

Sustainability through Green Gates @Nextcloud





2. Easier maintenance

One tech stack
One deployment
Learn one system
One support channel
One maintenance window

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Open source & on premises

**Your hub
your choice**



Some visualization of the wide range of applications

Storage
solutions

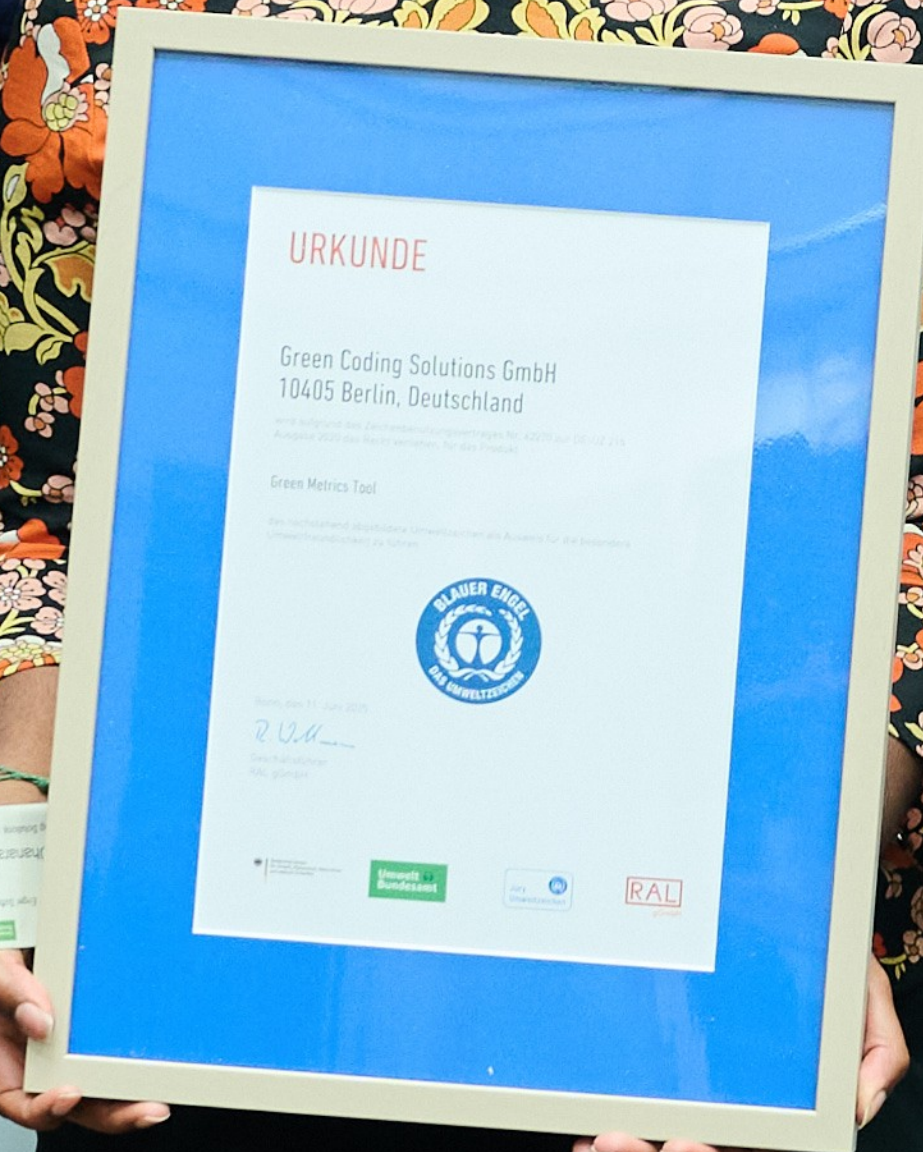
User
directories

Authentication

**Image of hub base + apps again (from
beginning of this section)**

Intro clip playing





Criteria

Blauer Engel certified software ...

