

SUSTAINABILITY TIPS

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Portola Valley Sustainability Committee

Home Energy and Water Use

In this installment of the PV Sustainability Tips, I'll be describing some easy ways you can use tech to better understand your home energy and water use. This can be a helpful step in reducing your consumption – after all, knowing is half the battle! I'll recommend some products that I've used personally or heard a lot about. If others out there have had positive or negative experiences with these or other products, please chime in!

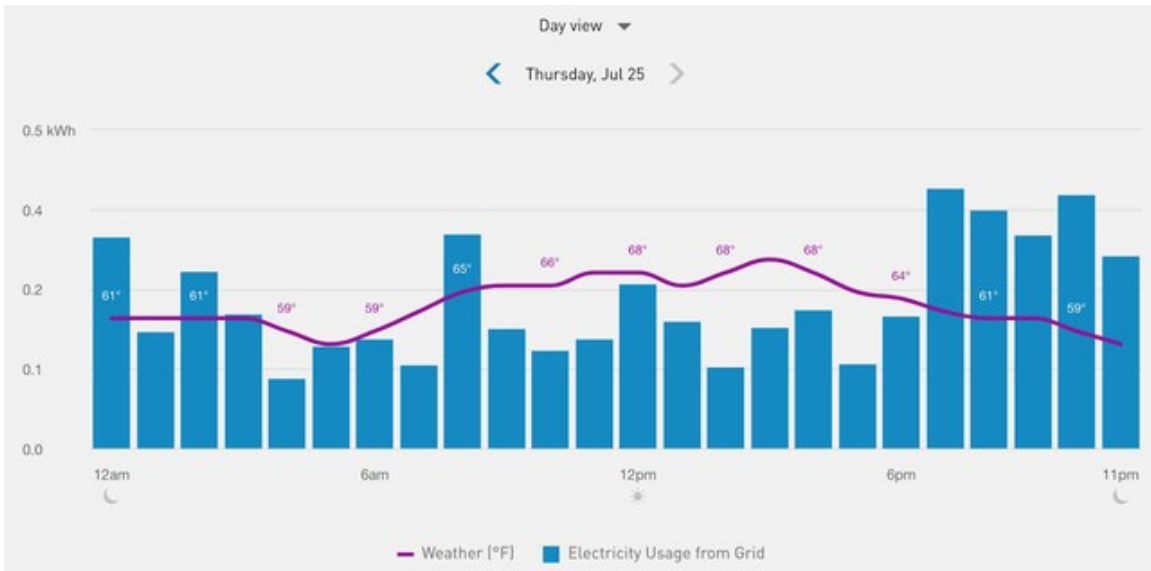
Thanks for reading,

Ronny Krashinsky
PV Sustainability Committee

Disclaimer: The products mentioned in this article do not constitute an endorsement, approval, or recommendation of the product by the Town of Portola Valley, the Sustainability Committee or any Town official. These products are provided only for informational purposes and new products are continuously coming online. Do your own due diligence. I have no personal financial stake in any of these products.

