

Heat Pump Trials

Samsung's experience

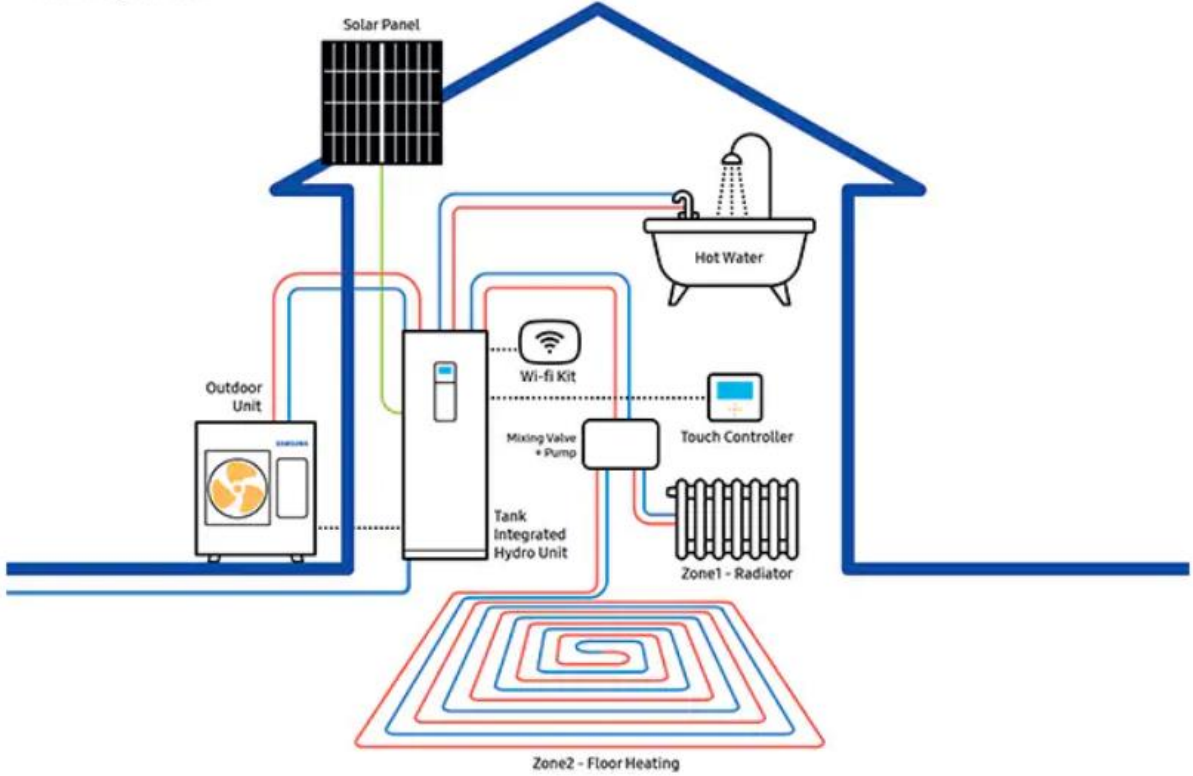
● 25.01.2023

● SRUK / Energy Innovation Group

Samsung introduction

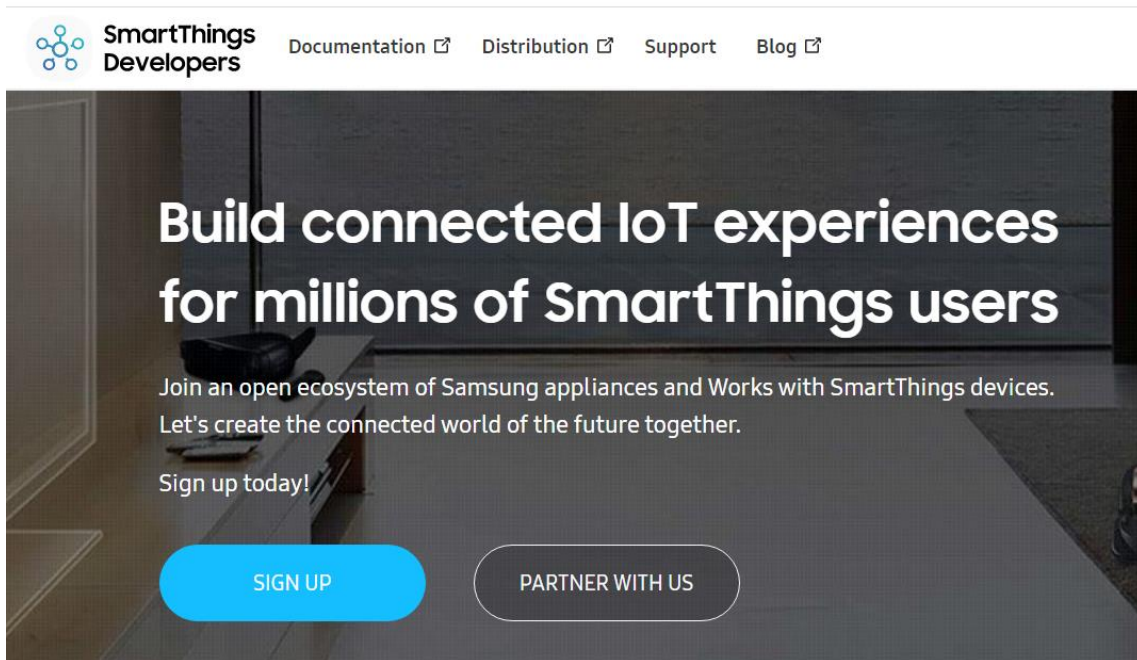


Mono + Integrated Tank



Samsung USP

SmartThings Platform



SmartThings Developers

[Documentation](#) [Distribution](#) [Support](#) [Blog](#)

