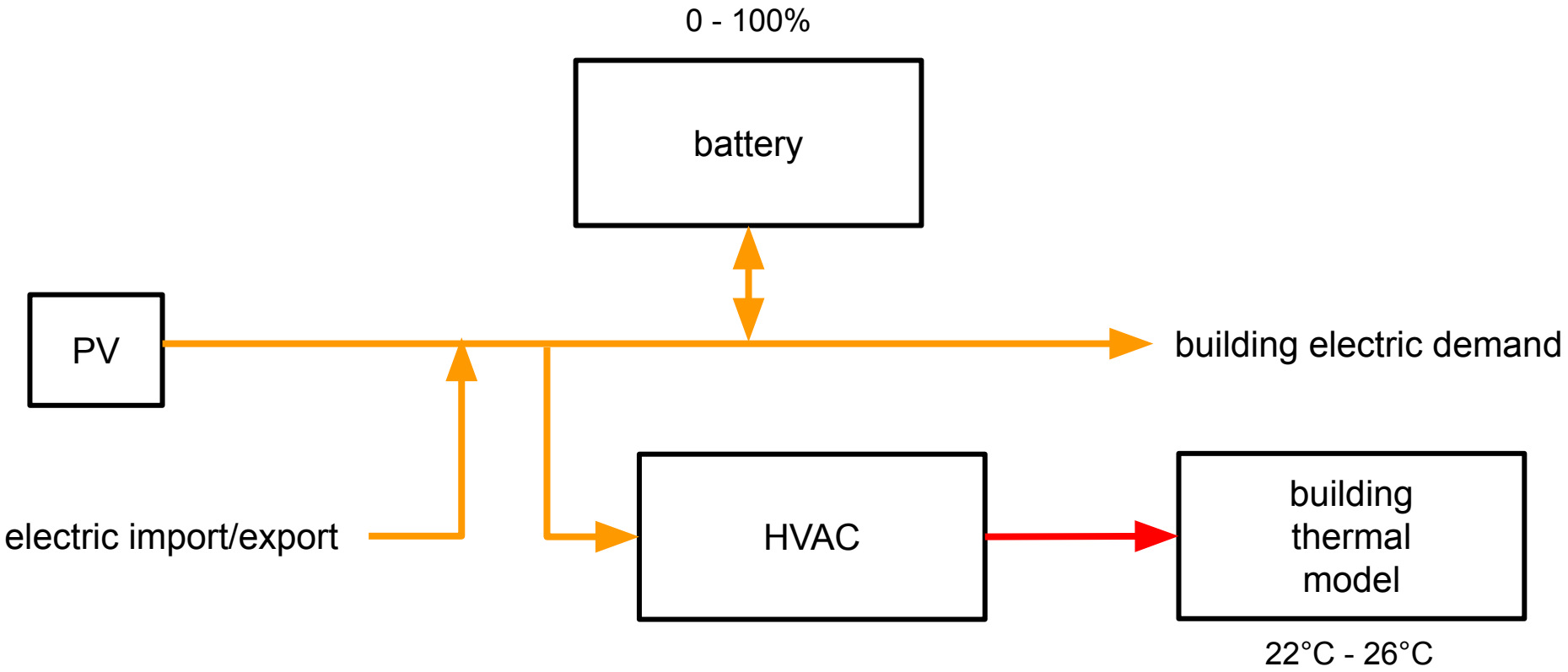
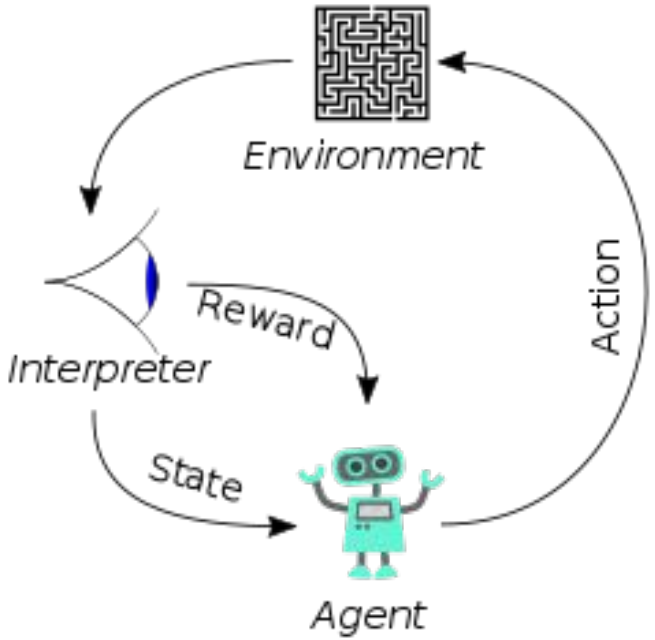
Self-consumption optimization with artificial intelligence