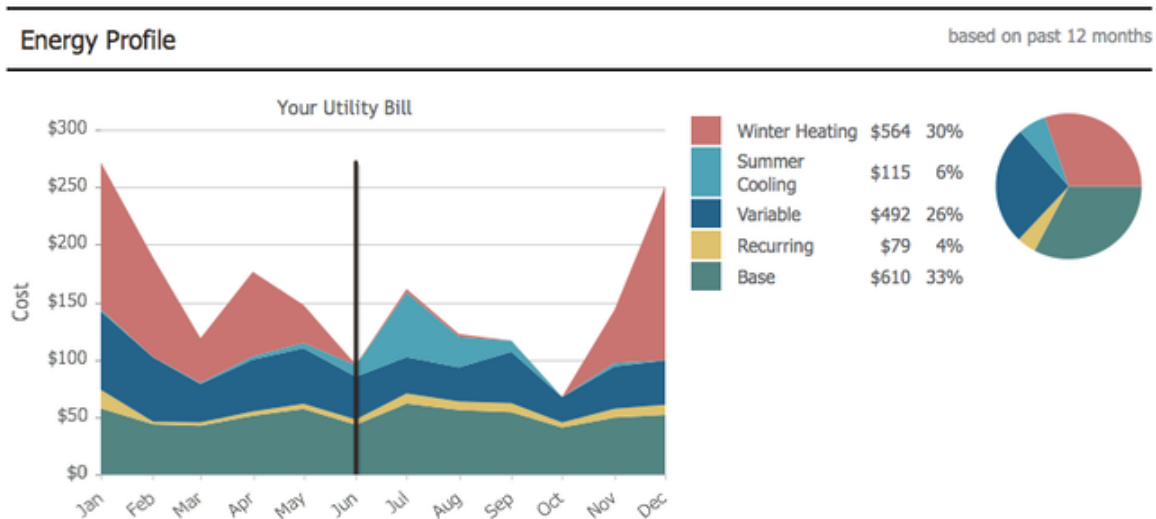
1. PG&E Energy Usage Details

As a first step you can go to [pge.com](https://www.pge.com) and select 'Energy Usage Details' to get monthly and daily usage for gas and monthly, daily, and hourly for electricity. PG&E also has a convenient 'Compare bills' feature to help you understand changes in your consumption.



2. Home Energy Audit

For more insight than the PG&E basic views, get a free [HomeIntel](#) energy audit. This is an online audit based on a questionnaire and your data from PG&E. You will get an account with detailed analysis and ongoing monitoring. You also get an optional phone consultation with an energy coach who will go over the results with you and help identify opportunities for saving. All this for free and there is no “catch” – the company is an authorized implementer of PG&E programs and they’re not trying to sell you anything. Note that the Town helped launch this effort with the [High Energy Homes Challenge](#) in 2012!



3. Home Energy Monitor

A home energy monitor connects wirelessly to your smart meter, allowing you to easily monitor your electricity use on your cell phone in real time. For example, you can flip lights on and off to see how much power they use, flip circuit breakers on and off to

check appliances, or check your “vampire power” at night when everything is supposed to be off. The device I have is [Emporia Vue](#), and setup is as simple as plugging it into the wall and then calling PG&E to allow it to connect to your meter. Refer to [PG&E’s Stream My Data](#) program (and if you run into something which says you aren’t eligible, call them, it’s probably not true).



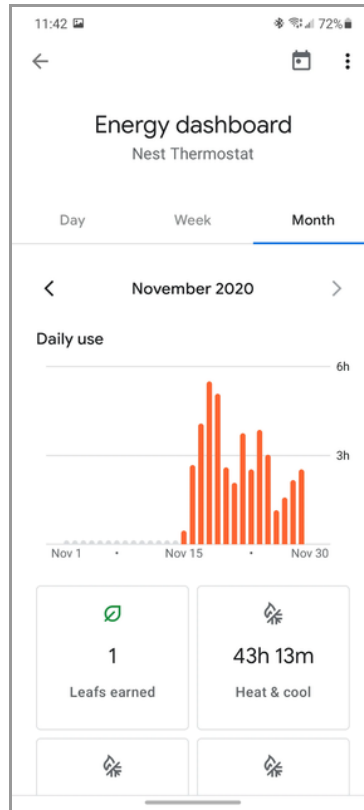
4. Energy Monitoring Smart Plugs

For measuring energy of plugged-in devices and appliances there are meters like the popular “Kill-a-Watt” (and plenty of knockoffs), but I recommend going with an energy monitoring smart plug. I’ve used the [Emporia Vue Smart Plug](#), and there are devices from other vendors available. These smart plugs integrate with the same phone app mentioned above, and they let you monitor how much power a device is using in real time or how much energy it uses each day. You can also set schedules to control a device, for example shutting off an instant hot water dispenser overnight is a good way to reduce your vampire power.