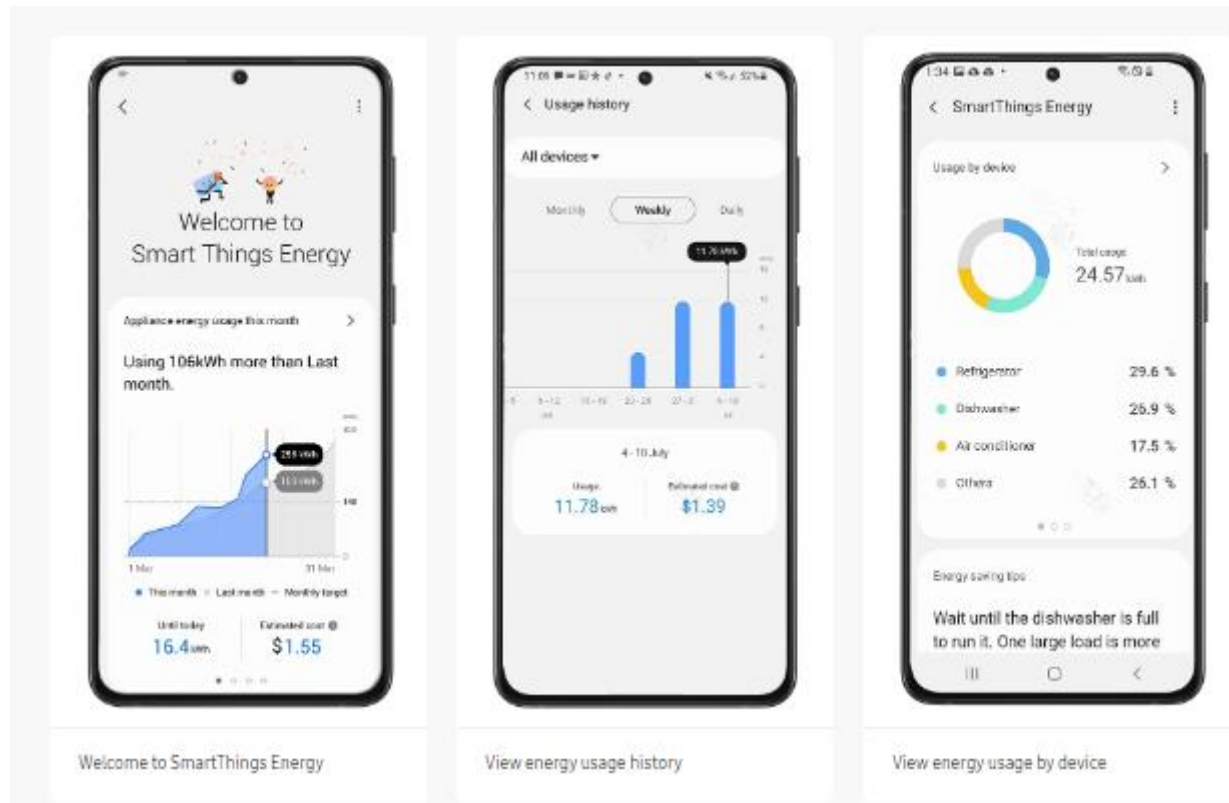
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SmartThings Energy



SmartThings Energy app interface showing energy usage data and device breakdown.

Welcome to SmartThings Energy

Appliance energy usage this month

Using 106kWh more than Last month.

