

MINIING THE GAP

rpi smartMetering

how raspberry pi and nerds
will save the world

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Why?

I like to know!

I like to learn!

I like autonomy!

I`d like a better world!

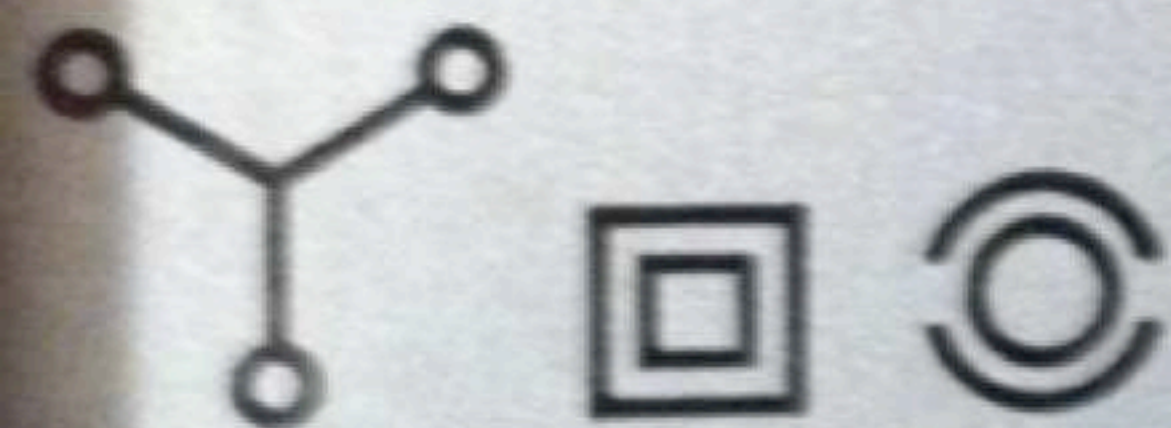
Landis+Gyr

0 1 5 1 2 0

7

kWh

Drehstromzähler



Landis +
Gyr



MM2600J

3x230/400 V

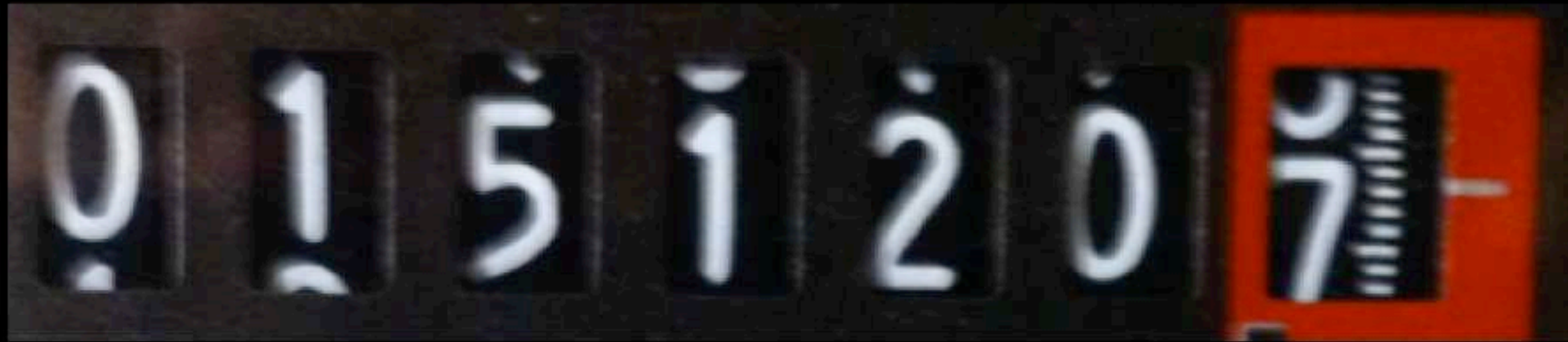
75 U/kWh

Nr.

