



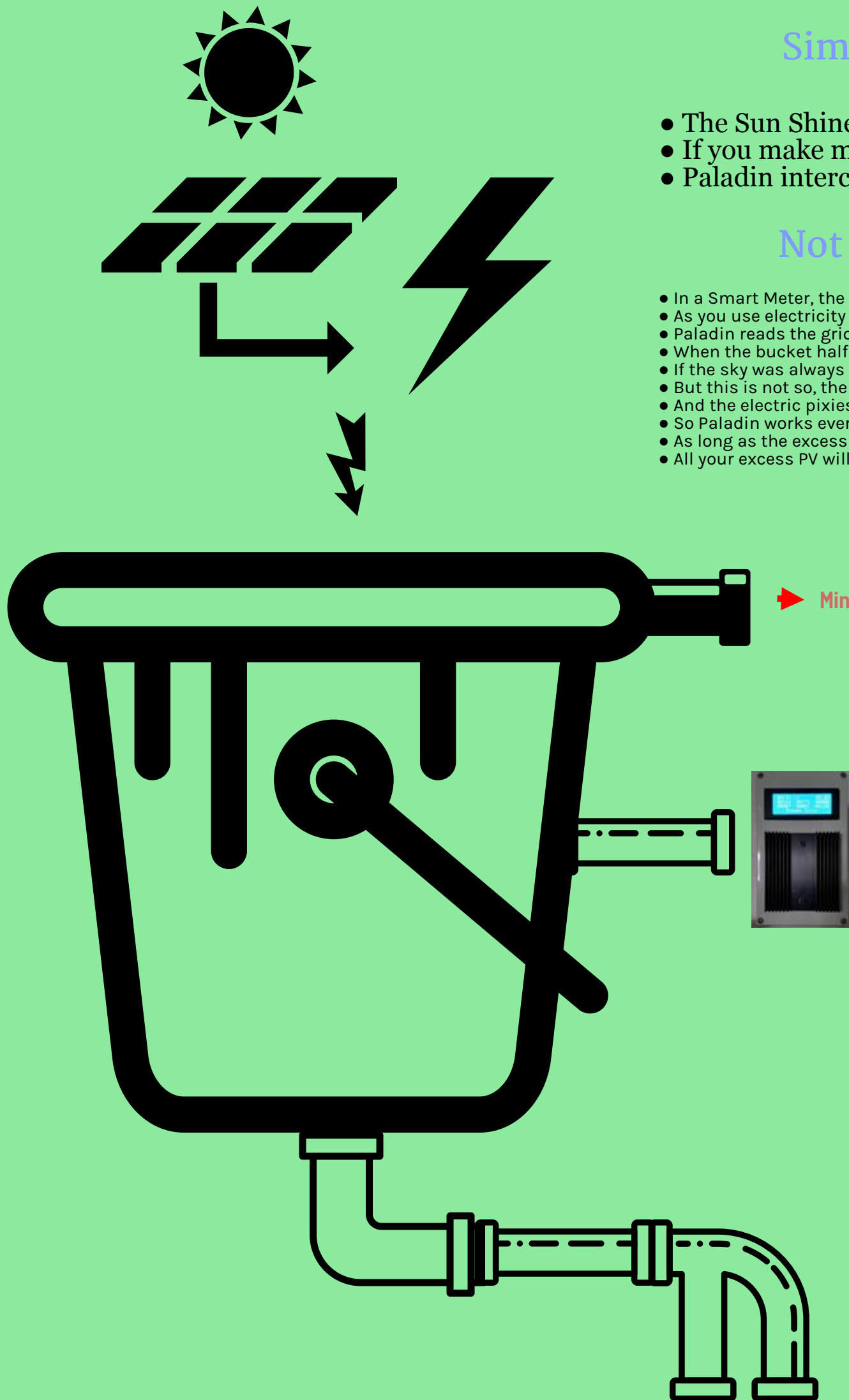
The Smart Meter Bucket analogy

Simple Explanation

- The Sun Shines on your PV Panels and makes Electricity to use.
- If you make more than you use, the bucket fills and you export.
- Paladin intercepts the excess and sends it to the Hot Water System.

Not So Simple Explanation

- In a Smart Meter, the bucket is a 3600 joule (1 watt/second) capacitor.
- As you use electricity the bucket empties and as you make it, it fills.
- Paladin reads the grid - house line 3200 times a second and knows exactly what is happening in the bucket, so.
- When the bucket half full (or empty) it diverts exactly the correct amount to the hot water heater to keep everything in balance.
- If the sky was always blue and the house load always steady - this would be easy, and you could do this with a timer.
- But this is not so, the balance between the PV and the house load is chaotic and ever changing.
- And the electric pixies dance fast
- So Paladin works every mains cycle, adjusting the hot water load regardless of the house demand and PV output.
- As long as the excess is less than your heater capacity and the water temperature less than maximum :
- All your excess PV will go to the hot water and virtually none to the grid.



➡ Minimal Export

