Prosumer Policy - Introducing an open source Python tool to evaluate the regulation of PV-battery systems

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Motivation: Why Investigate Solar Self-consumption ?

- Retail electricity prices have fallen below the feed-in tariff in Germany. Consumers now would rather consume their own energy than feed into the grid.
- Consumers will use storage systems to maximize their self-consumption
- However, retail prices are fixed and “prosumers” are not exposed to market signals, they operate their storage in a non-system-friendly manner → Incurs costs and introduces economic inefficiencies

- **How to incentivize system-friendly dispatch of batteries?**

Case	Real Time Pricing	Variable FIT	Capacity-based
BAU	✘	✘	✘
C	✘	✘	✔
RTP	✔	✘	✘
RTP+C	✔	✘	✔
vFIT	✘	✔	✘
vFIT+C	✘	✔	✔
RTP+vFIT	✔	✔	✘
RTP+vFIT+C	✔	✔	✔

Prosumer Policy – The Model

- Model optimizes the dispatch of a household battery connected to a PV system under different regulatory regimes, striving to minimize cost of procurement of energy for the prosumer
- Optimization model implemented in Python and the Gurobi wrapper package
- Ready to use open data from Renewables.ninja, Open Power System Data, …
- Right now: Hashing out the details of open sourcing and hosting (first of the institute…)

- License: BSD (new)
- Online Link to repository will be made available via OpenMod mailing list