84 3

10(60) A

Schltg. 4000

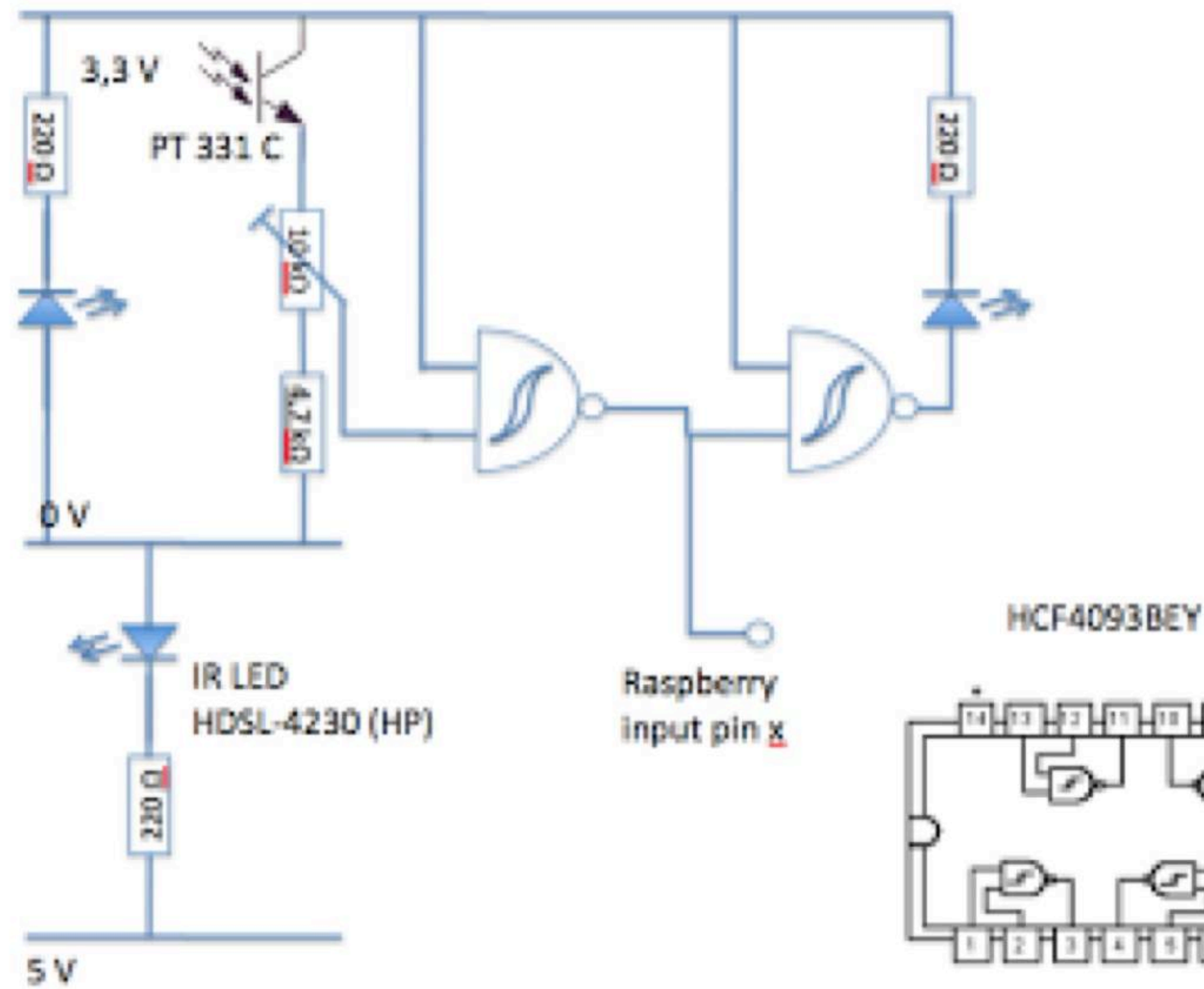


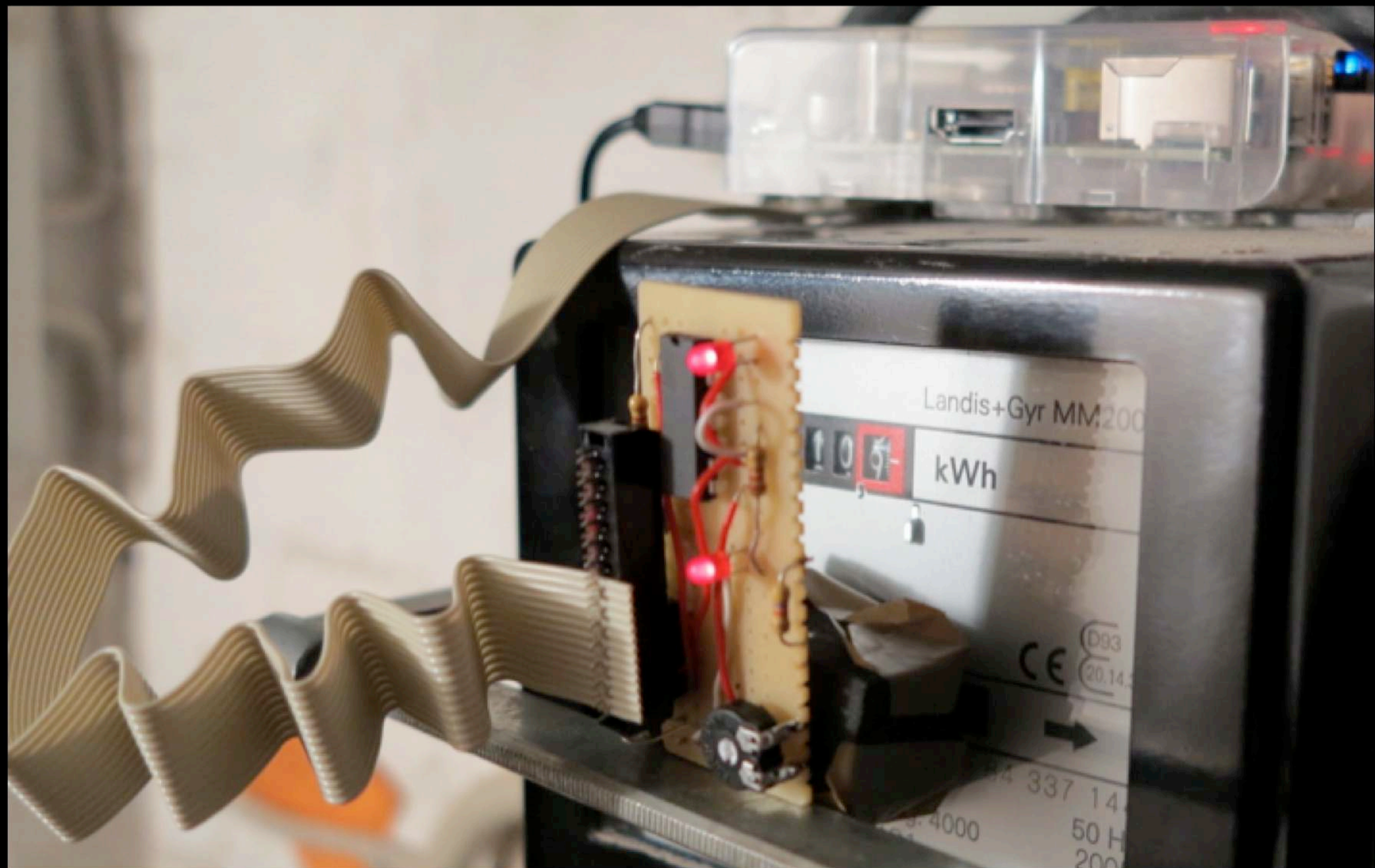
Are 3359 kW/h
per year
a lot for one man
and half a girl?

