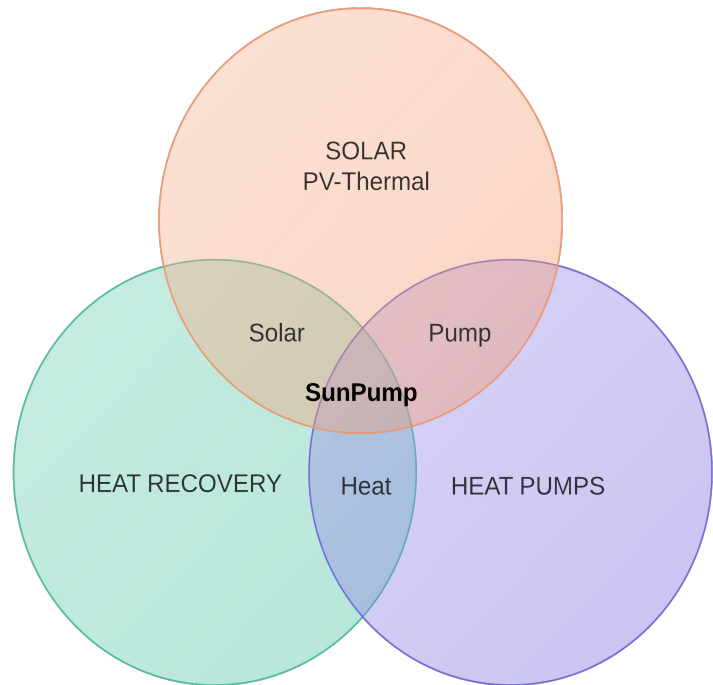


# Simple

Solar Heat Pumps are a new category of renewable heating that combine the advantages of Solar Thermal + PV, Heat Recovery, and Geo/Ductless Split Heat Pumps, without their limitations or high cost. This is the first major breakthrough for solar thermal in over 30 years, and is referred to as Fourth-Generation Solar, because "SunPumps™" are capable of providing solar PV power, heating & cooling for radiant floors and domestic hot water, from a Simple, Reliable, and Affordable appliance.



SunPump™ - 4<sup>th</sup> Generation Solar Hybrid

Works in all weather – all year



# Reliable

Solar Heat Pumps are uniquely able to provide primary heating in all Canadian weather conditions through the Winter, and even at night. Available in 9,000 to 60,000 btu heat capacity (2.5 to 17.5 kW = ¾ to 5 Tons).

Unlike solar - SunPump is not limited to just peak sun, and is not subject to damage from freezing, boiling, or fouling. The single moving part, is a EVI Cold Climate scroll compressor.

## Affordable

Investing in a mid-sized 10.5kW SunPump™ with 6 solar evaporator panels, for a heating and hot water system, pays a Return On Investment of 500% and up to 1000% above the \$10,000 cost. Just the Space<sup>2</sup> & Equity Savings<sup>3</sup> on Day One are \$50,000 or more, not including Capital savings. Plus that much more in utility expense savings of \$100,000 over 20 years.  
**\$1/watt=\$5ROI=\$0.03/kWh LCOE=5yr Payback**

1. Capital and Labor Savings from more expensive 10kW renewables can be huge, from as low as \$5,000 for a ASHP/Gas combo, to \$20,000 for a GSHP/electric system, to \$42,000 for an equivalent 42 panel 10.5kW PV system. (1 SunPump panel = 7 PV panels @ 250w)

2. Space Savings from reducing 60 ft<sup>2</sup> of mechanical floor space down to 10 ft<sup>2</sup>, valued at \$200 ft<sup>2</sup> x 50 = \$10,000. It may not be obvious, but the savings are real because conditioned interior space is not free.

3. Equity Savings are calculated by multiplying first year energy savings, \$2000, by Berkley's<sup>A</sup> market appreciation factor of \$20:1, to add \$40,000 to the property market value when the install is completed. An Alternate property appreciation factor is to multiple the kW rating by \$5/kW = \$55,000.

4. Solar Energy Savings reduce \$3000 average utility expense, by estimated \$2000 savings, to \$1000 net. The cumulative savings are \$48,000 over 20 years. (not including 8 Ton/yr Carbon reduction, over 20 year savings = \$5,000 @ \$30/Ton).

Assumes a 2000 ft<sup>2</sup> Vancouver home, EnerGuide 76, with a 36,000 btu heat load plus hot water. Not including electrical appliance loads, or incentives. Estimated results will vary by Region and Occupant use. <sup>A</sup> Berkley National Labs research paper on the market appreciation of homes with PV. Patent Pending



SunPump & Solar Thermal Evaporator



Canadian Solar Heat Pump Institute (CanSHPI), is a Federal Non-Profit to educate and create awareness on the most economically efficient renewable solar heating systems.

CanSHPI is looking for partners to demonstrate SunPump installations. If your organization is planning a showcase development, ask us for a proposal on a collaborative effort.

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 Web: [www.smartheating.org](http://www.smartheating.org)