

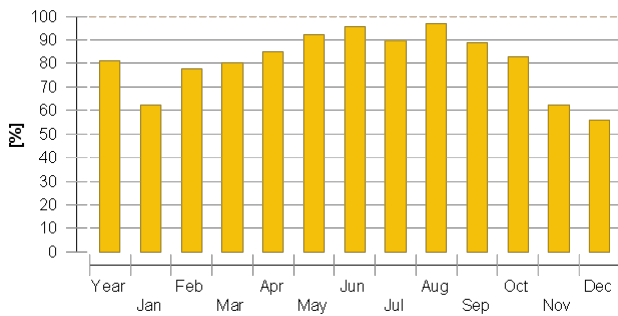
Name of the company	Location
Example	USA
simon geissshuesler	NY Albany
Stadthausstrasse 115	Longitude: -73.8°
8640 winterthur	Latitude: 42.75°
001 (697) 346 23 46	Elevation: 200 ft

Overview

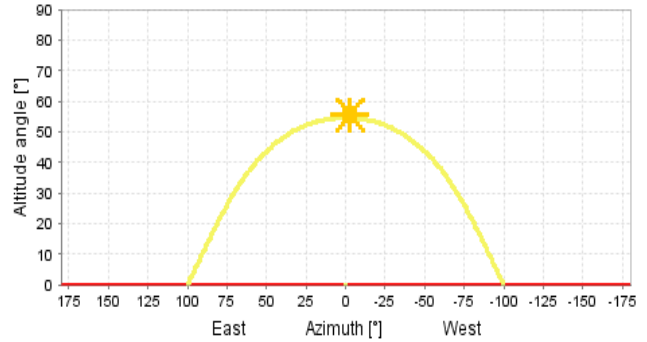
Max annual fuel savings	117 gal: [Heating oil] Oil boiler, medium size / -
Max annual energy savings	15115.7 kBtu: Oil boiler, medium size / 0 kBtu: Electric resistance heater element 3
Annual reduction in CO2 emissions	2936.5 pound: [Heating oil] Oil boiler, medium size / 0 pound : [Electricity] Electric resistance heater element 3
End energy to the system (fuel and electricity)	4925.6 kBtu
Energy consumption (Quse)	10937.7 kBtu
Syst. efficiency (End energy / Energy consumption)	2.22
Comfort demand	Energy demand covered

Overview thermal energy

Collector area	86.1 ft ²
Solar fraction total	81.2 %
Total collector field yield	12848 kBtu
Collector field yield relating to aperture area	166 kBtu/ft ² /Year
Collector field yield relating to gross area	149 kBtu/ft ² /Year



Fraction of solar energy to system (net)



Horizon line

Meteorological data

Outdoor temperature	48.6 °F
Global irradiance	419 kBtu/ft ²
Diffuse irradiance	195 kBtu/ft ²

System overview

Boiler		Oil boiler, medium size	
Power	kBtu/hr		102.39
Total efficiency	%		63.2
Energy from/to the system	kBtu		2969
End energy	kBtu		4700.7
Collector		Flat-plate collector, good quality	
Data Source			SPF
Number of modules			4
Parallel sections			1
Total area	ft ²		86.11
Total aperture area	ft ²		77.5
Tilt angle	°		45
Orientation	°		0
Collector field yield	kBtu		12848.3
Irradiance onto collector area	kBtu		37235.5
Direct irradiance after IAM	kBtu		20541
Diffuse irradiance after IAM	kBtu		14676
Hot water demand		Constant	

Withdraw volume	gal/d	53.4
Temperature setting	°F	122
Energy demand	kBtu	10508.9

Pump	Pump, small	
Circuit pressure drop	psi	7.746
Flow rate	gal/h	76.1
End energy	kBtu	224.9

Storage tank 2	300l potable water tank	
Volume	gal	79.3
Height	ft	3.94
Material		Stainless steel
Insulation		Rigid PU foam
Thickness of insulation	in	3.15
Heat loss	kBtu	770.7
Connection losses	kBtu	534.3