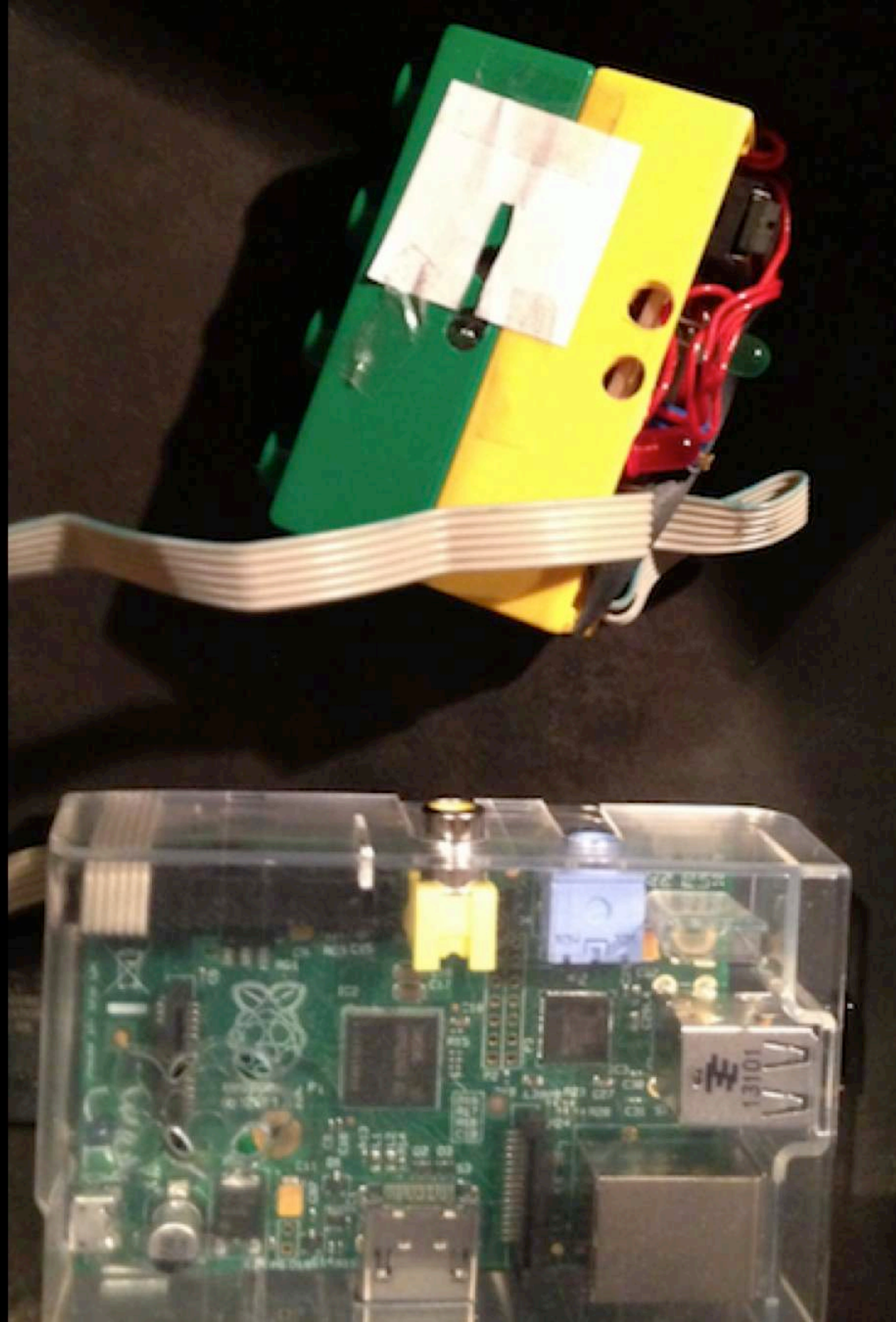


How to measure?

- Shine a light
- An infrared light
- Use a phototransistor to read the reflection
- Use a schmitt-trigger for a nice signal
- Use the raspberry pi's gpio
- Use node.js