11.78 kWh (Today) | Estimated cost @ \$1.55

11.78 kWh (4-10 July) | Estimated cost @ \$1.39

Total usage: 24.57 kWh

Device	Percentage
Refrigerator	29.6 %
Dishwasher	26.9 %
Air conditioner	17.5 %
Others	26.1 %

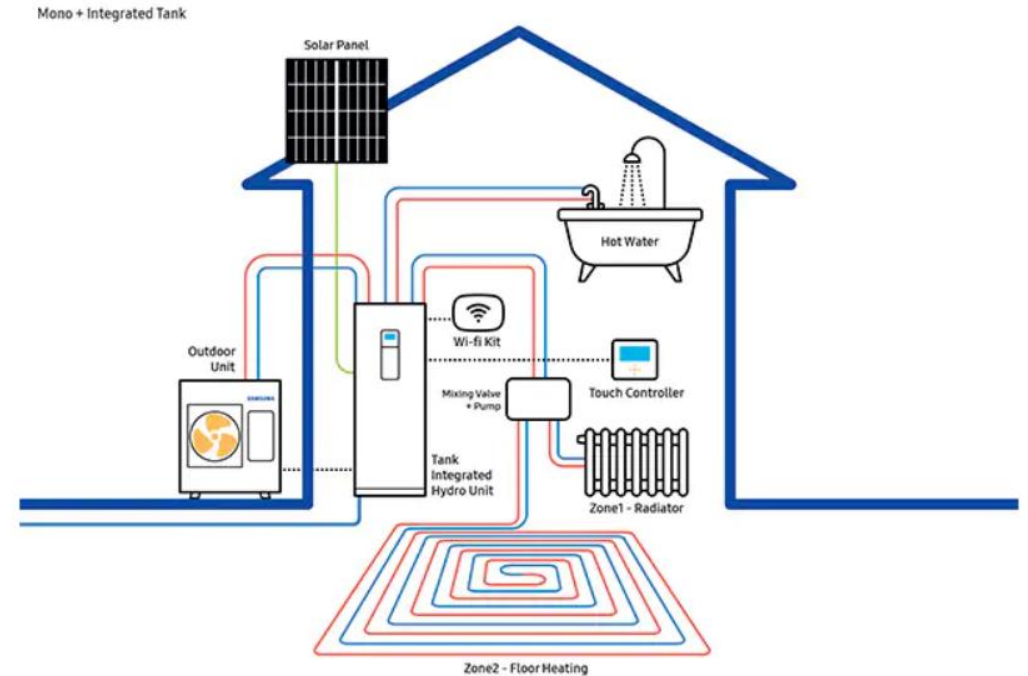
Energy saving tips: Wait until the dishwasher is full to run it. One large load is more

Labels: Welcome to SmartThings Energy, View energy usage history, View energy usage by device

Why do we do trials?