Hackdays-Challenge-2

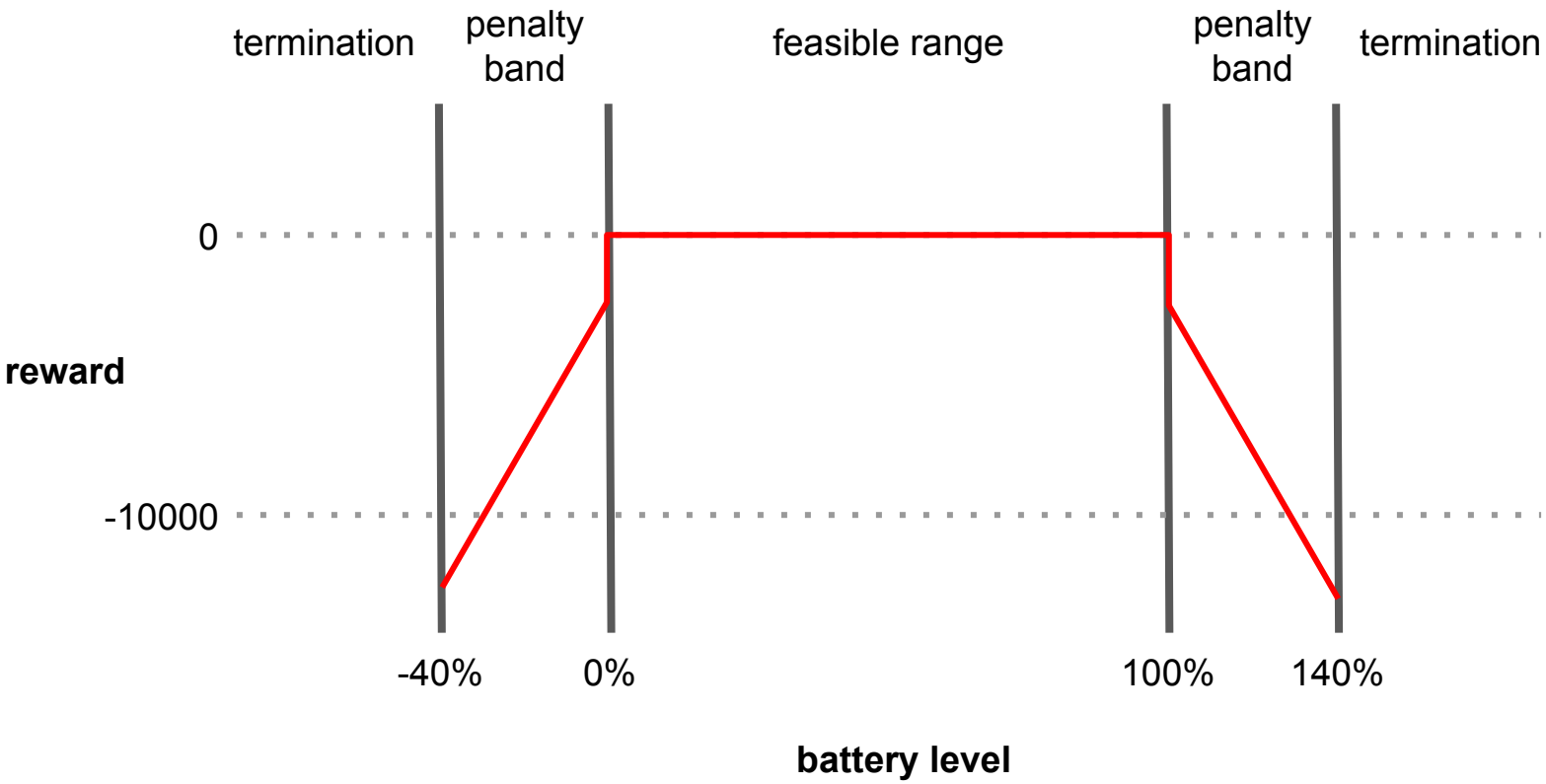
The system


0 - 100%
battery
PV
building electric demand
electric import/export
HVAC
building
thermal
model
22°C - 26°C

Reinforcement learning



Keeping battery within max/min limits:

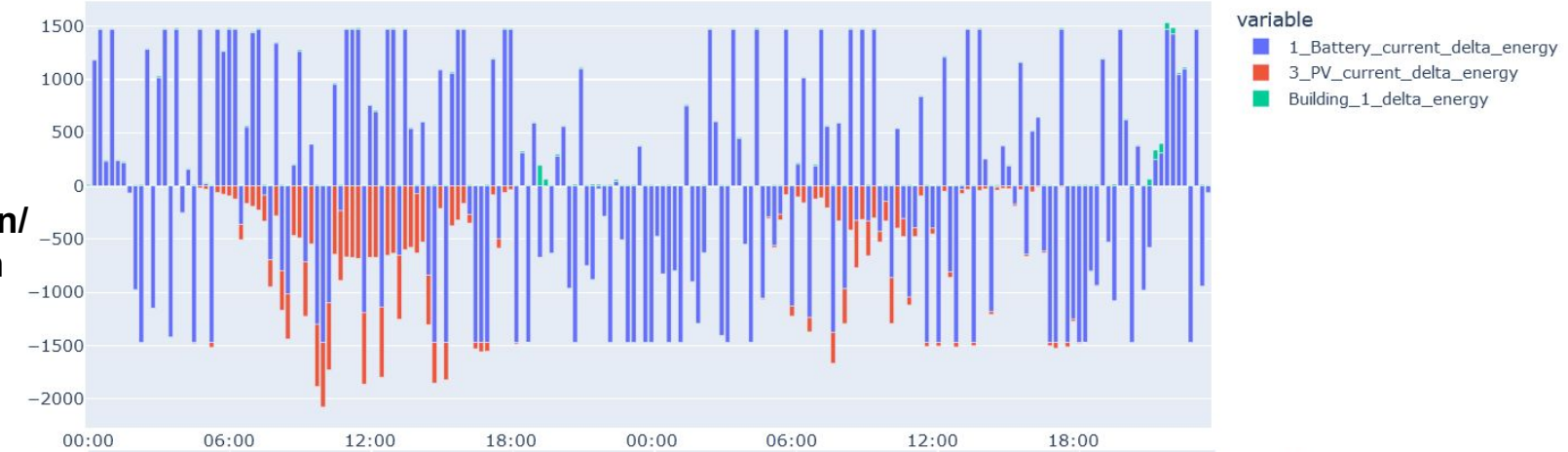


Battery results:

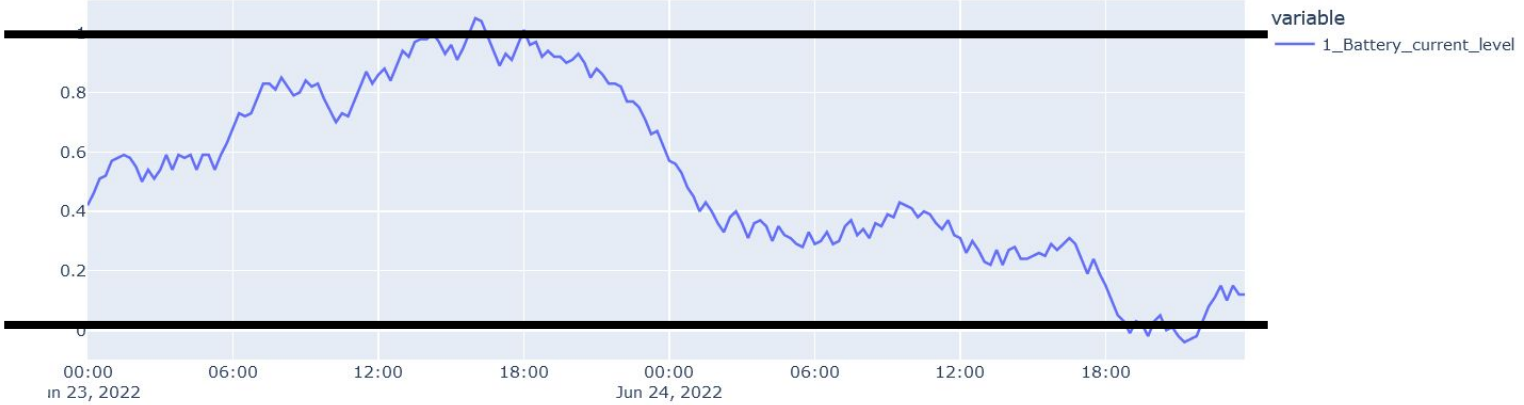
Conclusion:

- Energy storage kept within min/max limits
- But charging/discharging all the time → further work!