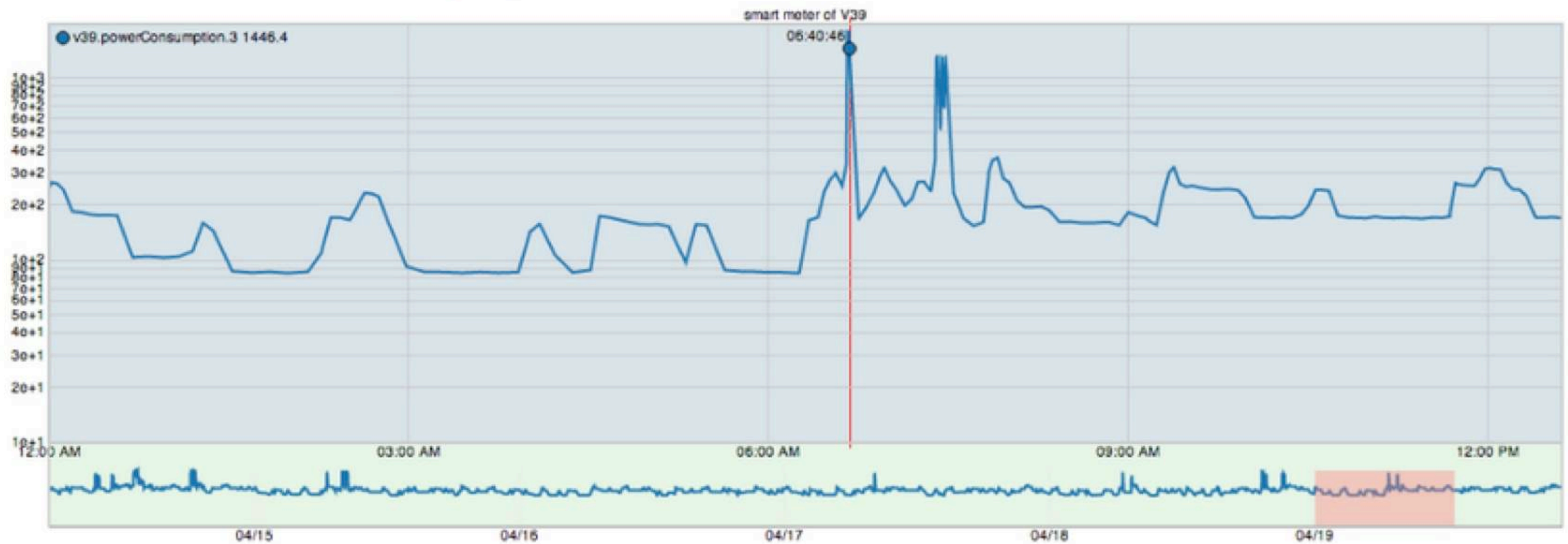



```
1  /**
2   Johannes Mainusch
3   20130329
4   instantiate an Energy Object and calculate consumption
5  */
6
7  function energyObject(params) {
8      var objref = this,
9          gotDataEvent = "gotData",
10         $el;
11
12     // Simple constructor
13     if (params && Object.keys && Object.keys(params).length >= 1) {
14         Object.keys(params).forEach(function(param) {
15             objref[param] = params[param];
16         })
17     }
18
19     this.summaryTableDiv = "summaryTableDiv1234";
20     this.meterPlotDiv = "meterPlotDiv1234";
21
22     // Introduce a wrapper div to match jQuery style
23     this.$el = $el = $([
24         '<div>',
25         '<div id="'+this.summaryTableDiv+'"></div>',
26         '<div id="'+this.meterPlotDiv+'"></div>',
27         '</div>'
28     ].join(' '));
```