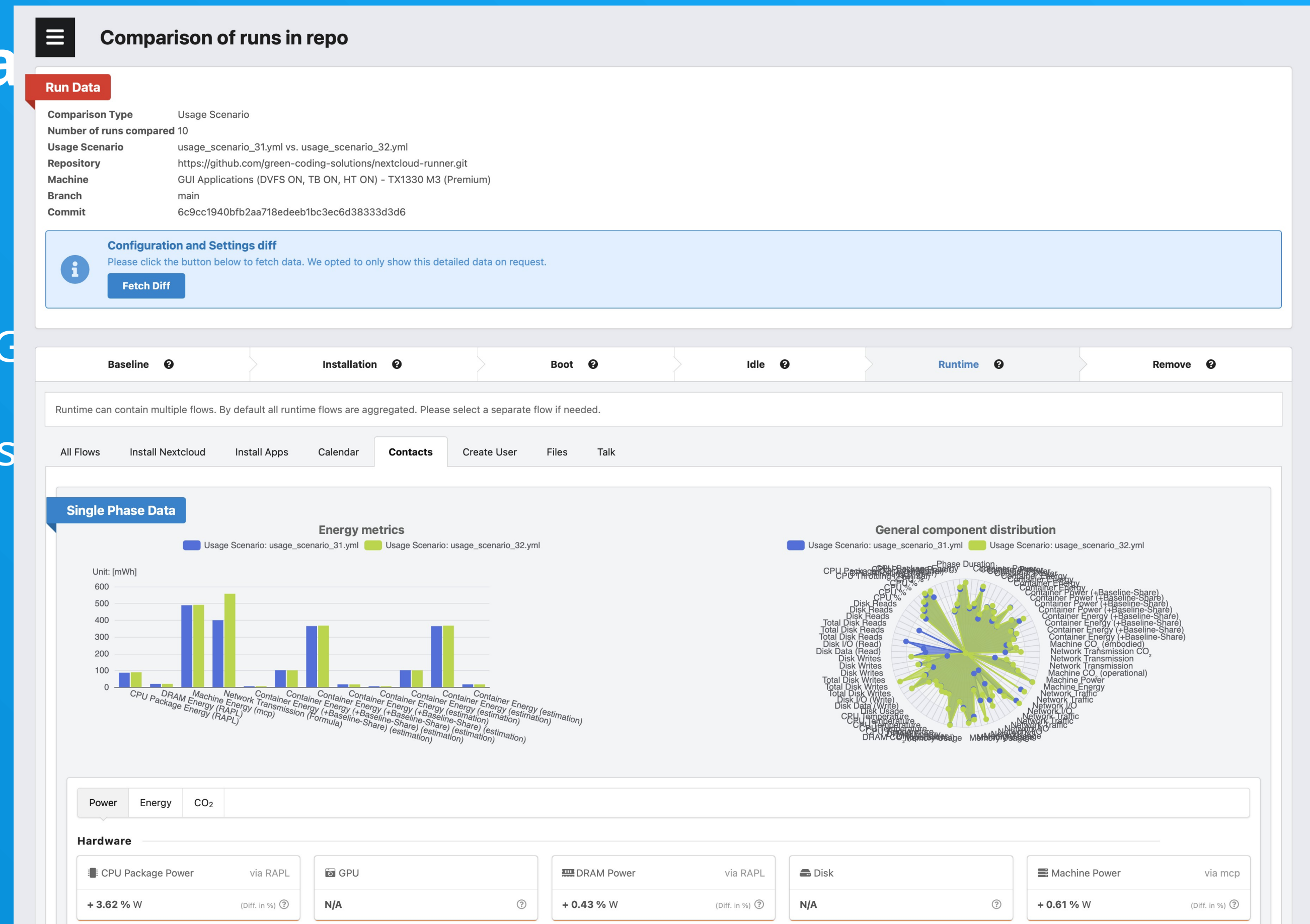
- Can be operated energy-efficiently
- is transparent in terms of energy usage
- Complies with sustainability for its technical aspects, like modular design and compatibility with older system
- offers openness of interfaces, data portability, and documentation

