



Assumptions

Ambient (cold) water temp 6 deg C
 Required hot water temp 55 deg C
 Heat loss in system 3 deg C
 Cost of Electricity R1.50
 Solar Efficiency 90%

Formula: Do not enter data
 Data Input here

Application	units	per unit	Volume	Ambient deg C	Required hot water temp °C	Increase in temp °C	Heat Loss °C	Total kWhr Required	Electricity tariff/ kWhr	Total Cost	Average solar radiation w/m²	Efficiency rating of absorber %	Total area of absorber m²	Calculated solar kWhr available	Sunlight/solar hours needed for reheating	Potential saving with one solar reheating cycle per day	Capital Installed cost	Repayment period - no tariff increase		
				data input	data input	formula	data input	formula	data input	data input	data input	data input	data input	data input	formula	formula	formula	data input	formule	formule
Volume needed			200	6	55	52	3	12.79	R1.50	R19.19	1000	90%	0	0	#DIV/0!	R19.19	R0.00	-	-	-
Volume needed...			150	6	55	52	3	9.59	R1.50	R14.39	1000	90%	0	0	#DIV/0!	R14.39	R0.00	-	-	-
Volume needed....			100	6	55	52	3	6.40	R1.50	R9.59	700	90%	0	0	#DIV/0!	R9.59	R0.00	-	-	-
Volume needed....own values			2 000	6	70	69	5	172.12	R1.50	R258.19	800	90%	60	54	3.19	R258.19	R0.00	-	-	-
Totals																				

Using the calculated values (volume cell G16) from above assumption base, then calculate:

	Volume Litres	Time Hours	Input kW	
If volume and input is known	200	3.19826	4	Calculate time needed
If input and time is known	375.2052	4	6	Calculate volume heated
If time and volume is known	200	2	6.3965	Calculate energy requirement

Prepared by Xstream Solar Hot Water Cylinders (Pty) Ltd for its own use,
 You are welcome the worksheet calculating your own values using your own assumptions.
 Please point out any mistakes to the author at info@xstream.co.za