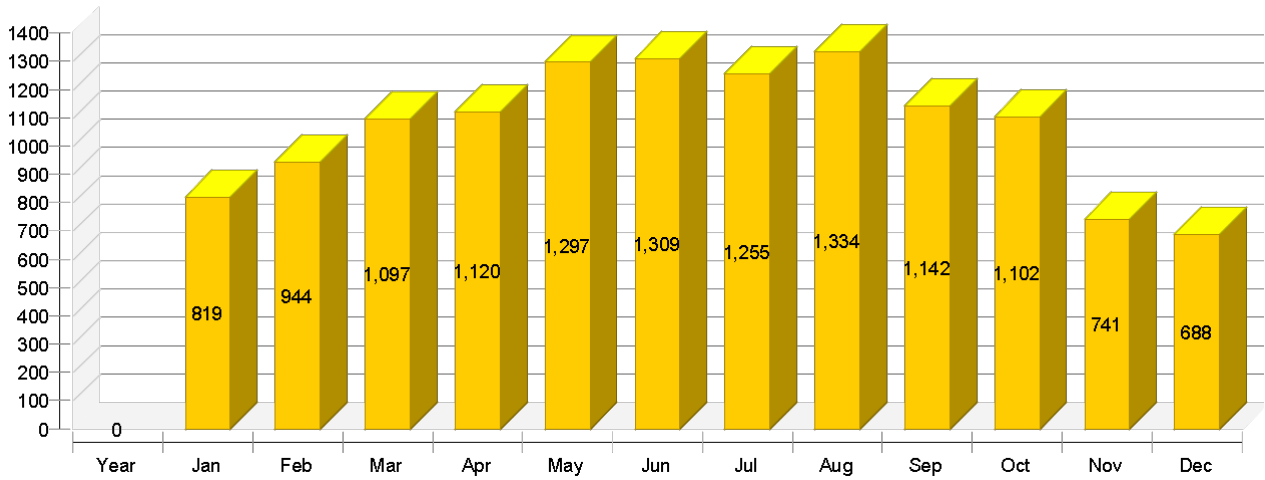
Storage tank 3	300l potable water tank	
Volume	gal	79.3
Height	ft	3.94
Material		Stainless steel
Insulation		Rigid PU foam
Thickness of insulation	in	3.15
Heat loss	kBtu	1138.4
Connection losses	kBtu	641

Loop

Solar loop		
Fluid mixture		Ethylene mixture
Fluid concentration	%	33.3
Fluid domains volume	gal	6.02
Pressure on top of the circuit	psi	58.016

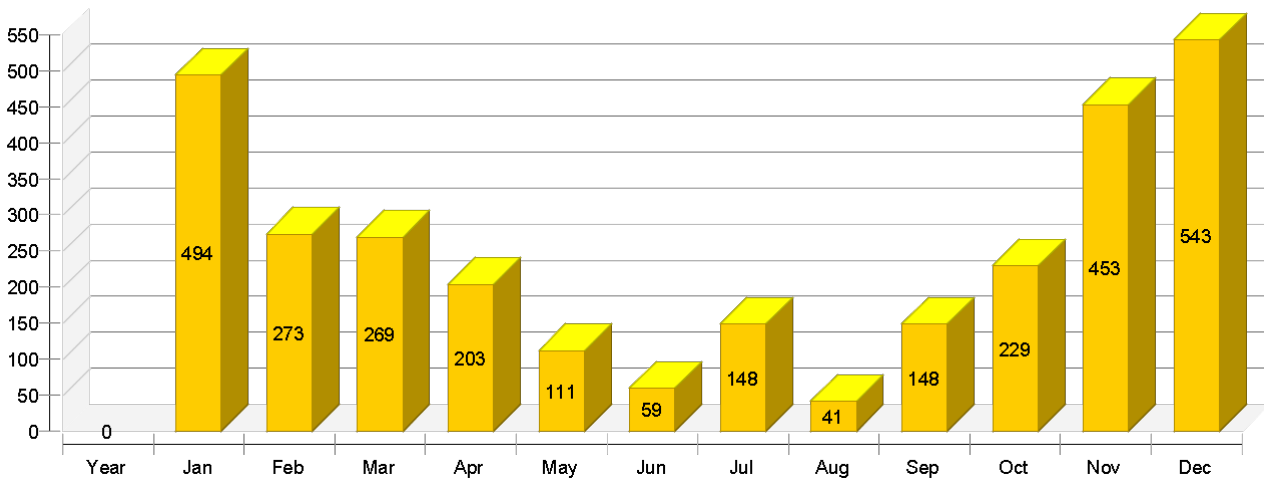
Solar energy to the system [Qsol]

