

Update on User-oriented sustainable Operation of the VISPA-Cluster

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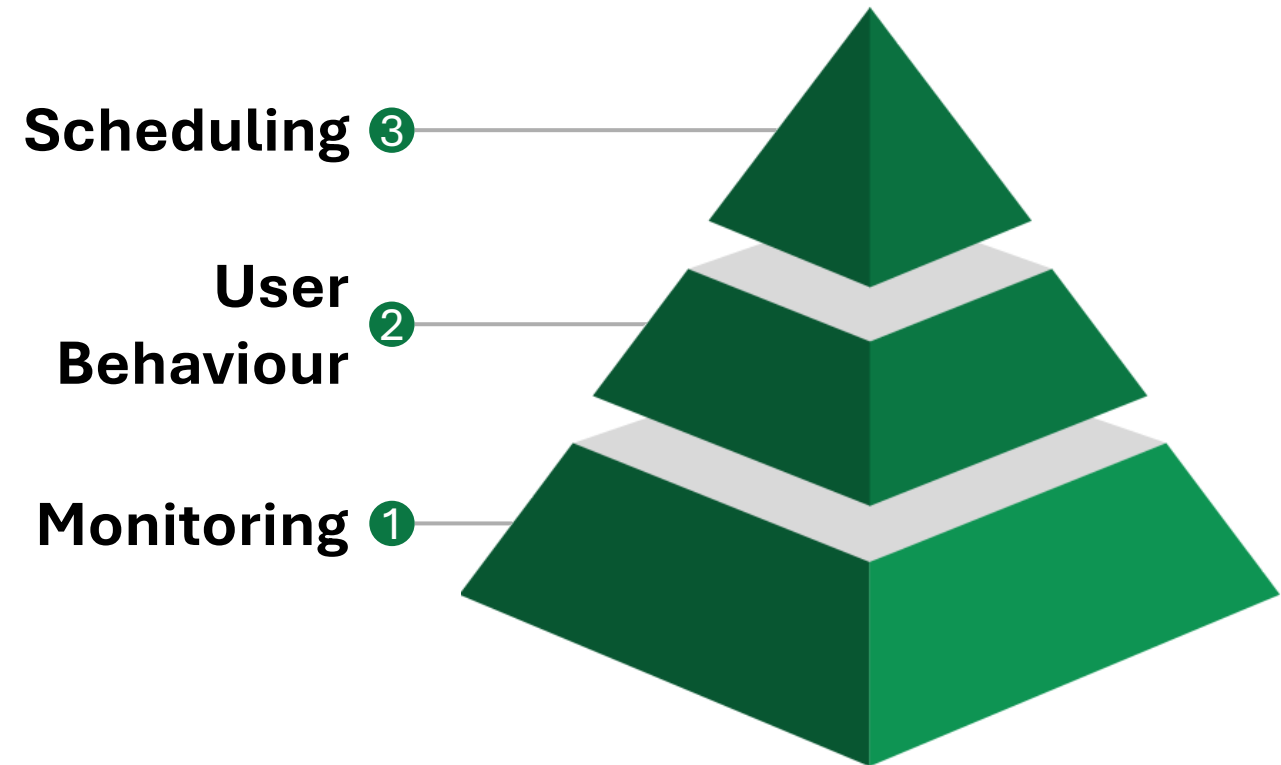
18.11.2024