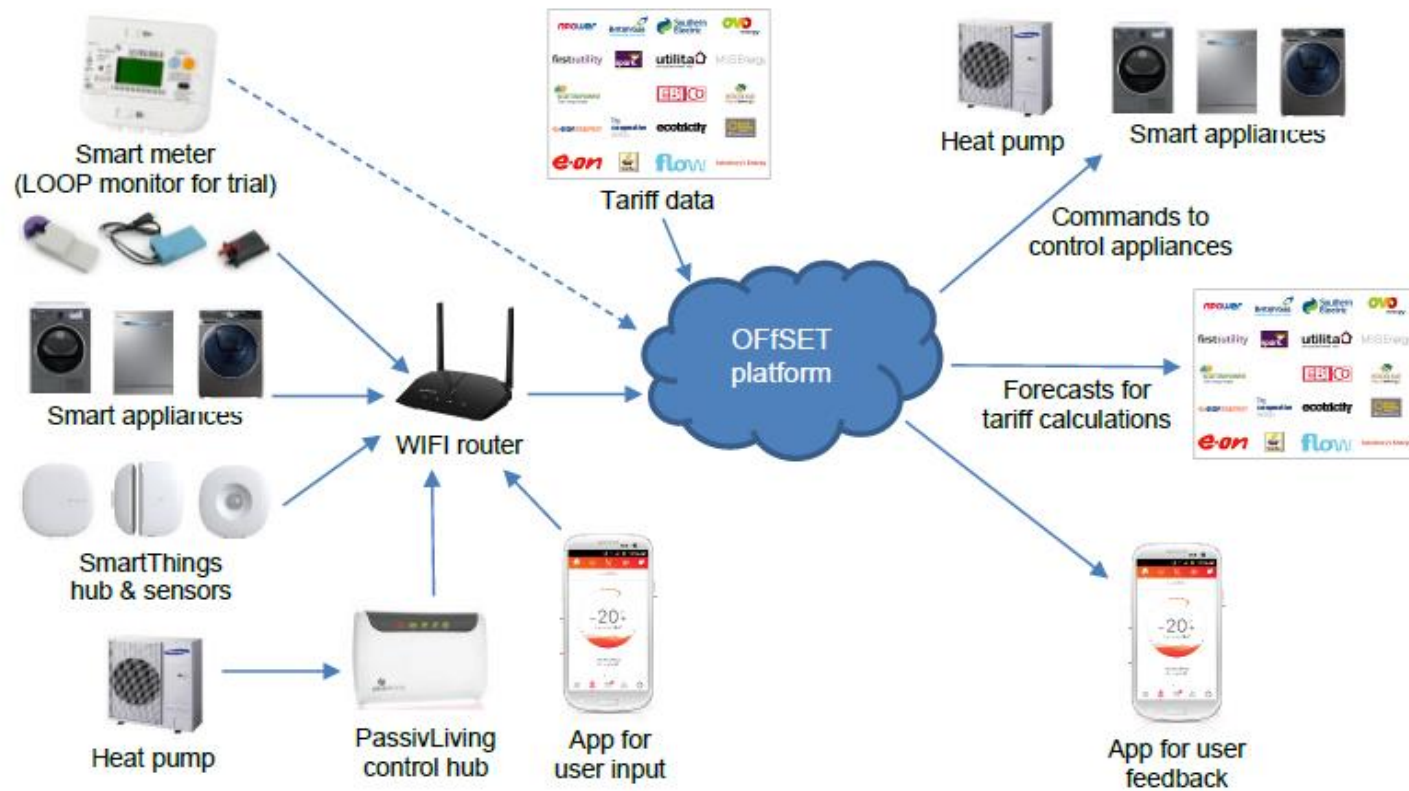
Vs.



Consumer experience across product lifecycle:

- Cost to run vs initial cost differential;
- Importance of installation and maintenance partners;

Trial Experience – 1 – integration with smart services



- Showed how tariff comparison can combine with optimization;
- Cost savings on heating of up to 20% with some “non-heat pump” ToU tariffs



- New Cosy Octopus Tariff;
- Installing second meter for heating electricity usage;

Trial Experience – 2 improving the install and maintenance experience

Reducing home heat loss
Cavity wall insulation

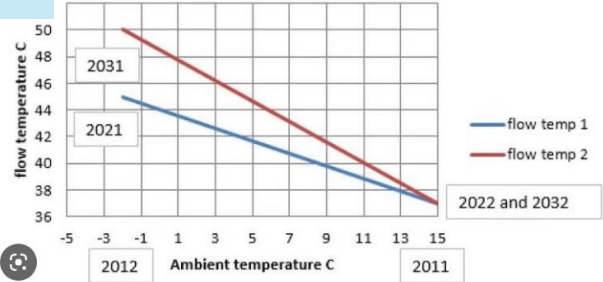
Field Setting Value (FSV) 30**
 Code 30*** - User's options for Domestic Hot Water (DHW) tank heating
 * The values in the following table are just examples for your understanding

Main Menu & Code	Menu	Function	Sub Code	MODEL CODE: AE00808KYDEG***				MODEL CODE: MMA-E00808/ MMA-E0081			
				Setting Standard	Min.	Max.	Default	Setting Standard	Min.	Max.	Default
Domestic Hot Water tank Code 30**	DHW mode activate	DHW mode	3071	1	0	2	0	1	0	1	2
		Max Temp	3021	65	45	55	55	45	55	45	55
		Stop	3022	0	0	10	2	0	10	0	10
		Start	3023	5	5	30	5	5	30	5	30
		Heat Pump	3024	5	1	20	5	1	20	5	20
	Heat Pump	Min Operating time	3025	30	5	95	30	5	95	30	5
		Max Operating time	3026	30	5	95	30	5	95	30	5
		Operation interval	3027	3	0	10	3	0	10	3	0
	Booster Heater	On/Off	3028	1	0	1	1	0	1	1	0
		Delay Time	3029	20	15	95	20	15	95	20	15
		Overload	3030	0	0	4	0	0	4	0	0
	Circulation	On/Off	3031	1	0	1	1	0	1	1	0
		Interval	3032	1	0	23	1	0	23	1	0
		Start Temp	3033	23	0	23	23	0	23	23	0
		Target Temp	3034	10	40	30	10	40	30	10	40
Duration		3035	10	5	60	10	5	60	10	5	
Timer On/Off Operation	Timer On/Off Function	3036	0	1	0	0	1	0	0	1	
	Time Duration	3037	6	3	30	6	3	30	6	3	
Solar Panel (DHW) Thermocouple	SP Combination	3038	0	2	0	0	2	0	0	2	
	Emergency (Default) Direction	3039	0	1	0	0	1	0	0	1	

- Part 1**
 Technical Guidance:
 Getting the design & installation right
- Part 2**
 The Contractual Issues:
 Getting the contract right
- Part 3**
 Specific Guidance on MIS 3005 V5.0
 (forming MGD 002 Issue 2)



Flow temp in weather comp mode



Vs.