How do we measure resource cha

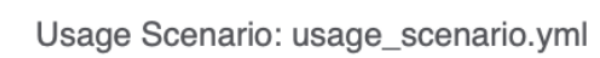
Built docker container from git sources

Used three containers (app, db, playwright) with G

Used the Standard apps from the Nextcloud app s



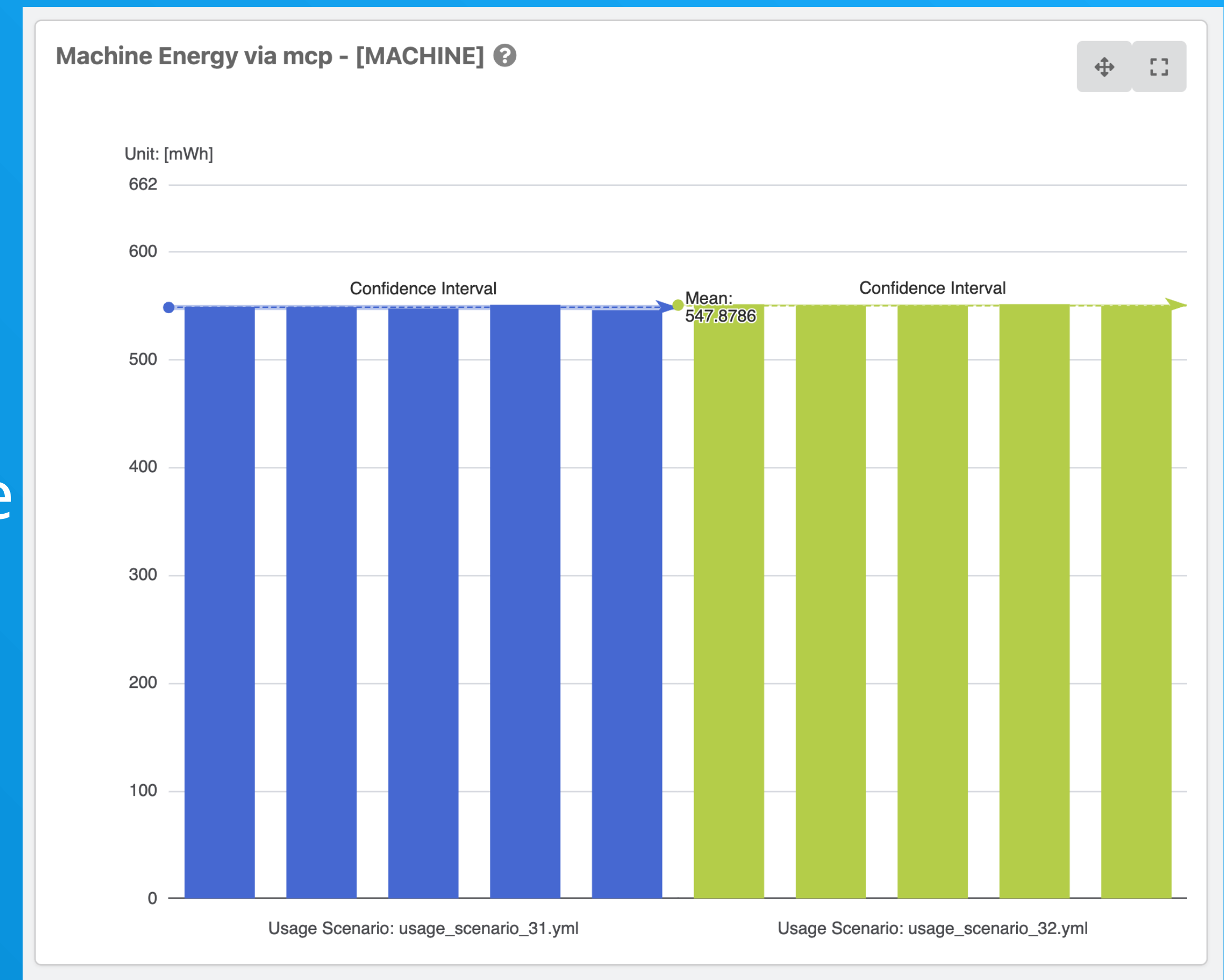
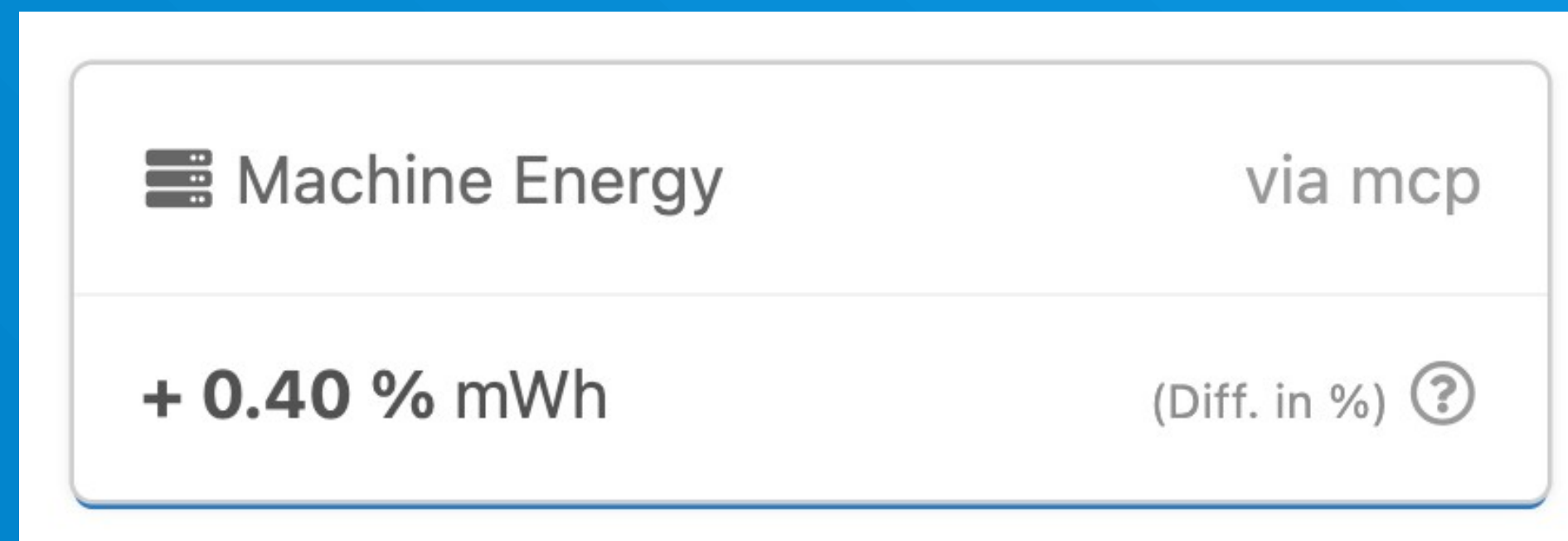
Last 30 days