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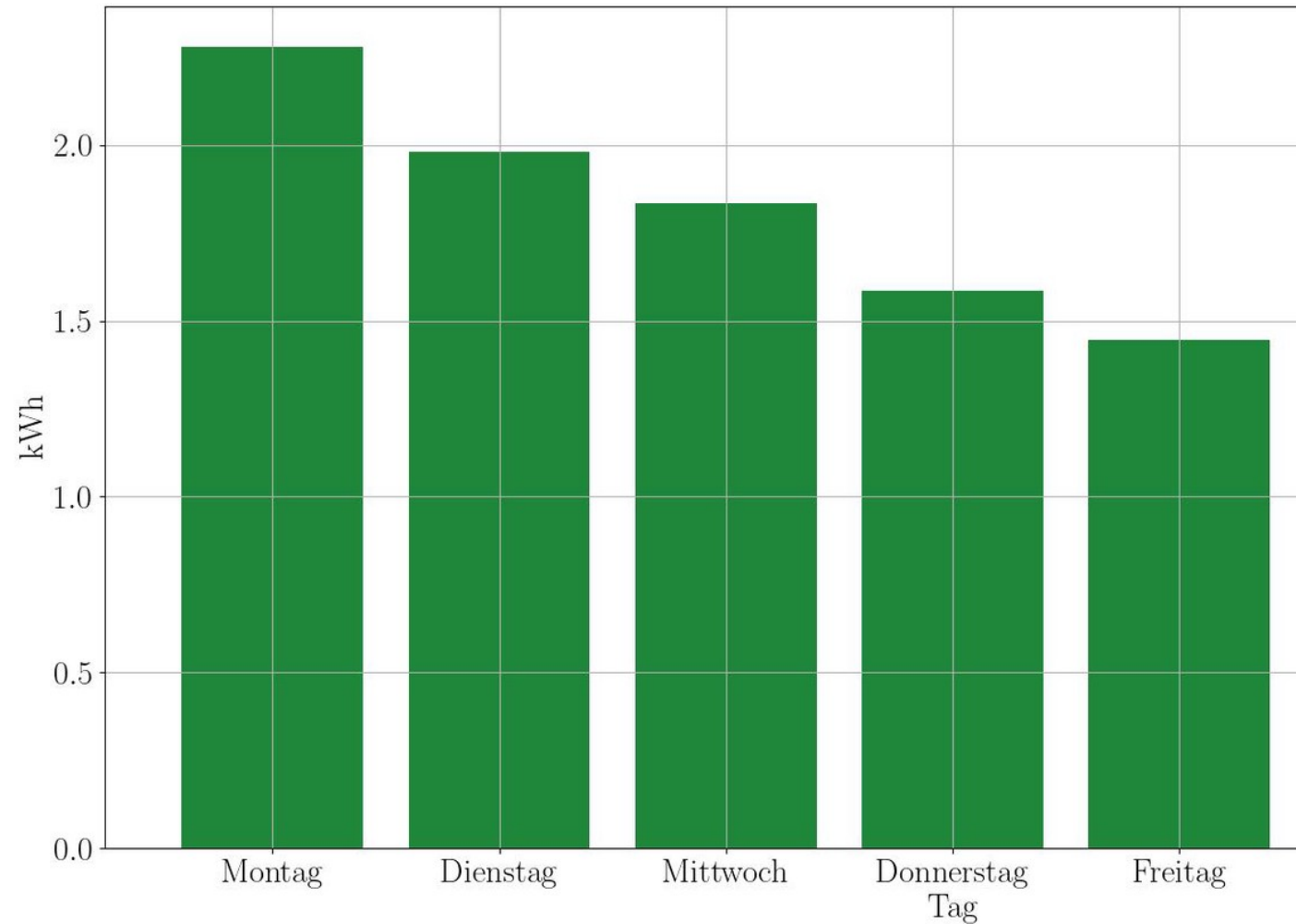
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Who are we?