<https://github.com/ahoi-senn>

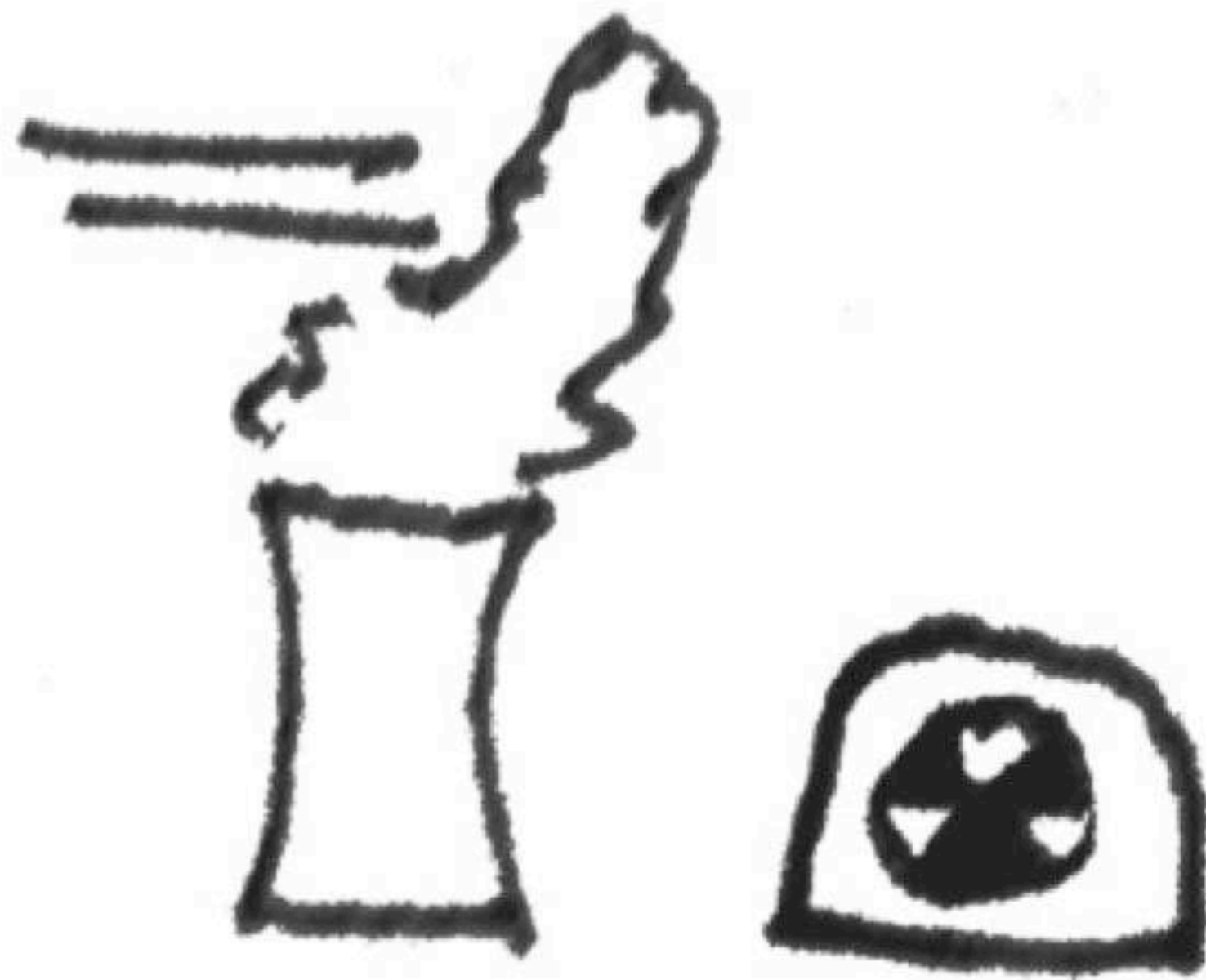
Energy Meter

selected entries: 4000
from: Sun Apr 14 2013 05:25:35 GMT+0200 (CEST)
to: Fri Apr 19 2013 22:20:33 GMT+0200 (CEST)
tdiff[s]: 492897.327
KW/h per day: 9.35
KW/h per year: 3412.3