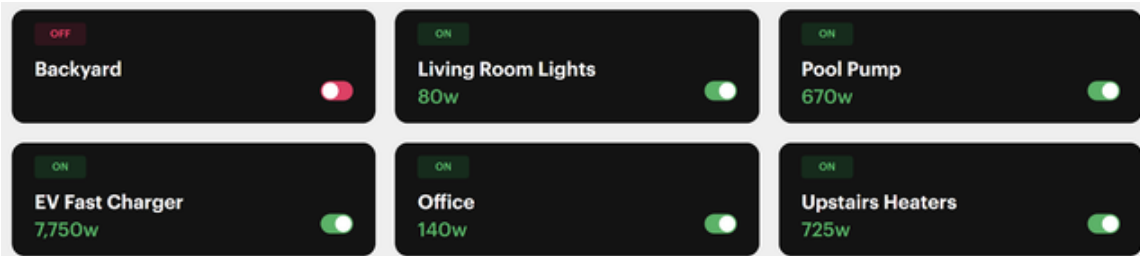
5. Smart Thermostat

A smart thermostat is great for scheduling your heat and AC, as well as controlling them from the couch or when you're away from home. Popular options include [Nest](#) and [Ecobee](#) (each of which have variants with different features), and don't miss [PG&E rebates](#). These devices also allow you to track and analyze your energy use ([Ecobee's reports](#) have more detail).

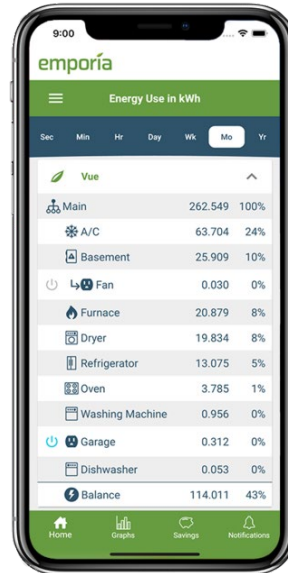
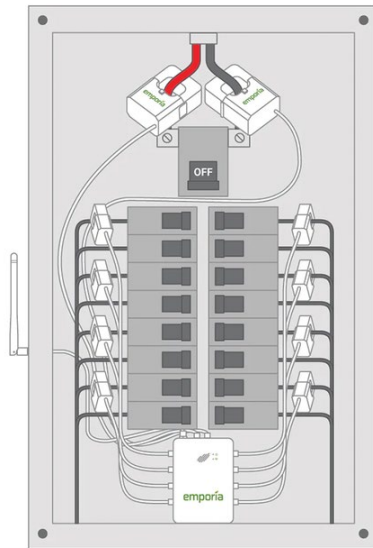


6. Smart Electrical Panel

If you're looking to upgrade your electrical panel you can get very cool per-circuit monitoring and control from companies like [Span.io](#) and [Lumin](#), but it will cost at least a few thousand dollars.

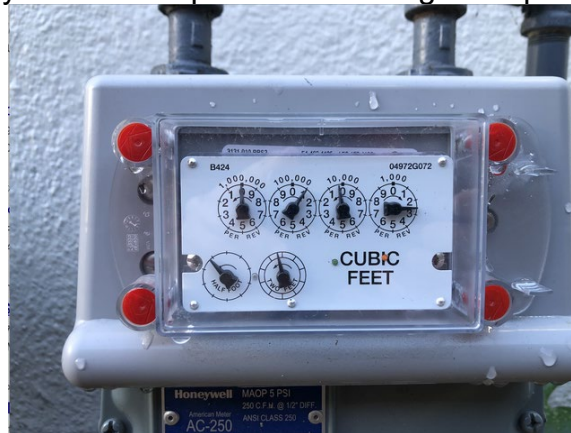


For a more incremental and less costly approach, [Emporia Vue](#) has a device which can monitor one or more circuits in your existing panel. Assuming you have sufficient space, it should be a quick job for an electrician. It integrates with the home energy monitor app mentioned above.



