

<u>Swimming Pool Size</u>	<u>Approx Volume</u>	<u>Pool Pump</u>	<u>Pool Filter</u>	<u>Electric Pool Heater</u>	<u>Gas Pool Heater & Heat Exchanger</u>	<u>Heat Pump</u>	<u>Oil Pool Heater</u>
Feet / Meters	Gallons/ Cubic Meters (m3)	HP (kW)	Inch / mm	kW (Indoor Pools / Outdoor Pools)	BTU (Indoor Pools / Outdoor Pools)	kW	BTU (Indoor Pools / Outdoor Pools)
9ft x 18ft (2.75m x 5.5m)	4,550 / 21m3	0.5hp (0.375kW)	19" / 480mm	9kW Outdoor / 7.5kW Indoor	45,500 BTU Outdoor / 27,300 BTU Indoor	9.5kW	110,000 BTU Outdoor & Indoor
10ft x 20ft (3m x 6m)	5,600/ 25m3	0.5hp (0.375kW)	19" / 480mm	12kW Outdoor / 9kW Indoor	56,000 BTU Outdoor / 33,600 BTU Indoor	12kW	110,000 BTU Outdoor & Indoor
12ft x 24ft (3.5m x 7m)	8,100 / 37m3	0.5hp (0.375kW)	19" / 480mm	15kW Outdoor / 12kW Indoor	81,000 BTU Outdoor / 48,600 BTU Indoor	15kW	110,000 BTU Outdoor & Indoor
14ft x 28ft (4m x 8.5m)	11,000 / 50m3	0.75hp (0.56kW)	19" / 480mm	21kW Outdoor / 18kW Indoor	110,000 BTU Outdoor / 66,000 BTU Indoor	15kW	110,000 BTU Outdoor & Indoor
15ft x 30ft (4.5m x 9m)	12,700 / 58m3	0.75hp (0.56kW)	19" / 480mm	24kW Outdoor / 18kW Indoor	127,000 BTU Outdoor / 76,200 BTU Indoor	17kW	180,000 BTU Outdoor / 110,000 BTU Indoor
16ft x 32ft (5m x 10m)	14,400 / 65m3	1.0hp (0.75kW)	24" / 480mm	30kW Outdoor / 21kW Indoor	144,000 BTU Outdoor / 86,400 BTU Indoor	21kW	180,000 BTU Outdoor / 110,000 BTU Indoor
18ft x 36ft (5.5m x 11m)	18,200 / 83m3	1.0hp (0.75kW)	24" / 480mm	36kW Outdoor / 30kW Indoor	182,000 BTU Outdoor / 109,200 BTU Indoor	24kW	180,000 BTU Outdoor & Indoor
20ft x 40ft (6m x 12m)	22,500 / 102m3	1.5hp (1.12kW)	30" / 480mm	48kW Outdoor / 36kW Indoor	225,000 BTU Outdoor / 135,000 BTU Indoor	30kW	220,000 BTU Outdoor / 180,000 BTU Indoor

How to Select the Right Pool Heater

Choosing the right **swimming pool heater** for your pool will vary depending on several factors, firstly will the pool be used regularly i.e. 7-days a week or will you only use it during weekends or at prearranged times. This is important because some pool heaters, namely Heat Pumps cost considerably less to run constantly than say gas or oil heaters. However if you are only going to use the pool at weekends then you may benefit from the added flexibility that gas & oil heaters give you.

The ability to turn your heater on say Friday night and have a warm pool by the morning is the flexibility that Gas, Electric and Oil heaters give you not to mention the ability to run the pool later in the season, say Christmas Day.

Heat Pumps take time to build up heat and for this reason they are generally switched on in May and turned off in September. The cost to heat a pool per day is far less with a Heat Pump, however you have to decide if you are going to want or be able to swim that often.

There are other considerations too like noise and emissions, electric element heaters make no noise and have no emissions. Heat Pumps have no emissions but do make a noise, its rarely enough noise to be a problem but it should be considered. Gas & Oil heaters are relatively quiet but do create emissions, again this is rarely a problem but should be considered.

Here is an example of a typical seasons running costs using different heaters, see notes below.