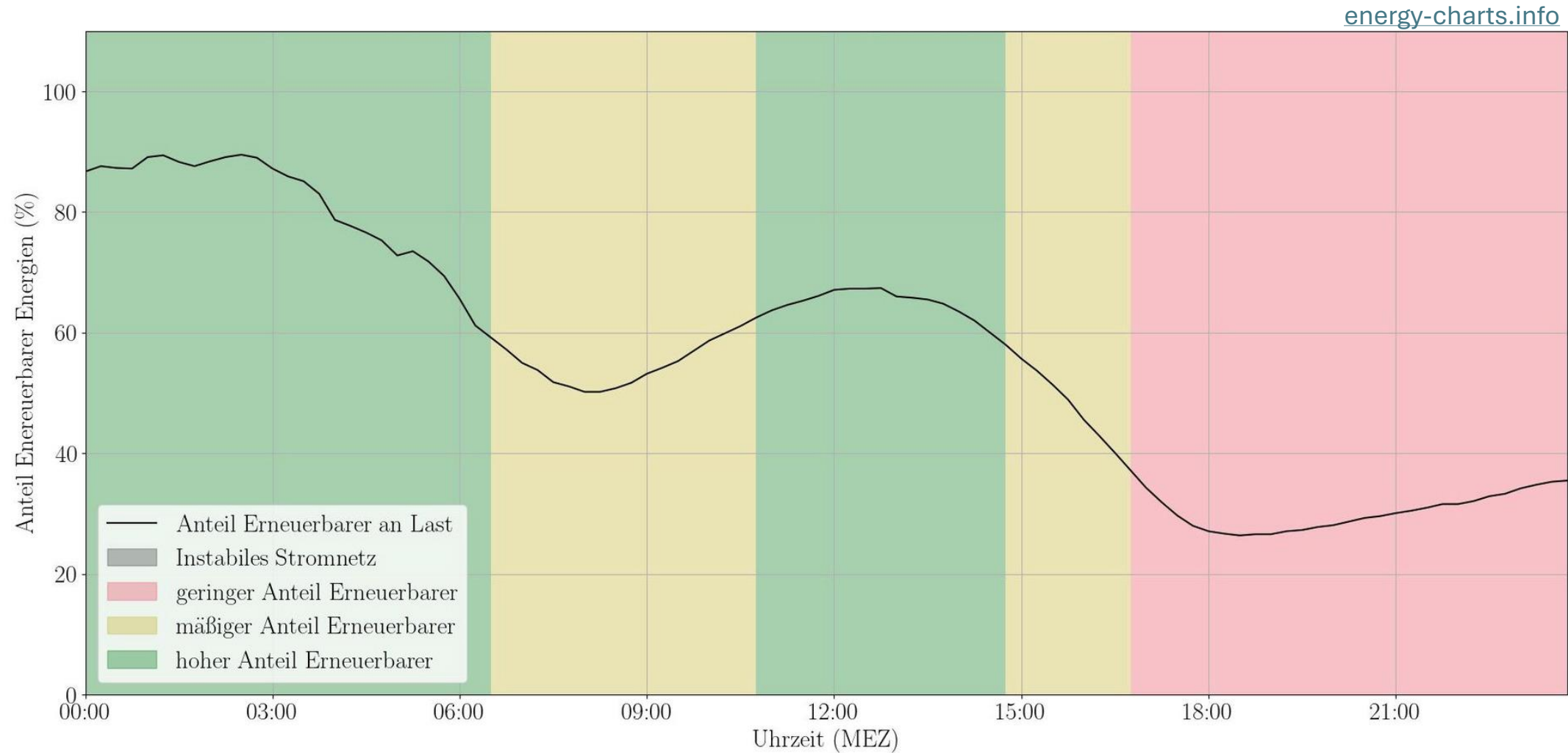
- Small computing cluster
 - 14 machines
 - 30 GPUs
 - User base
 - $O(20)$ power users
 - $O(100)$ students
- Our mission:
 - Sustainable operation
 - Low impact on user experience