7. Read the Meter :-)

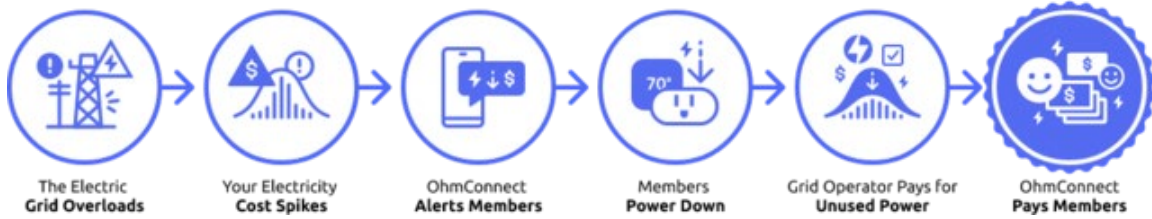
For gas, the only way I know of to get real time monitoring is the low-tech method of walking outside to the meter. You can see the dials at the bottom spin when gas is flowing, and you can take two [readings](#) to determine how much was used in the time between. The units on the meter are CCF (100 cubic feet), and your PG&E bill has the multiplier used to convert to billed therms (should be about 1.04). (I used this method to determine my idle gas consumption was unexpectedly high, and eventually tracked it down to an unnecessary continuous pilot mode on a gas fireplace.)



8. Grid Programs

Once you're geared up with smart plugs and thermostats check out [OhmConnect](#). You can choose to let the company automatically switch off your smart thermostats and plugs when the PG&E grid is overloaded, and in return get cash and prizes. Typically the shutdowns are for an hour, and you can always opt out by turning devices back on or going to the website to choose not to participate in a particular "ohm hour". My

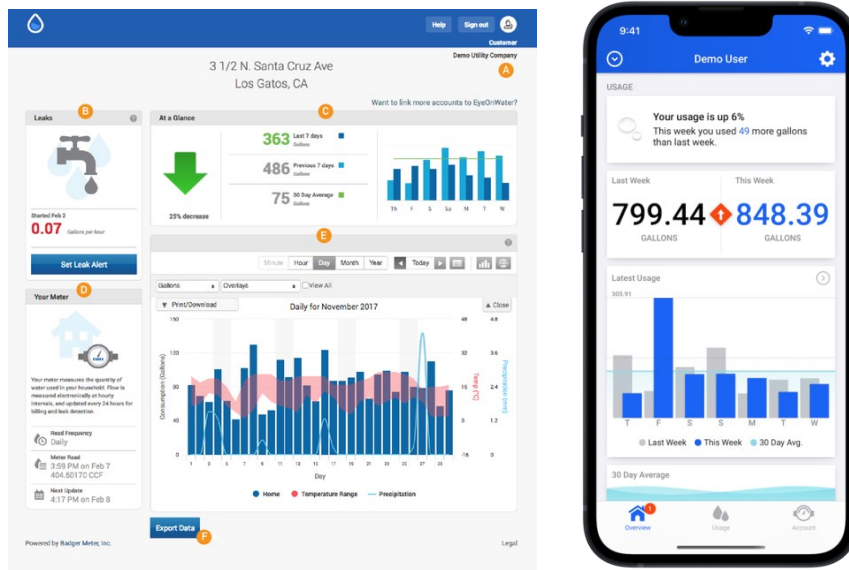
impression has been that it's a bit gimmicky (like spin-the-wheel animations for prizes), and probably not for everyone.



There is also [evPulse](#) which lets PG&E control when your electric car charges, but enrollment in the trial program is closed for the time being.

9. Water Monitoring

For water monitoring, the good news is that we're expecting Cal Water to resume rolling out new smart meters which will report usage around 4 times a day. This is a huge improvement from the monthly reporting we currently have, and it should help you find leaks much sooner. You will be able to see your water use using the [eyeonwater](#) application. Details will be provided with installation of the new meter.



10. Smart Irrigation

Finally we have smart irrigation controllers, where [Rachio](#) is a popular option I'm familiar with. Smart controllers save water by automatically adjusting with the seasons and rain history+forecast. They also let you track how many minutes you've watered for each month (or with more advanced setup estimate gallons). Be sure to check out Cal Water [rebates](#) (select Bear Gulch for water district).

APRIL USAGE (TO DATE)

29_m
time used

3_h 44_m
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2
Weather Intelligence skips

Actual:



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Scheduled:



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 [DOWNLOAD](#)