SolarAttic "Conservation Technology"
Summary of Barrels Saved

	Barrels of Oil
Pool Heating	**131,601,947**
Space Heating	**313,862,069**
Water Heating	**140,867,302**
Annual Barrels Saved	**586,331,318**

Oil Savings Calculations Ignore
1. Commercial applications of space heating and electric hot water heating.
2. Air conditioning savings and its impact on reduced imported oil.
3. Impact of technology used in city "heat island" recovery applications.
4. Multiple family dwellings
5. Mobile home dwellings
6. 3 million new electric hot water heaters shipped annually.
7. New construction impact annually.
8. Fact that all products in this conservation technology can be powered by PV cells.
9. Applications of hot water technology on gas water heating appliances.
10. Market impact of reduced use of gas water heaters.
11. Other markets where conservation technology could be used.

SolarAttic "Conservation Technology"
Pool Heating Savings Calculation

#	Description	Units	Column D	Notes	Calc #	BTUs (G)
2	1 Barrel (42 gallons) of crude oil =			14		5,800,000
3	1 Gallon of heating oil =		*5,838,000*	1,14		139,000
4	Average inground pool	gallons	21,000	2		
5	Desired pool heat gain	degrees	12	3		
6	Weight of water	pounds	8.34	4		
7	Weight of water in average pool (lbs)	pounds	175,140	5		
8	Initial Btus to heat one pool 12 degrees	btus		6	D7*D5	2,101,680
9	Nominal BTUs of SolarAttic Heater	Btus/Hour		7		60,000
10	Hours Required To Achieve Gain	Hours	35	8	G8/G9	
11	Max SolarAttic Run Time	Hours	10	9		
12	Days required to reach desired gain	Days	3.5	10		
13	Pools heated initially from one Barrel of Oil	quantity	2.76	11	G2/G8	
14	Estimated Pools in the USA	quantity	8,349,000	12		
15	Daily heat loss factor (avg)	degree	3.4	13		
16	Monthly heat loss factor	degrees	102		D15*30	
17	Btus to make up monthly heat loss (1 pool)	Btus			D16*D7	17,864,280
18	Months of heating pools	months	5			
19	Seasonal heat loss makeup for one pool	btus			D18*G17	89,321,400
20	**Total BTUS per season per pool**	btus			G19+G8	**91,423,080**
21	Total BTUS to heat all inground pools	btus			D14*G20	7.63291E+14
22	Barrels of oil to heat one pool	Barrels	15.76		G20/G2	
23	**Barrels of oil to heat all pools**	Barrels	**131,601,947**		G21/G2	

Annual Oil Savings Total   **131,601,947**

SolarAttic "Conservation Technology"
Pool Heating Savings Calculation

Assumptions/Notes
1. Audit of barrel btus; multiple 42 gallons x 139k
2. SolarAttic field estimate that the average inground pool is 21000 gallons.
3. SolarAttic estimate of desired heat increase in average pool
4. Weight of water from reference books
5. [pool gallons] x [weight of a gallon of water]
6. [Desired gain in degrees] x [Weight of water in avg pool]
7. Specified output of SolarAttic pool heater
8. [btus required for desired gain] / [Nominal hourly output of SolarAttic pool heater]
9. Field experience on SolarAttic technology indicates a 10 hour maximum run time.
10. [Hours required to reach gain] / [Max daily run time of SolarAttic].
11. Gross calculation of pools INITIALLY heated by one barrel of oil to a maintenance temperature.
12. Sum of inground [4,544,000] + aboveground [3,535,000] + commercial [270,000] pools listed online.
    The above Data at www.aquaticnet.com/media-statistics3.htm is substantially less than internal market data.
13. Estimate from SolarAttic field experience.
14. DOE Energy data found at www.ela.doe.gov web site

SolarAttic Pool Heater Power Usage	Max Run Time Audit	
a. A/C savings offset small electrical add of PCS2 motor	1500	hours
b. Pump required for proper filtration - No added electrical cost	150	days
	5	months

SolarAttic "Conservation Technology"
Space Heating Savings Calculation

#	Description	Value	Units	Notes	Calc
1	Typical house uses	82,000,000	Btus	1	
2	Estimated savings 30%	30.00%	Percent	2	
3	Annual home heating savings	24,600,000	Btus		#1 x #2
4	Estimated US Households	74,000,000	Households	3	
5	Gross BTU Savings in U.S.	1.8204E+15	Btus		#3 x #4
6	BTUS in Barrel of Oil	5,800,000	Btus	1	
7	Barrels of Oil Saved Annually	**313,862,069**	Barrels		#5 / #6

Assumption/Notes:
1. Federal Energy Department data found at www.ela.doe.gov web site
2. SolarAttic field experience in the Ohio-West Virginia area.
3. Estimated single family dwellings at DOE rounded up.

Ignored in Space Heating Calculation
1. Commercial applications of space heating and electric hot water heating.
2. Impact of technology used in city "heat island" recovery applications.
3. Multiple family dwellings
4. Mobile home dwellings
5. Impact of annual new home construction.

SolarAttic "Conservation Technology"
Water Heating Savings Calculation

#	Description	Column D	Units	Notes	Calc
2	Tank size	50	gallons	6	
3	Heating requirement (50 input to 110 degrees)	60	degrees	8	
4	Weight of water in tank	417	pounds	9	D2*8.34
5	Btus required to heat tank to 110 degrees	25,020	Btus		D3*D4
6	Average household uses X tanks per day	3	tank cycles	10	
7	Average household Btu consumption - hot water	75,060	Btus/day		D5*D6
8	Total US Household Estimate - Single Family	74,000,000	households	1	
9	Households using electric hot water heaters	40.30%	Percent	1	
10	Households with electric	29,822,000	households		D8*D9
11	Btus used by households with electric hot water	2.23844E+12	Btus/day		D7*D10
12	Btus per year	8.1703E+14	Btus/year		D11*365
13	Btus in a barrel of oil	5,800,000	Btus	1	
14	Barrels of oil saved per year annually	**140,867,302**	Barrels		D12/D13

Notes:

1. Federal Energy Department data found at www.ela.doe.gov web site
2. Data found at Energy Information Administration Table HC15.8
3. Engineering estimate from SolarAttic is 50% electric hot water savings.
4. Estimated single family dwellings from DOE rounded to 74 million.
5. Estimate assumes conservation technologies were deployed throughout USA.
6. Basic size of an electric hot water tank is 50 gallons, larger tanks ignored.
7. Mobile homes, apartments and commercial electric tanks ignored in this calculation.
8. Basic water heating data found at http://en.wikipedia.org/wiki/Water_heater
9. Weight of water is 8.34 pounds per gallon.
10. SolarAttic estimate