Wash Water

Target temperature 50° C

These temperatures can be achieved on sunny or partly sunny days, with containers as large as 20 liters. Buckets and jerry can work well. If buckets are used, the top clear layer should be somewhat snug over the top of the bucket to minimize evaporation. See the photos below.


This shows a full 20-liter bucket and a ¾ full 20 liter bucket, before the top clear layer has been applied.

The buckets should not have lids when they are heating, as it is best to let the noon-day sun down deep into the bucket of water. If the buckets are removed from the Solar Household Energy Bank and you want to keep the water hot, then the bucket should have a lid or at least a cover of some kind, to keep the water from cooling. The bucket can also be wrapped in a blanket to keep the bucket from losing heat from the sides.

This shows two buckets in the final arrangement with the clear layer applied. Wood is also being dried at the same time.

Some temperature graphs are shown below, showing temperature curves for a full and ¾ full bucket on a sunny day.
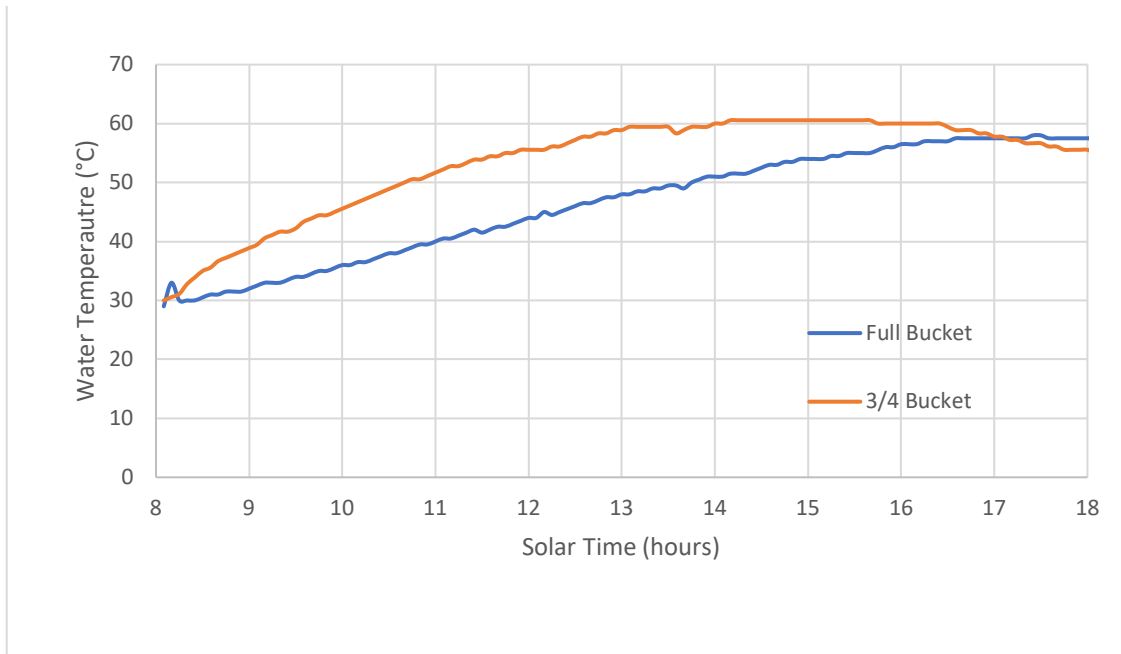
This shows temperature logger traces for two buckets of water on a sunny day, one full and one ¾ full. Nearly the same temperature was achieved, though the less full bucket achieved this temperature first.

Of course, practical matters may dictate how full the bucket is. If one doesn't want to carry a heavy full bucket, then a half full bucket is an option, and if one wants hot water earlier in the day, then a half full bucket is an option. With the Solar Household Energy Bank, the user has many options.

The graph below shows full bucket temperatures on days with 3 types of cloud levels.
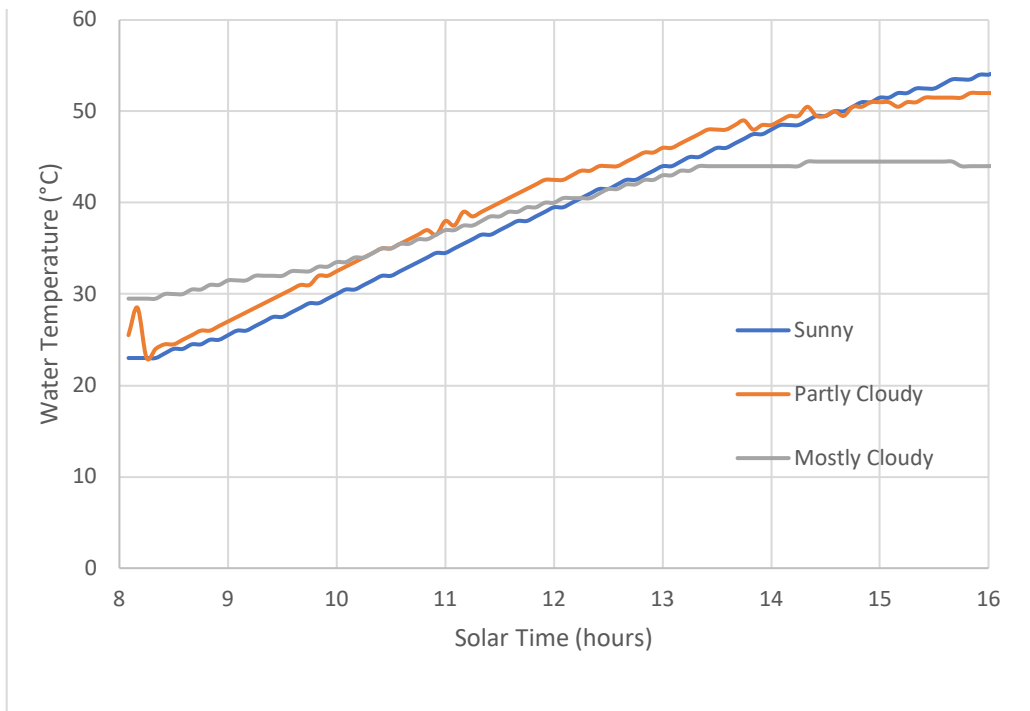
This graph shows bucket temperatures in three types of weather. In all cases, the bucket was 20 liters, full.

The system performs well on partly cloudy days, though not as well on cloudy days. The performance will depend somewhat on the area around the Solar Household Energy Bank, tall objects near the Solar Household Energy Bank will block some of the light reflected off the clouds. For more details on cloudy performance, see the full technical report.