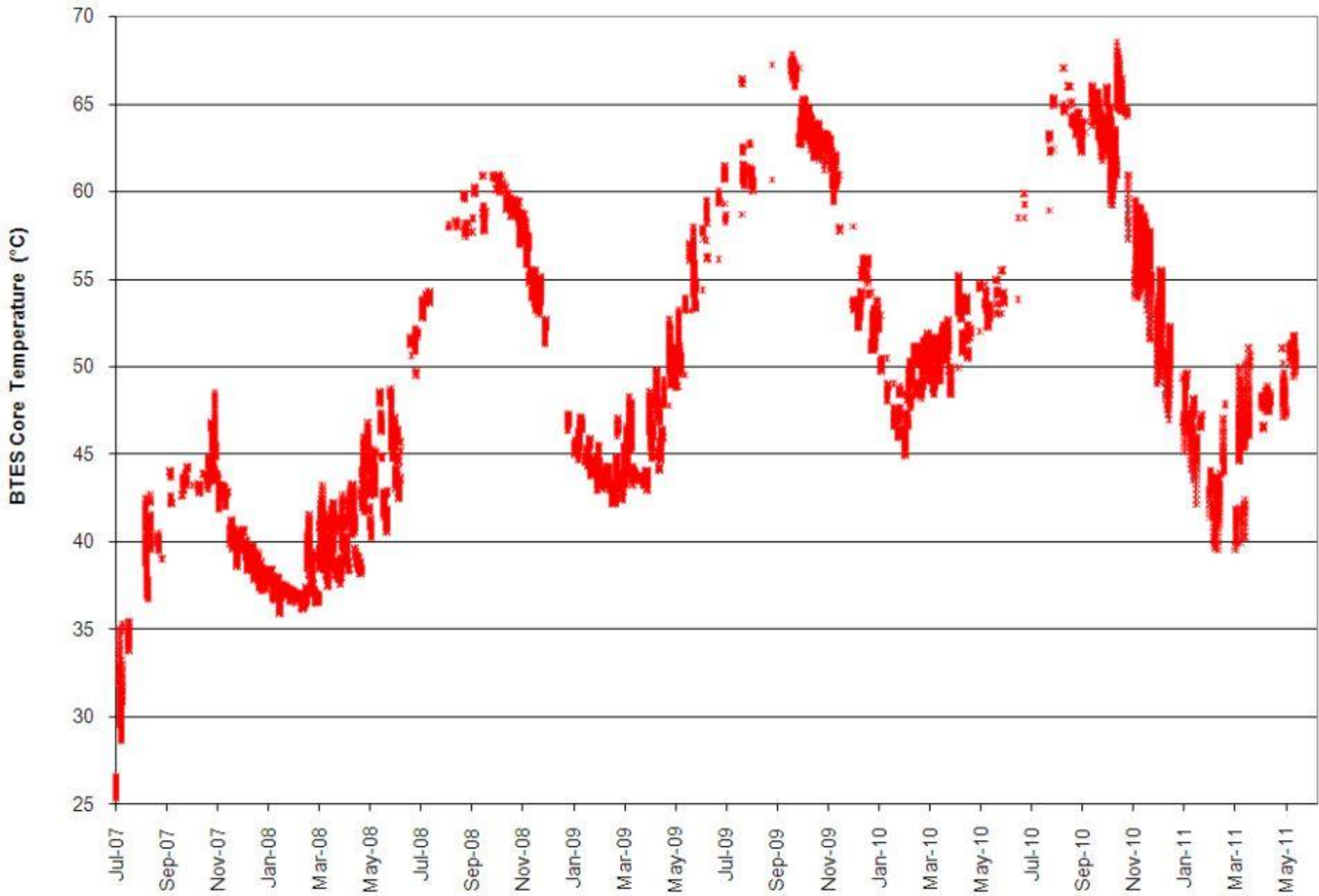
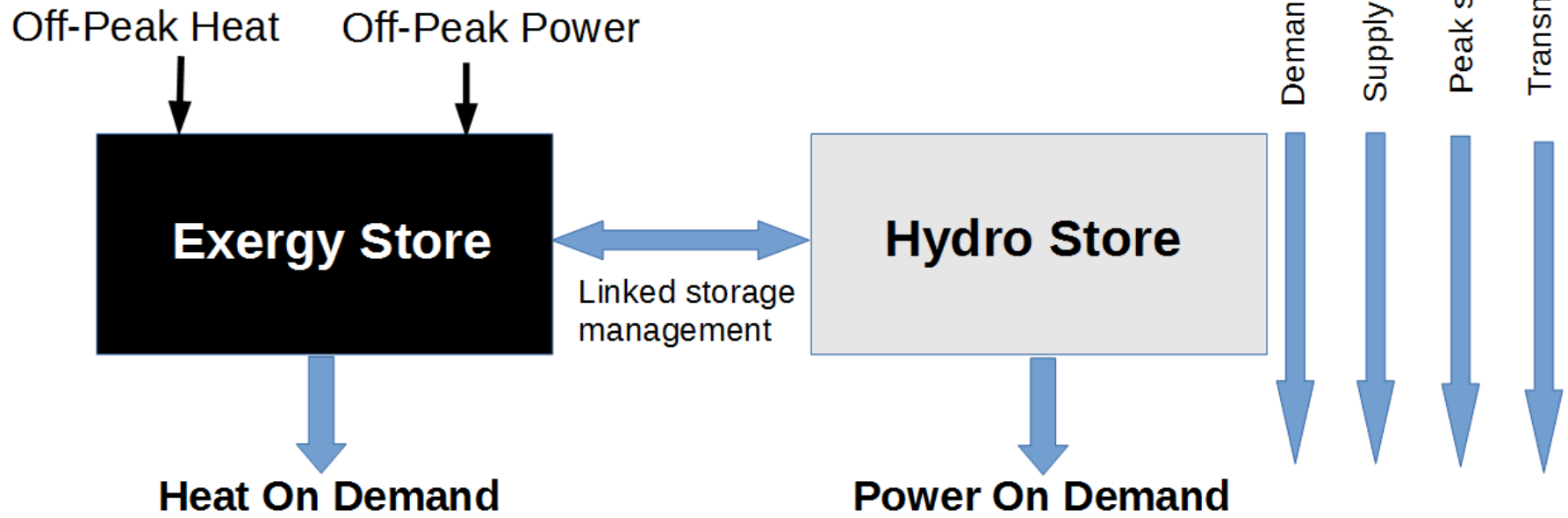