Pool Size		Electric Heat Pump	Propane / LPG Gas	Natural Gas	Oil Heater	Economy Seven	Electricity Element
Size	Surface Area	8p/kwh	27p/litre	49p/Therm	35p/litre	4p/kwh	8p/kwh
20' x 10'	200 ²	£180	£395	£225	£325	£350	£725
24' x 12'	288 ²	£225	£550	£315	£430	£470	£925
28' x 14'	392 ²	£310	£725	£420	£570	£635	£1250
30' x 15'	450 ²	£355	£820	£465	£635	£715	£1425
32' x 16'	512 ²	£385	£915	£515	£725	£815	£1580
36' x	648 ²	£475	£1110	£645	£875	£975	£2100

18'							
40' x 20'	8002'	£550	£1350	£785	£1050	£1250	£2285

Notes on Running Costs

1. The above figures assume that the pool is run & heated to 27 Deg C. (80 Deg F.) from May – September.
2. The pool is not surrounding by high Ground water.
3. The average depth is 4' 6" or 1.4mtrs deep.
4. The pool is covered during the evenings with a Solar Cover.

The cost per unit of energy varies in different areas of the country, check your unit costs and adjust accordingly.

Heating Facts for Outdoor Pools

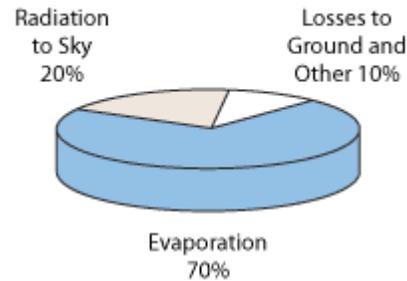
This fact sheet explains how you can reduce your outdoor swimming pool heating costs and save energy. Heating an outdoor swimming pool will require energy. Pool owners & operators can save a significant amount of energy by reading this guide. Much of the energy is often wasted and can be saved with proper management.

How Pools Lose Heat

Pools lose energy in a variety of ways, but evaporation is by far the largest source of energy loss for swimming pools. When compared to evaporation, all other losses are small. The reason evaporation has such an impact is that evaporating water requires tremendous amounts of energy. It only takes 0.24 watts to raise 45 grams of water 1 degree, but each 45 grams of 26.6C water that evaporates takes a whopping 307 watts of heat out of the pool.

The following diagram illustrates the impact of evaporation on the total energy consumption of the outdoor pool. This is why heaters are often sized on the surface area of the pool rather than the volume of water in it, as the surface area is where the evaporation occurs.

Outdoor Pool Energy Loss Characteristics



Minimize Evaporation

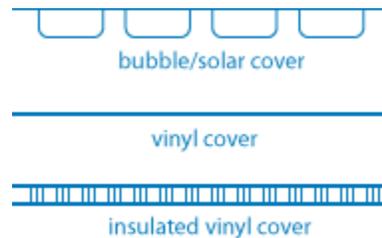
Since evaporation is the major source of heat loss for swimming pools, to minimize evaporation, one must cover the pool. Covering your pool when it's not in use is the single most effective way of reducing your pool heating costs. Savings of 50-70% are possible. There are many energy management improvements that can be implemented with outdoor pools.

Pool Covers

There are three main types of pool covers. See our 'Guide on Pool Covers' for more detailed information.

Pool covers also provide many other benefits besides saving energy. They conserve make-up water by 30-50% and can reduce chemical consumption. Cleaning time is cut by preventing dirt and other debris from entering the pool.

It is highly recommended that the first step to cutting pool energy loss be the evaluation of the economics of using a swimming pool cover.



Types of pool covers

Covers must be managed properly for safety. They should always be completely removed before anyone enters the pool.

Wind Breaks

One item that can greatly increase evaporation from outdoor pools is wind blowing over the pool. An 11 kilometer wind at the surface of the pool can increase energy consumption by 300%. Adding trees, shrubs, fences, or other wind break material can significantly lower the heat loss from the pool while it's open. Pool covers are great at stopping evaporation when the pool is closed, but can't do anything to cut evaporation when the pool is open. The windbreak needs to be high enough and close enough to the pool that it doesn't create turbulence over the pool and increase evaporation, but try not to block the sun from shining on the pools surface.

Efficient Operation

Consider carefully the temperature that you keep the pool water. Each degree rise in the temperature can cost you an additional 10%. 25-27C for active swimming and 28C for general use. To maintain a pool at 28C costs almost double than of a pool at 24C. Don't backwash your filter more frequently than necessary. Backwashing too frequently wastes water, while not backwashing wastes energy by requiring the pump to work longer to achieve the same standard of filtration, thus costing more.