100 Watt * 40, Mio Haushalte

2x

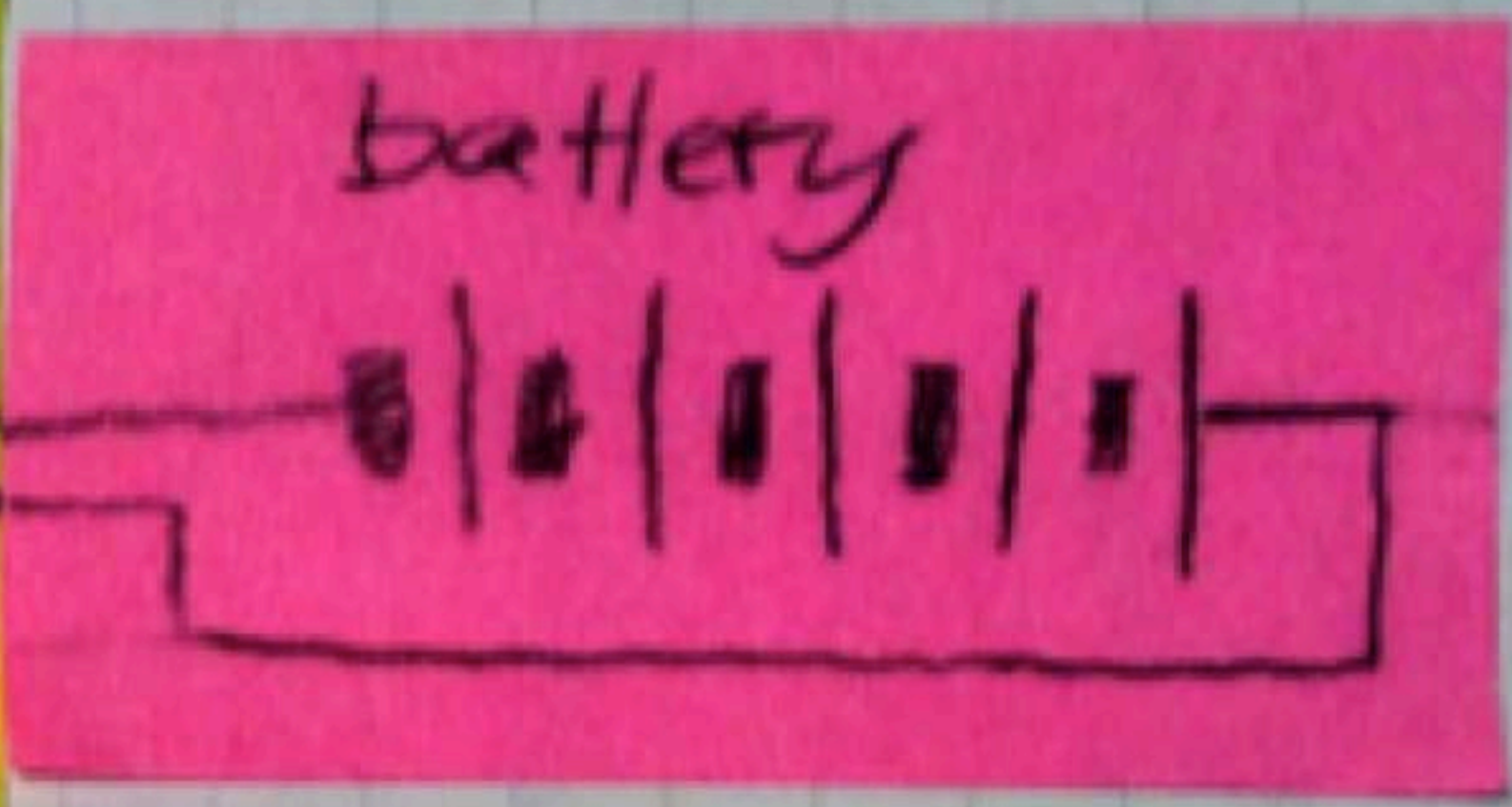
