

Linstone Housing

Sunamp trial: 6 months (1 month detailed monitoring period)

Date	Days	kWh used		kWh/day		Notes
		Peak	Offpeak	Peak	Offpeak	
17/05/2015						Cladding - no. Quantum heating - no. Sunamp boiler - no.
14/06/2015	28	98	381	3.5	13.6	
15/05/2016						Cladding - yes. Quantum heating - yes. Sunamp hot water storage - no .
12/06/2016	28	114	108	4.1	3.9	Quantum heaters were turned off, so this is all H.W. usage.
14/05/2017						Cladding - yes. Quantum heating - yes. Sunamp hot water storage - yes .
11/06/2017	28	113	62	4.0	2.2	Quantum heaters were turned off, so this is all H.W. usage.

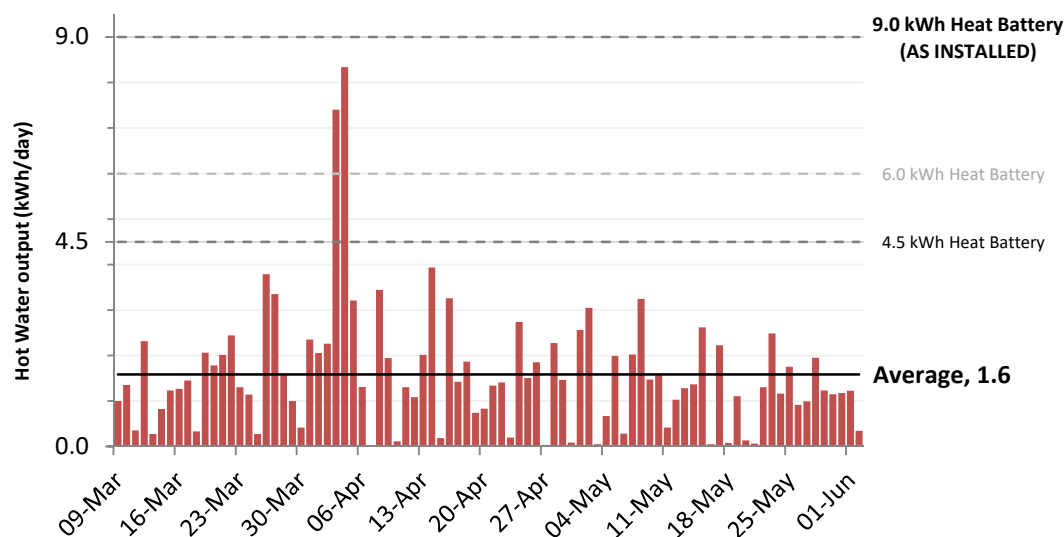
Other electricity consumption has remained constant.

Energy savings:

	Standard HW Tank	Sunamp Heat Battery	
Electricity input:	3.9	2.2	kWh/day
Hot water output:	-1.6	-1.6	kWh/day
Heat losses:	2.3	0.6	kWh/day
Energy Savings:	1.6 kWh/day		

Energy Savings 600 kWh p.a.
 Valued at off-peak energy price: 8.44 p/kWh *
Heat-loss savings: £51 p.a.
vs Previous hot water tank

Hot Water output from Sunamp Heat Battery (2017):



* Our Power off-peak electricity rate in South Scotland as at 7/7/17.

Conclusions

- Sunamp Heat Battery (9.0 kWh as installed) had no problem delivering peak hot water requirement. This is better than a standard hot water tank would have performed.
- A 4.5 kWh Heat Battery would have been sufficient in all but two days, when a top-up 'boost' could have been used.
- Comfort has increased. The tenant gets instant hot water, rather than "having to wait for it to flow through" from the old HW tank.
- Cupboard space has increased. The Sunamp Heat Battery takes up less than half the volume of the old HW tank.
- **Benefits:**
 - Heat loss savings of £51 (600kWh p.a.) NB This is for a single person useage.
 - Annual HW tank inspection costs avoided (mandatory for unvented cylinders).
 - Legionella risk assessment and testing costs avoided
 - Decreased lifecycle costs. Sunamp Heat Battery expected lifespan is 20+ years vs 10-12 for a HW tank.
 - Reduced maintenance and call-out costs.
 - Increased safety: Sunamp Heat Battery is self-sealing (no leaks).
 - Improved comfort.
 - Lower scalding risk (Sunamp temp can be blended down vs HW Tank mandatory 60+°C. Typical tap & shower is 38-40°C)

Financials

	<u>HW Tank</u>	<u>Sunamp Heat Battery</u>	
<i>Capex:</i>			
Sunamp 4.5 kWh		-£1,300	
HW Tank (2 @ £500)	-£1,000		
20yr Capex	-£1,000	-£1,300	
<i>Opex:</i>			
Annual HW tank service	-£60	£0	(Tenant)
Legionella assessment & testing	-£40	£0	
Maintenance call-outs	-£60	£0	
Heat loss savings			£51
plus other benefits (above)			+ +
Total p.a.	-£160	£0	£51
20yrs opex	-£3,200	£0	
TOTAL 20-year cost	-£4,200	-£1,300	

Better off by:

$$\frac{\underline{\underline{£2,900}}}{\text{(H.A.)}} + \frac{\underline{\underline{£1,012}}}{\text{(tenant)}} = \text{£3,912 in total}$$