Stable 31 vs Stable 32

Calendar

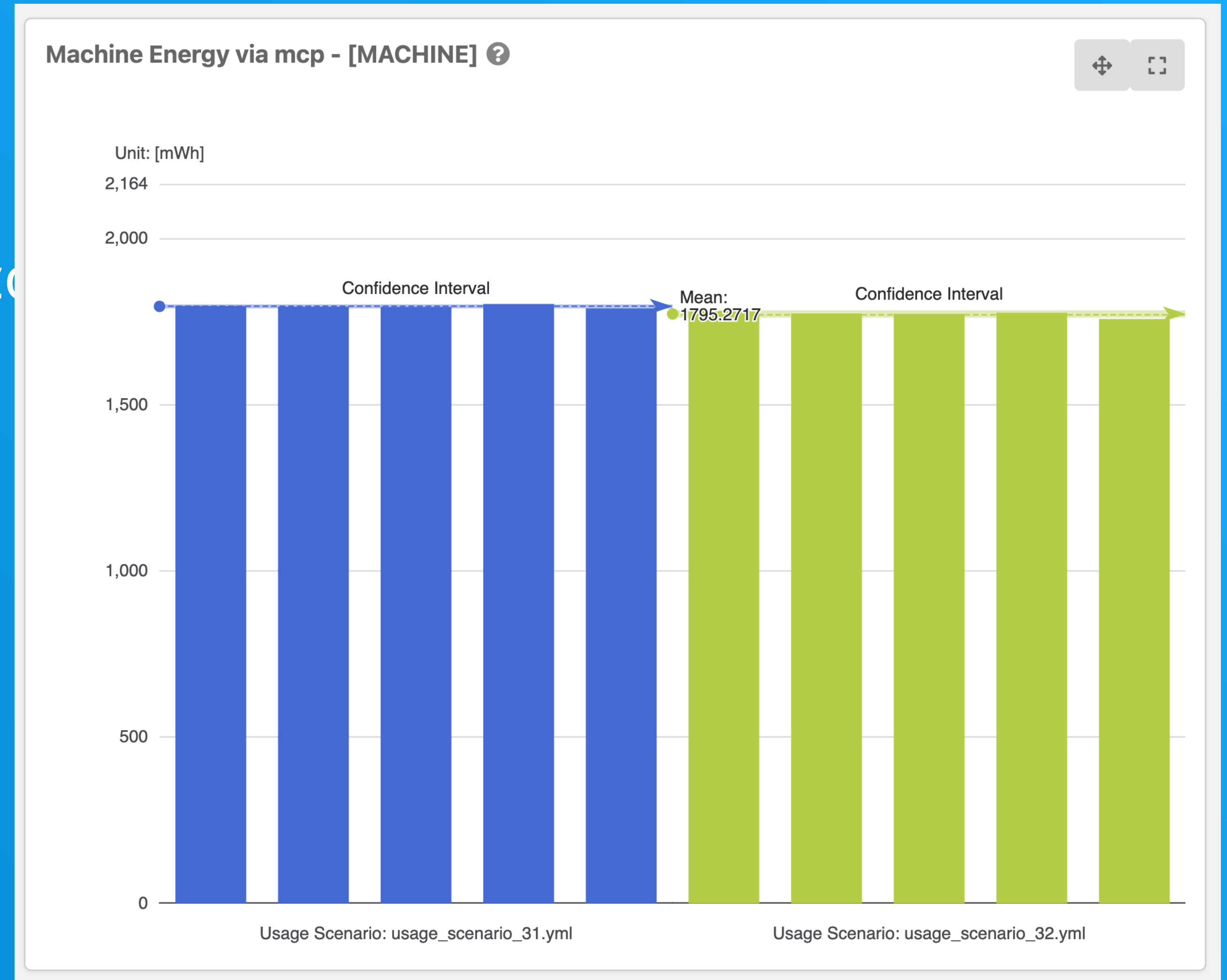
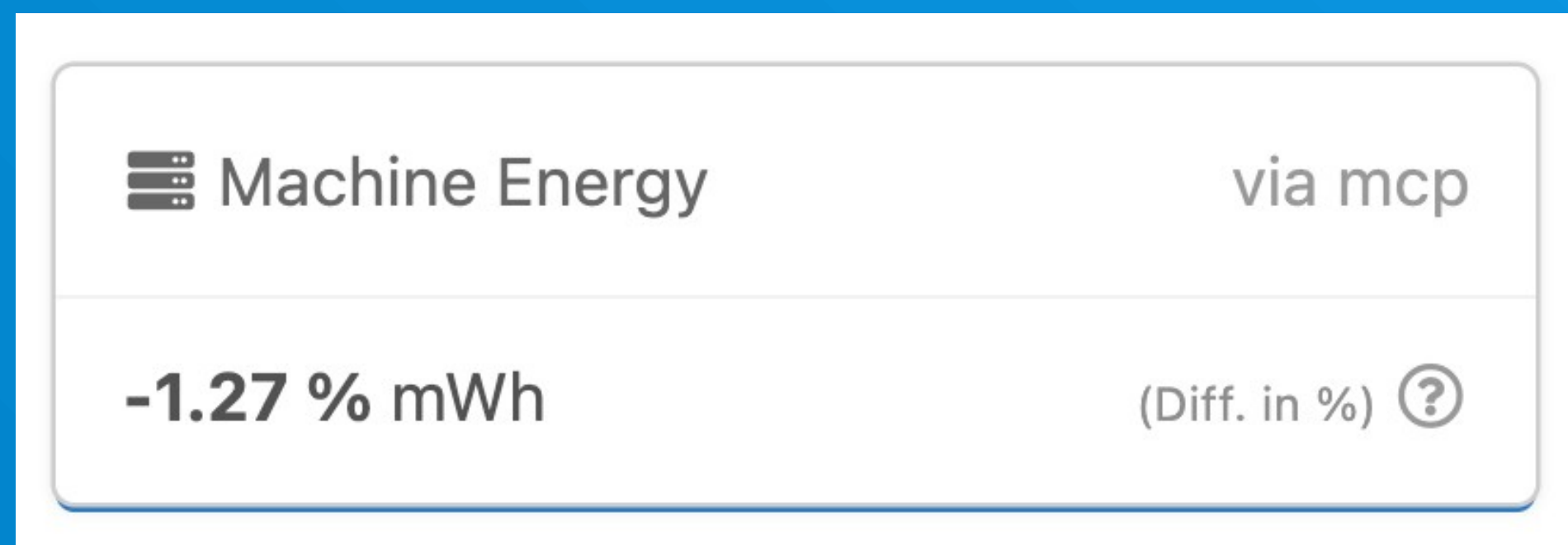
- Unchanges consumption
- + 0.4% (5 runs average)
- Within margin of error/ noise of the