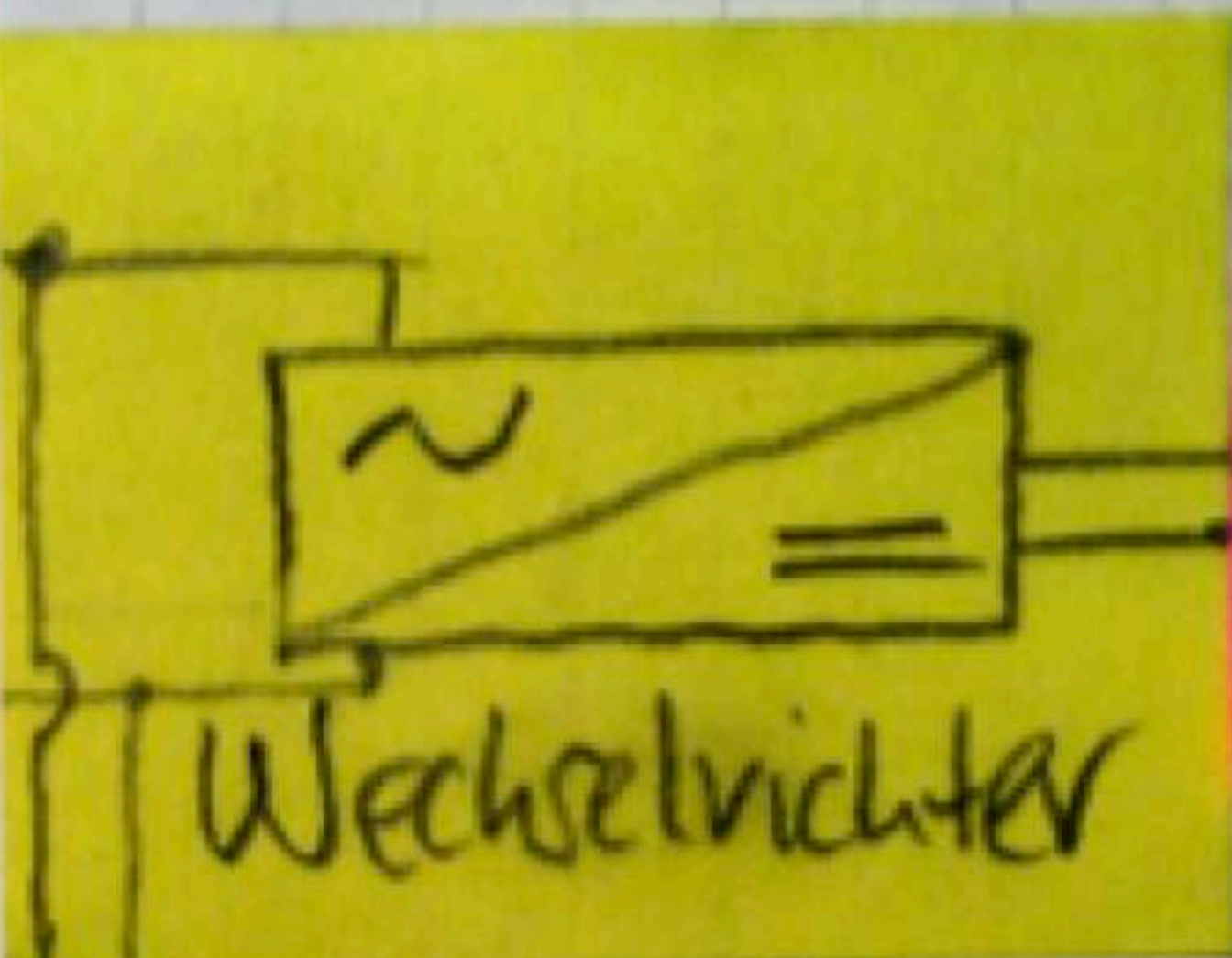
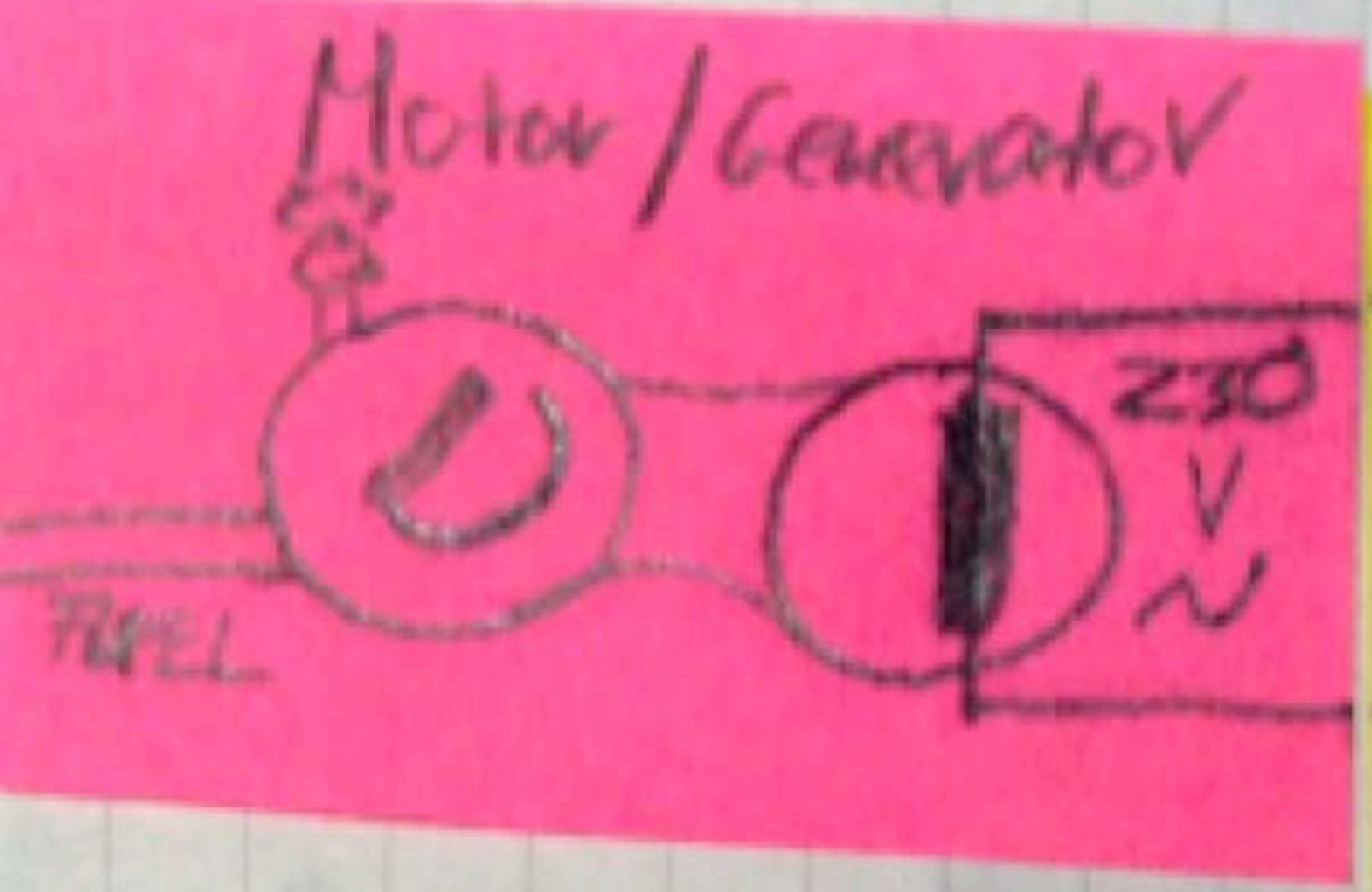