Worcester Bosch Greenstar 4000...
 Starting from £2265

Installed next day

Model	LWT (°C)	25	30	35	40	45	50	55	60	65	70										
AE0808KYDEG/EU	Tamb (°C)																				
	-30	5.82	2.53	5.89	2.80	5.95	3.14	6.22	3.48	6.48	3.88	6.74	4.19	6.92	4.43	6.94	4.69				
	-25	8.00	3.47	8.00	3.63	8.00	3.79	8.00	4.03	8.00	4.28	8.00	4.49	8.00	4.85	8.40	5.17	7.95	5.28		
	-20	8.00	3.05	9.22	3.69	8.00	3.39	8.00	3.59	8.00	3.84	8.00	4.09	8.00	4.31	9.11	5.13	8.75	5.26		
	-15	8.00	2.61	8.00	2.86	8.00	3.14	8.00	3.36	8.00	3.61	8.00	3.84	8.00	4.01	9.35	4.87	9.54	5.24	8.00	4.85
	-10	8.00	2.28	8.00	2.44	8.00	2.72	8.00	2.88	8.00	3.06	8.00	3.33	8.00	3.56	9.65	4.48	10.01	4.96	10.21	5.27
	-7	8.00	2.41	8.00	2.41	8.00	2.46	8.00	2.64	8.00	2.87	8.00	3.10	8.00	3.26	10.19	4.39	10.43	4.81	10.79	5.18
	-2	8.00	2.21	8.00	2.21	8.00	2.10	8.00	2.32	8.00	2.57	8.00	2.69	8.00	2.79	10.36	3.92	10.80	4.62	11.04	4.86
	2	8.00	1.62	8.00	1.62	8.00	1.82	8.00	2.01	8.00	2.26	8.00	2.44	8.00	2.58	10.11	3.57	10.63	4.21	11.01	4.49
	7	8.00	1.29	8.00	1.43	8.00	1.60	8.00	1.80	8.00	2.05	8.00	2.23	8.00	2.50	9.11	3.16	9.66	3.79	10.03	4.37
	12	8.92	1.18	8.95	1.35	8.98	1.57	9.02	1.80	9.05	2.11	9.08	2.38	9.11	2.71	9.57	3.11	10.08	3.72	10.43	4.26
	15	9.10	1.09	9.14	1.26	9.20	1.49	9.26	1.71	9.30	2.01	9.36	2.29	9.42	2.62	9.85	3.01	10.33	3.59	10.67	4.10
	20	9.39	0.99	9.48	1.14	9.57	1.34	9.66	1.50	9.74	1.77	9.83	2.08	9.91	2.46	10.31	2.82	10.76	3.38	11.08	4.04
	25	9.69	0.93	9.82	1.07	9.93	1.24	10.06	1.42	10.17	1.66	10.30	1.96	10.41	2.32	10.78	2.67	11.18	3.20	11.48	3.99
	30	9.99	0.93	10.15	1.06	10.30	1.23	10.45	1.37	10.60	1.55	10.76	1.83	10.91	2.17	11.24	2.49	11.59	3.01	11.88	3.79
35	10.29	0.92	10.48	1.03	10.66	1.17	10.85	1.30	10.82	1.44	11.22	1.73	11.41	2.04	11.70	2.35	12.02	2.85	12.28	3.62	
45	10.77	0.92	11.01	1.01	11.25	1.11	11.49	1.24	11.73	1.41	11.97	1.65	12.21	1.93	12.45	2.23	12.69	2.72	12.92	3.33	



Apply for the Boiler Upgrade Scheme

Let's trial in the real world, not just "real world settings"

Already in place/nearly there:

- Half-hourly metering => ToU tariffs;
- Asset metering => Lower fixed rate for heating electricity;
- P441 => Local energy netting.

Still to come (but when?)

- Upfront costs => Market mechanism;
- Gas/electric price ratio => REMA (AEM real world demonstrators);
- Local coordination => LA funding?

Thank you