Fig. 6: BTES Core Temperature



Electrical Energy Storage Options

How Much Does Storage Cost?

- ✧ Electric storage is expensive – see 2010 EPRI Report 1020676.
- ✧ Storage must meet both the power delivery and energy storage rating requirements.

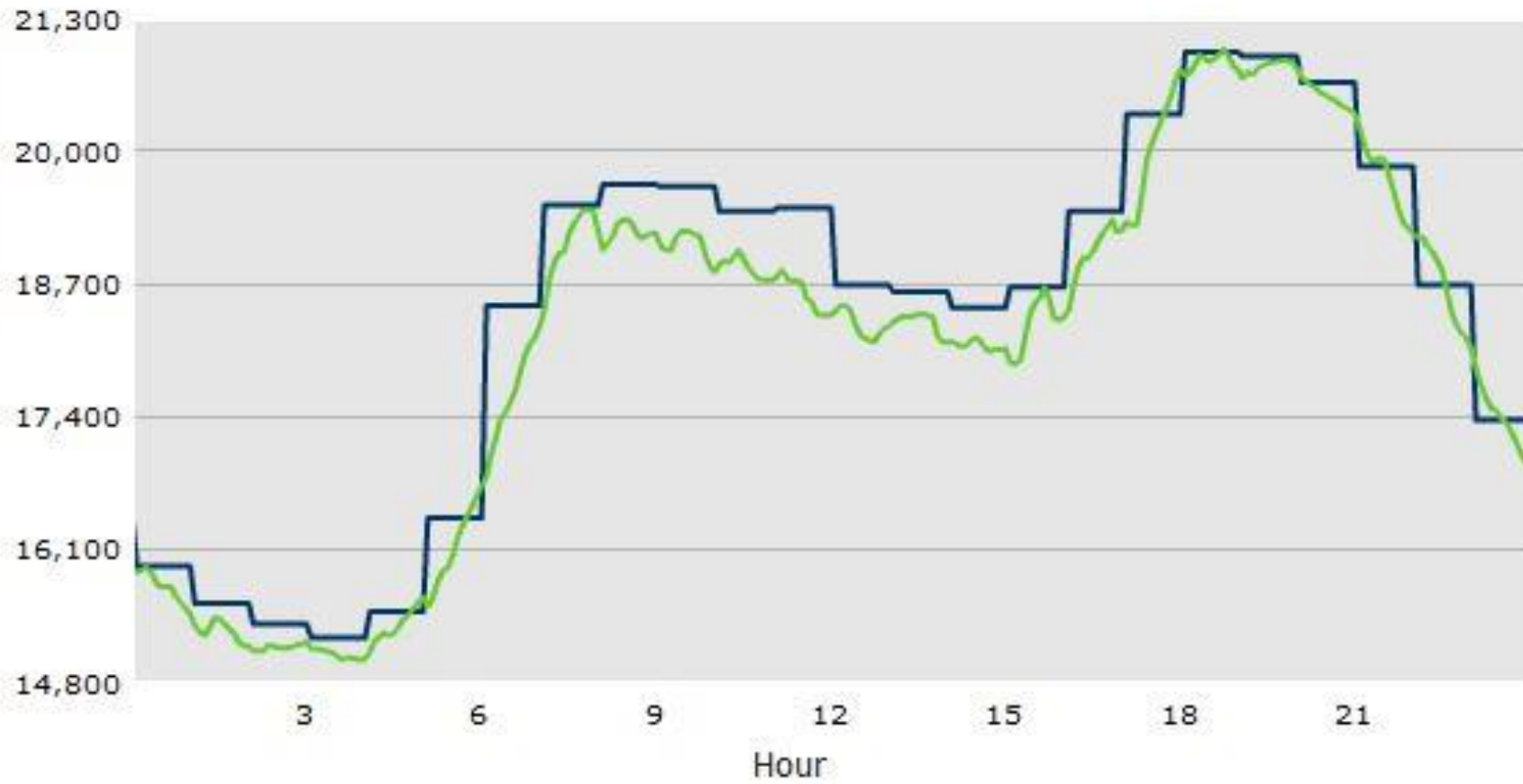
Technology	k\$/kW (power)	k\$/kWh (energy)	Comment
Batteries	1 - 5	0.2 - 5.0	Short life 3 – 15 yrs
Flywheels	2	2 - 9	10 hours max storage time
Compressed gas	1 – 2	0.1 – 0.5	Low efficiency
Pumped hydro	1 – 9	0.2 – 0.9	Depends on geography
Power to Gas	Not avail.	Not avail.	Still in development

Note: Batteries used for voltage regulation (less than 1 hour storage) on the distribution system is now cost effective compared to alternative equipment.

Ontario Demand (MW)

Projected

Actual



TWh per year