I consume 3359 kWh per year...

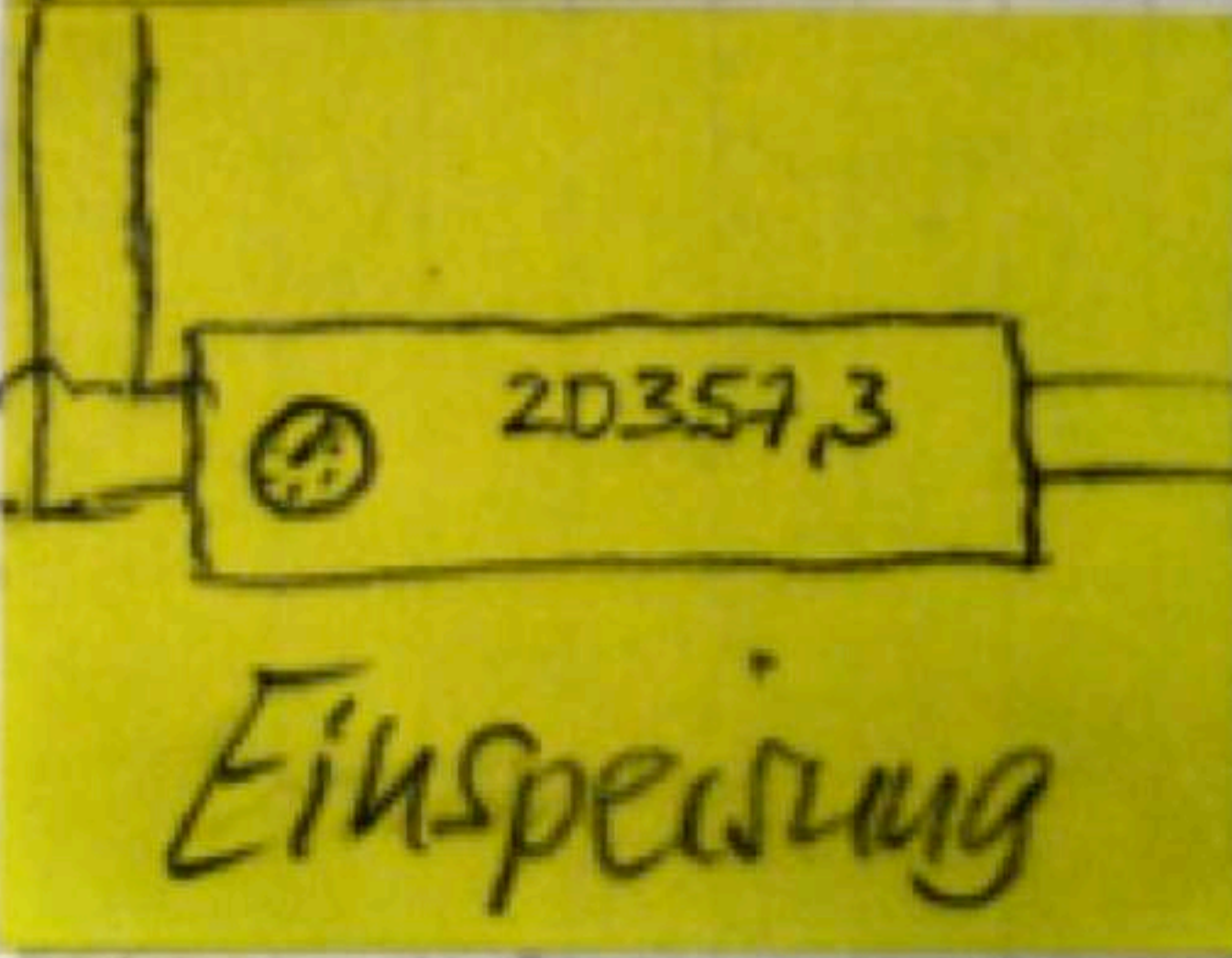
\Rightarrow 383 Watts on average

Why can't I produce ~~383~~ 500 W?

- \rightarrow Gas Turbine ?
- \rightarrow Otto Motor ?
- \rightarrow Fuel Cell ?



my household



the city of Hamburg

So, now I produce
electrical energy!
 $\sim 0,5 - 1,5 \text{ kW}$

So now it needs an
independent avsitration board!

Marketing name $E=Mc^2$

\Rightarrow So now we can
implement a new
world currency
which is bound to
Energy!

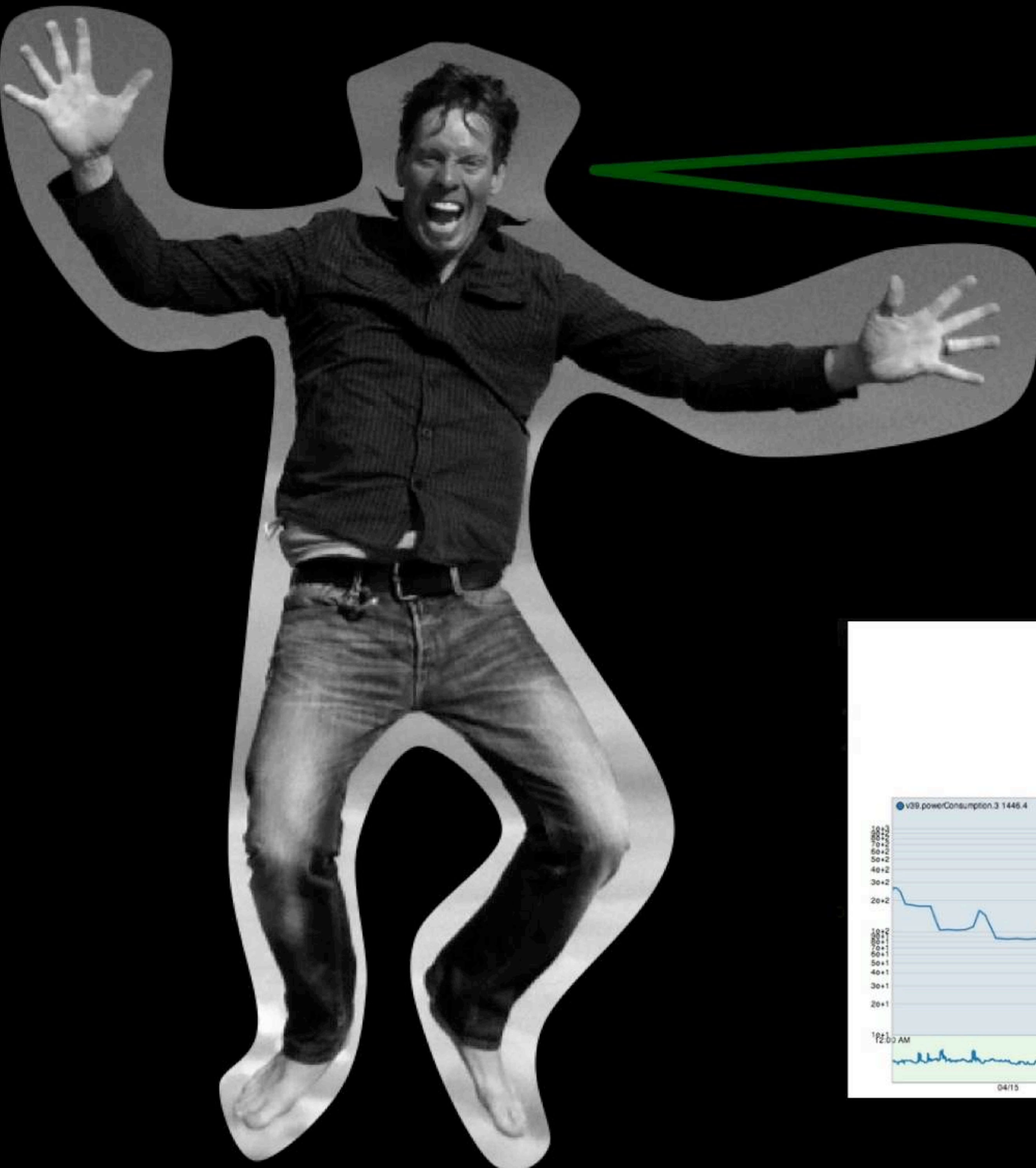
This will be the revolution !

I have a dream...

...of nerds and geeks
who unitedly strive
to make the world
a better place!

Join the revolution!

learn,
inspire,
be nerd...



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