kBtu



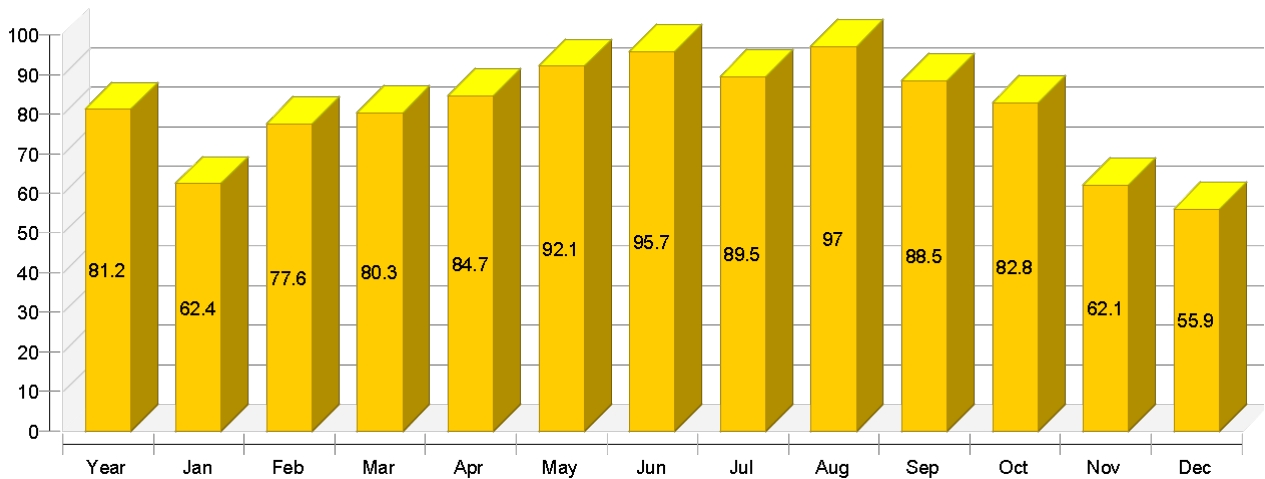
Auxiliary energy to the system [Qaux]

kBtu



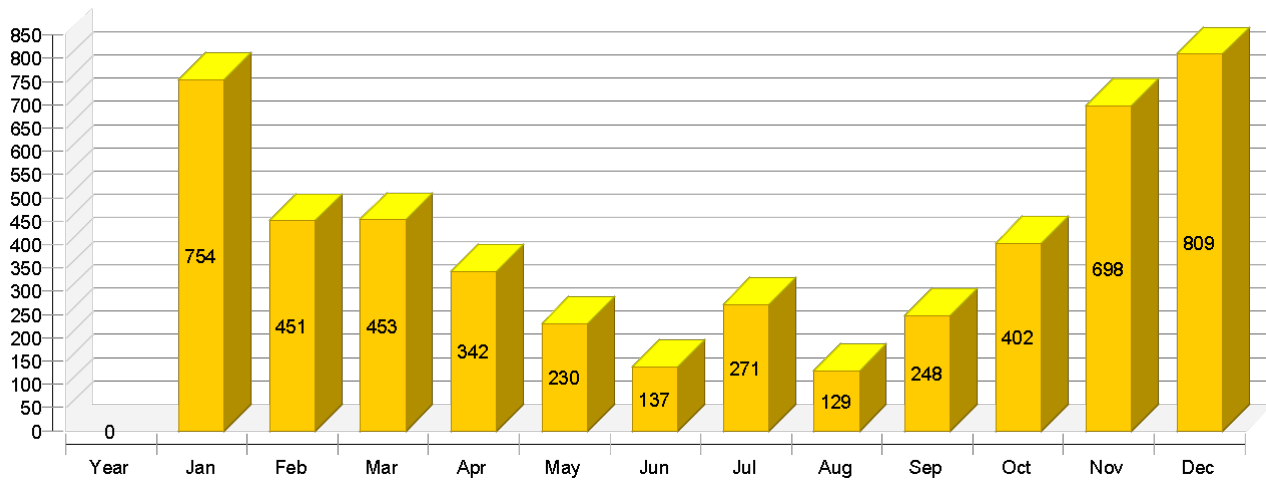
Fraction of solar energy to system (net) [SFn]

%



End energy to the system (fuel and electricity) [Etot]

kBtu



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Solar energy to the system [Qsol]

kBtu	12848	819	944	1097	1120	1297	1309	1255	1334	1142	1102	741	688
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Auxiliary energy to the system [Qaux]

kBtu	2969	494	273	269	203	111	59	148	41	148	229	453	543
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Auxiliary energy (end energy) [Eaux]

kBtu	4701	738	435	434	322	208	115	249	106	230	383	684	797
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Fraction of solar energy to system (net) [SFn]

%	81.2	62.4	77.6	80.3	84.7	92.1	95.7	89.5	97	88.5	82.8	62.1	55.9
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End energy to the system (fuel and electricity) [Etot]

kBtu	4926	754	451	453	342	230	137	271	129	248	402	698	809
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Irradiance onto collector area [Esol]

kBtu	37235	2406	2720	3234	3463	3730	3734	3846	3813	3473	2983	1913	1921
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Parasitic energy (end energy) [Epar]

kBtu	225	16	17	19	19	22	22	22	22	18	19	14	13
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Energy consumption [Quse]

kBtu	10938	931	850	956	930	957	910	930	914	873	897	874	916
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Heat loss to indoor room [Qint]

kBtu	6558	597	506	560	519	543	504	558	534	509	570	569	589
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Heat loss to surroundings [Qext]

kBtu	734	62	66	72	66	70	66	59	63	58	62	44	47
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Collector

Daily maximum temperature [°F]

Collector

Daily maximum temperature [°F]

