

# Energy Independence, LLC

## Sundial Energy Harvesting Systems

### DX-Geothermal

#### Cost / Benefit System Estimate \* DX-GeoThermal

Name: Sample

Email: Sample

Phone: Sample

Address: Sample

Hybrid This is a sample configuration aimed at providing a "Hybrid", DX-Geo first choice system.  
Depending on the envelope structure, this sizing may be adjusted to meet the dictates of a  
Man-J analysis.

This presentation reacts to supplied information to provide a report designed to compare conventional and Sundial Energy Harvesting Systems.  
This represents a "best practices" estimate. This not a price proposal but rather a tool to determine approximated costs. Actual system  
performance may vary based on envelope configuration and user preferences.

Home Square Footage	2,500
Degree Days	6,400
Watts/SqFt/DD Target	
"Envelope Score"	0.18
Electricity KWHr starting year costs	\$0.1880
Energy Unit Yearly increase %	12.00%
Energy Requirement	
Conventional Energy Units Required	900
Energy Cost/Unit	\$3.7990
Conventional system mait Yearly	250.00
Cost Hot Water / Person/Month	22.50
Number of Hot Water People	2
Hot Water / Month	45.00
AC?	1

Latitude 42.6887 / Longitude -72.451  
.12 (Excellent - Very Tight)  
.15 (Good)  
.18 (Fair)  
.20 (Poor)  
.25 or higher (Very Poor)

**Manual J analysis required. May adjust size requirement. Blower Door Test may be required.**

	BTHu / Square Foot	Watts/SF	Total BTHus	Tons
\$/Gallons "Spot Price" NY	12.00	3.52	30,000.00	2.50
	15.00	4.40	37,500.00	3.13
	18.00	5.27	45,000.00	3.75
	20.00	5.86	50,000.00	4.17
	25.00	7.33	62,500.00	5.21

#### 10 Year Usage Analysis

**EXHIBIT**

*M*

Equipment/Item	Price	Options	3.167	Tons	38,000	BTHu's
Basic Sundial DX-Geo System		►				Complete System typically located in basement
Hot Water 24/7	Optional					For hot water processing 24/7 (included in Total)
HVAC Interface and Controls		►				Interface to existing plenum, all brazing, pressure testing, purging, controls and wiring, hot water interface, Copper Earth Taps and Vapor/Liquid Manifold
Total Sundial DX-GeoThermal	20,553.33					Complete Sundial DX-Geothermal system installation.
HVAC "Plant"						Installed Hot/Cold air plenum, ECM Air Handler (typically 350CFM/Ton warm air and 500CFM/Ton cold air, ECM blower.. Interface with customer supplied hot water tank). ERV Optional. Includes optional propane makeup/backup, two plants feeding to Air Handlers.
Optional ERV						
Total	20,553.33	Investment				

Years	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Energy Unit Cost	3.80	4.25	4.77	5.34	5.98	6.70	7.50	8.40	9.41	10.53
Electricity Rate	0.188	0.211	0.236	0.264	0.296	0.331	0.371	0.416	0.465	0.521
Annual Hot Water	540.00	604.80	677.38	758.66	849.70	951.66	1,065.86	1,193.77	1,337.02	1,497.46
Annual Space Heating	3,419.10	3,829.39	4,288.92	4,803.59	5,380.02	6,025.62	6,748.70	7,558.54	8,465.57	9,481.43
Total Heat Energy Requirement	3,959.10	4,434.19	4,966.30	5,562.25	6,229.72	6,977.29	7,814.56	8,752.31	9,802.59	10,978.90
Energy Mait Requirement	250.00	265.00	296.80	332.42	372.31	1,368.65	1,532.88	1,716.83	1,922.85	2,153.59
Est Cool Energy Requirement	439.90	492.69	522.25	553.58	586.80	622.01	659.33	698.89	698.89	740.82
Conventional Total	4,649.00	5,191.88	5,785.34	6,448.25	7,188.83	8,967.94	10,006.77	11,168.03	12,424.32	13,873.31
Energy Audit Prediction	1,191.17	1,334.11	1,494.20	1,673.51	1,874.33	2,099.25	2,351.15	2,633.29	2,949.29	3,303.20
Yearly Sundial Target	541.44	606.41	679.18	760.68	851.97	954.20	1,068.71	1,196.95	1,340.59	1,501.46
Yearly Savings	4,107.56	4,585.47	5,106.16	5,687.57	6,336.86	8,013.74	8,938.07	9,971.08	11,083.74	12,371.85
Savings Cumulative	4,107.56	8,693.03	13,799.19	19,486.76	25,823.62	33,837.35	42,775.42	52,746.50	63,830.24	76,202.09
Monthly (Sundial)	45.12	50.53	56.60	63.39	71.00	79.52	89.06	99.75	111.72	125.12
Monthly (Energy Audit)	99.26	111.18	124.52	139.46	156.19	174.94	195.93	219.44	245.77	275.27
Sundial DXG ROI	19.98%	42.29%	67.14%	94.81%	125.64%	164.63%	208.12%	256.63%	310.56%	370.75%

Monthly Target: Assumes running the home with energy savings in mind

Design Targets: Assumes running the home near or at design limits