Stable 31 vs Stable 32

Talk

- Even slightly reduced energy consumption
- - 1.27% (5 runs average)

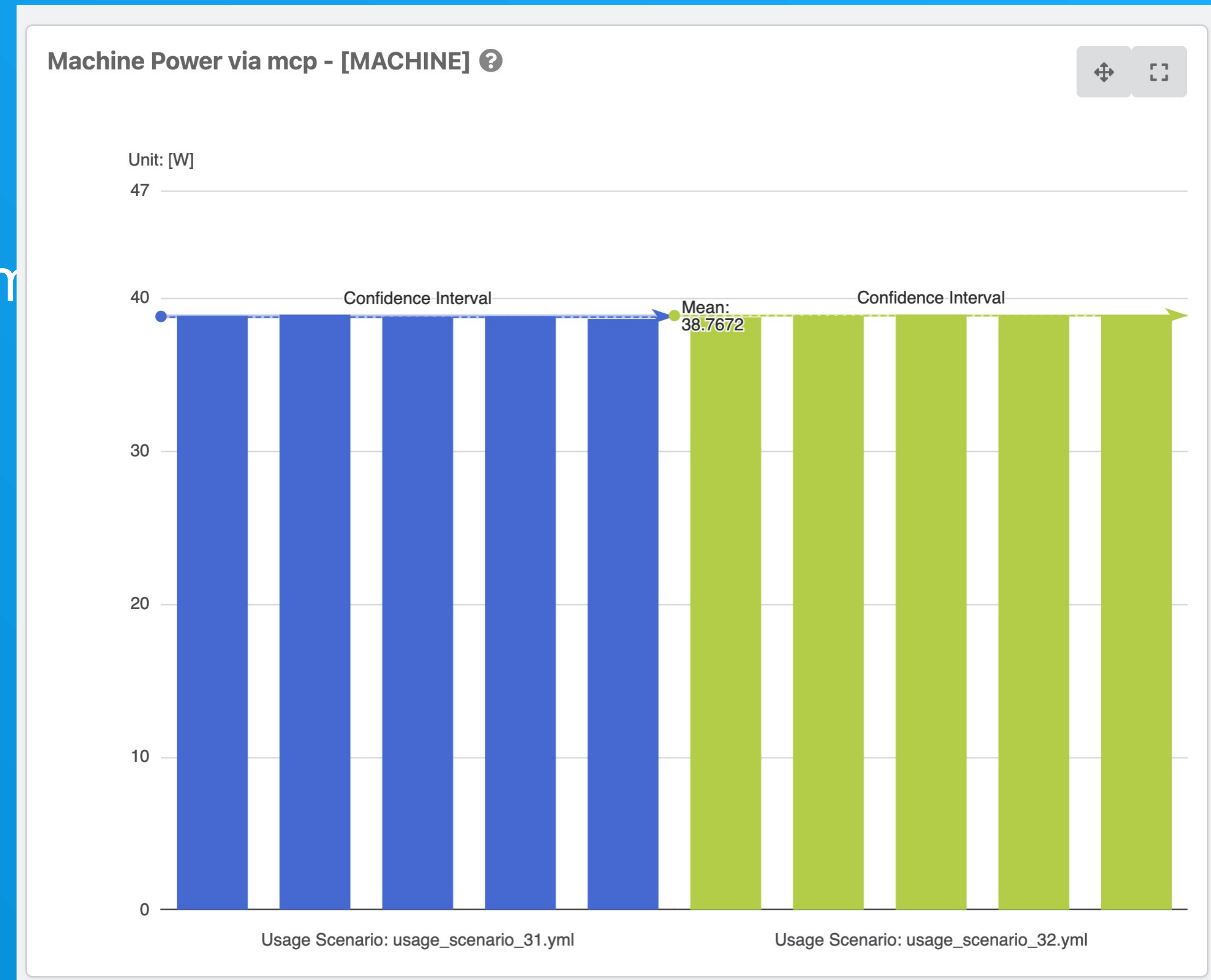


Stable 31 vs Stable 32

Files

Slight increase in energy consumption

+ 1.21% (5 runs average)



Machine Energy via mcp

+ 1.21 % mWh

(Diff. in %) ?

Machine Power via mcp

+ 0.15 % W

(Diff. in %) ?

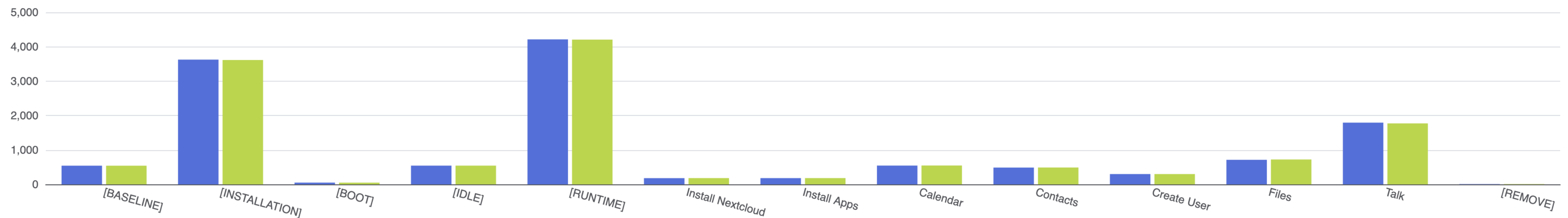
Overview of all scenarios for Talk

Total Phases Data

Total energy consumption

Machine Energy - usage_scenario_31.yml Machine Energy - usage_scenario_32.yml

Unit: [mWh]