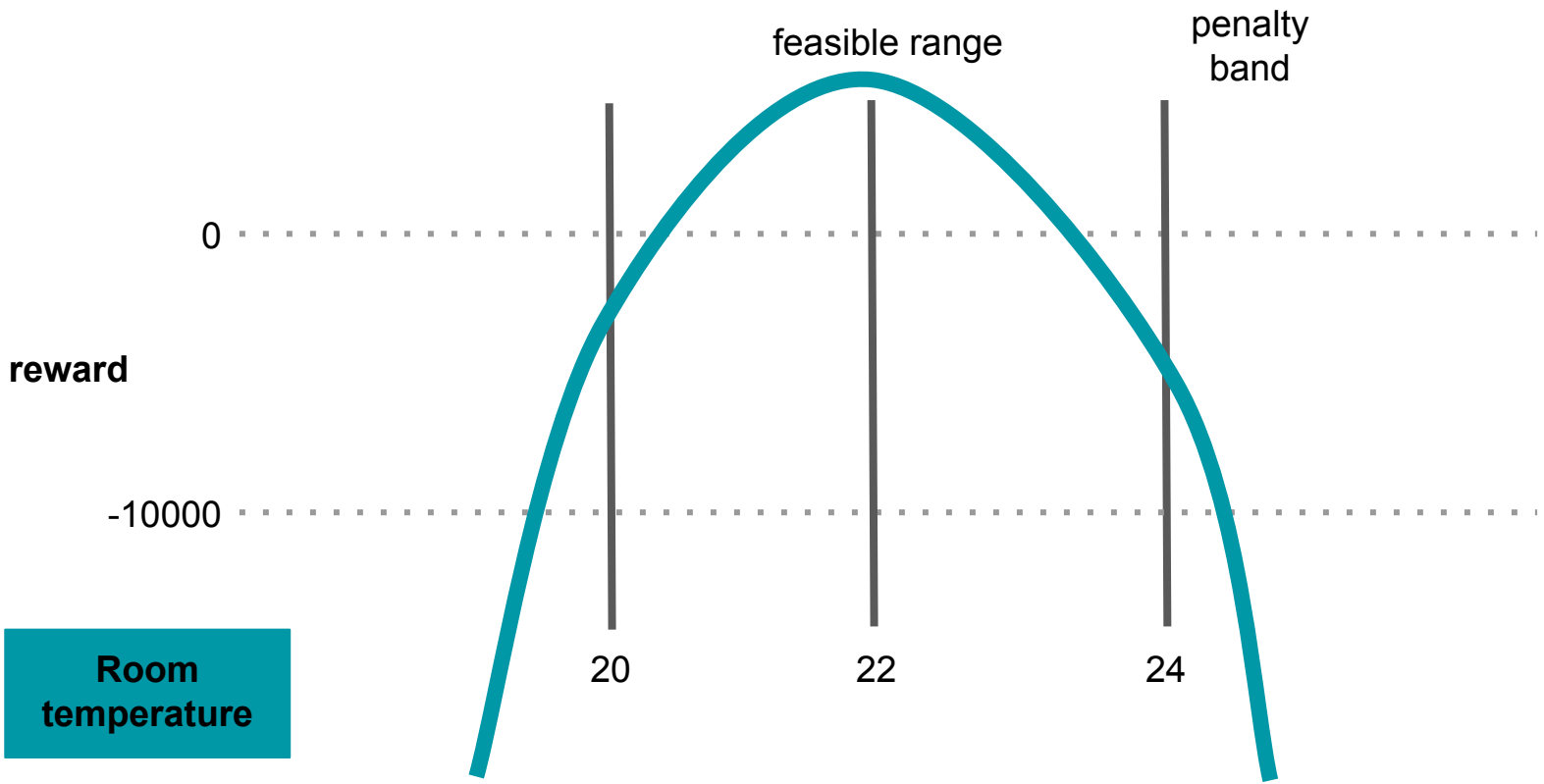
Energy consumption/ production



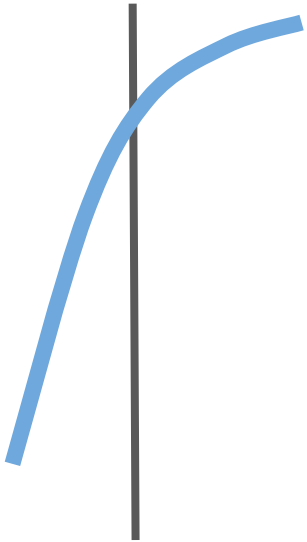
Battery charge level



Keeping energy storage within max/min limits:

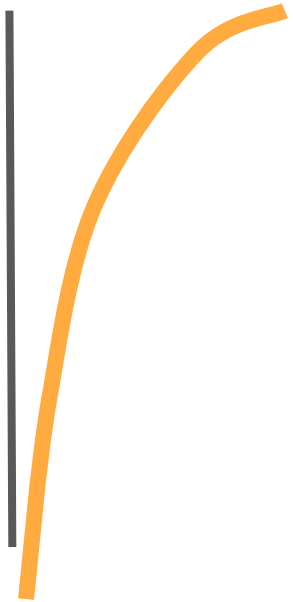


Keeping energy storage within max/min limits:



Smooth:
E.g. parabola

Step:
stepwise



Asymptotic:
E.g. hyperbola
1/(x-border)