

Understanding the implications of Time-of-use rates on net metering for solar PV systems

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Here's the question: "Now that my solar PV system is installed, should I stay with my time-of-use rates or should I switch to a flat rate plan?"

Or put another way: "I've had a flat rate plan all along. Since I will generate a lot of electricity during peak grid times, shouldn't I now change to a time-of-use plan so that I will get the maximum benefit from the electricity I produce during peak times?"

The short answer to both questions is "Maybe."

If that answer doesn't suffice, then this longer answer will have to do: "Maybe. It all depends on your pattern and quantity of electricity usage. And, which utility services your home."

How it all works

The first step in answering the question of time-of-use versus flat rate is to understand how these different rate schedules interact with net-metering. However, that question has different answers for different utilities, so let's step through the utilities one-by-one.

Met-Ed

Figure 1 shows a pictorial view of how Met-Ed handles time-of-use net metering. When Met-Ed talks about this they illustrate their point using buckets; I've chosen to use rain barrels, but hopefully you get the picture.

In the Met-Ed system, peak hours are 8am to 8pm Monday through Friday. All other hours are off-peak, which brings up an interesting point from the get-go: most solar electricity production occurs during Met-Ed's peak hours.

For a typical day, any solar electricity that is produced before 8am is produced during off-peak time. Hence, any energy that is sent back to the grid before 8am will end up in the Off-Peak Rain Barrel. However, once we hit 8am, any excess energy that is back fed will now go into the Peak

Rain Barrel. **Excess Peak electricity into the Peak Rain Barrel, excess Off-Peak Electricity into the Off-Peak Rain Barrel.**

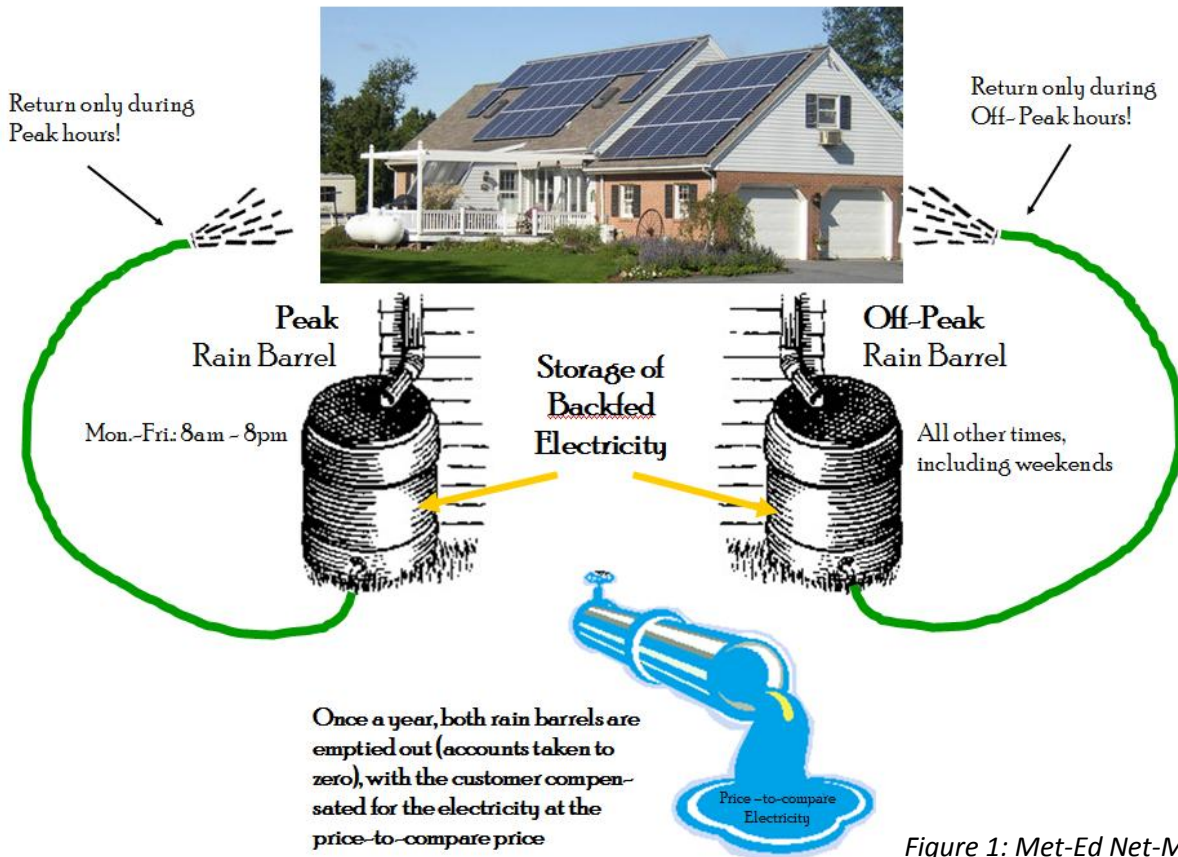


Figure 1: Met-Ed Net-Metering with Time-of use Rates

What happens when we need to pull electricity from the grid? From which barrel or barrels do we draw the electricity if we have indeed stored up electricity from previous solar production? This has a simple answer: **during peak times you need to draw from the Peak Rain Barrel, and during Off-Peak times you need to draw from the Off-Peak Rain Barrel.** Thus, if you need to draw 25 kWhrs of electricity during the weekend, you will only be able to draw any of your reserves from the Off-Peak Rain Barrel (which probably has little if anything in it), even though you may have 40 kWhrs of reserve in the Peak Rain Barrel. Perhaps, now you begin to see the tricky aspect to determining which rate structure is best for you.

One other little twist makes things a bit more complex—the big drain pipe at the bottom of Figure 1. Once a year (for Met-Ed I believe it is in May), Met-Ed will empty out both rain barrels, essentially zeroing out your reserve Peak and Off-Peak electricity. **You will then be compensated for that electricity at the Price-to-Compare rate, which is much less than either the Peak or Off-Peak rates.**

PPL

This one is the easiest of all. PPL does not allow net-metering with time-of-use plans. Thus, if you install a Solar PV system in PPL territory and you want to take advantage of the benefits of net-metering, you will have to switch to a flat rate plan.

With a flat rate plan, all the backfed KWhrs go into one rain barrel. As with Met-Ed, this rain barrel is drained once a year and the customer compensated for the electricity. However, PPL is on a different schedule right now, which means:

- 1) All customers with net-metering accounts will have their accounts zeroed out in December 2010 and compensated at the following “rough” rates provided by PPL:
 - RS Rate 13 cents**
 - GS1 Rate 14 cents**
 - GS3 Rate 12 cents**
 - LP4 Rate 9 cents**
- 2) In May 2011, all net-metering accounts will again be zeroed out and paid to the customer at rates yet-to-be-supplied by PPL.
- 3) From that point on, PPL will make compensation in May of each year, thus putting them on the same schedule as Met-Ed.