- Mattermost-bot “PETRA”
- Individual power usage
- 🚦 Energy mix forecast



Monitoring and communication

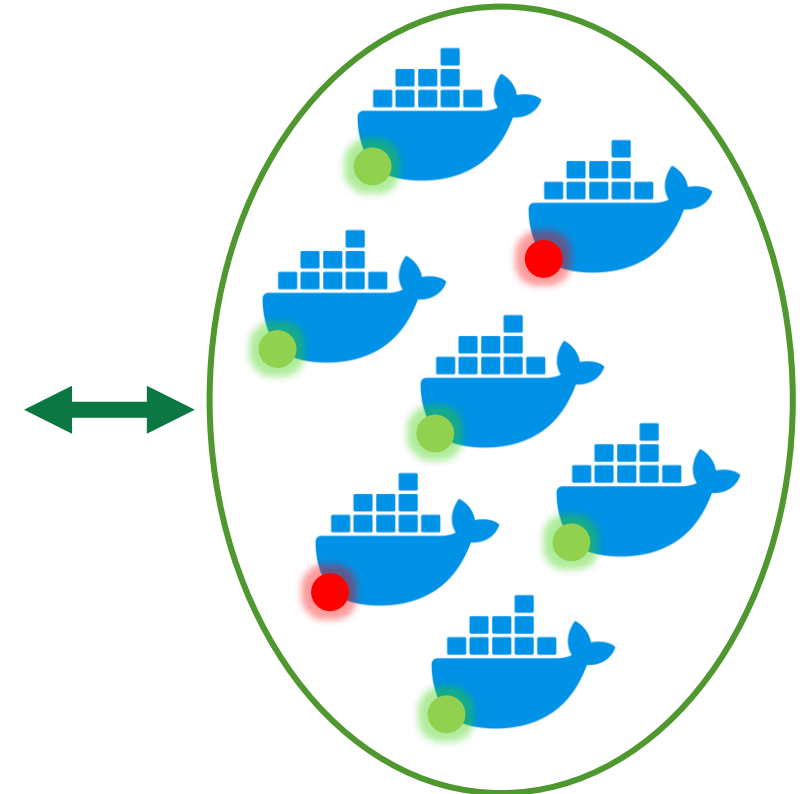


- Tools for users
- Batch system
- Project tag
 - Tag jobs as belonging together
 - Energy usage of entire projects
-  Energy stop light
 - Job execution ↔ renewables
 - Maximum Waiting period available

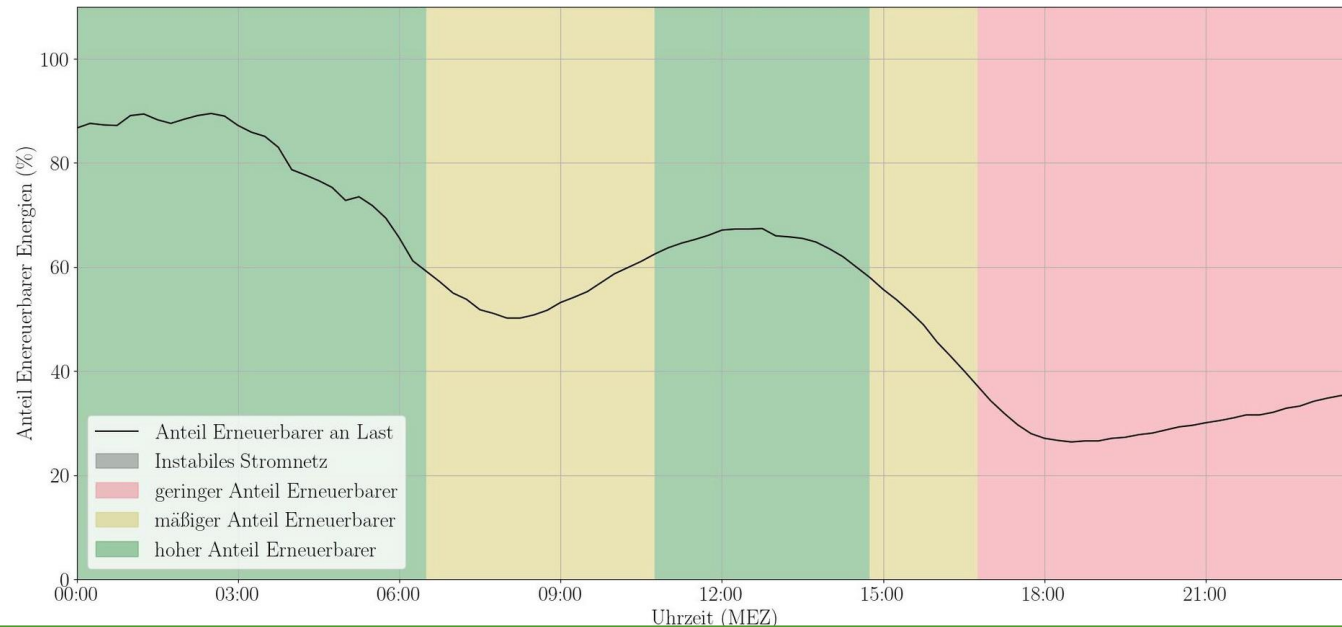
```
submit job.py -project important_research -stop_light green -max_wait 24h
```

- ✓ Testing: successful
- 🕒 Deployment: ongoing

- Based on HTCondor Docker images
- We are able to simulate :
 - Stop light policies
 - Energy mix
 - Shutdown of machines
 1. Unused
 2. Based on energy mix
- Replay old cluster history
- Shutdown unused machines
- Potential savings: O (kWh) / day



- Energy stop light
- Project tag
- Digital twin



```
submit job.py -project important_research -stop_light green -max_wait 24h
```

Thank you for your attention!

If you have any questions or suggestions, feel
free to contact us:
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