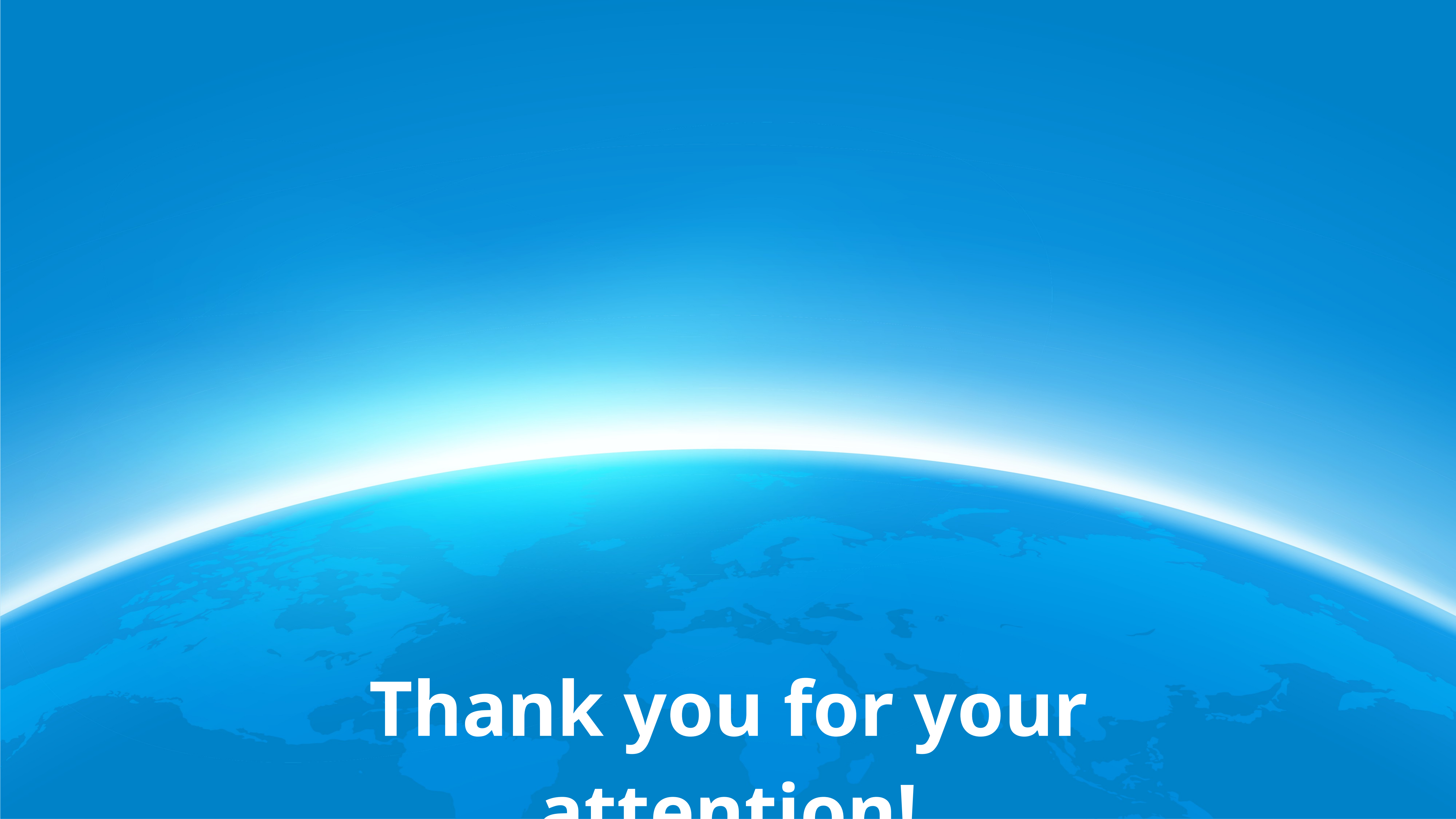


Take aways

- strong insights into core functionalities and their detailed energy consumption
- We are already in compliance with the strict requirement of Blauer Engel to keep energy consumption increase $<10\%$ with new software updates
- We can easily find targets to optimize our code in regard to energy consumption

How this makes Nextcloud better

- On every commit to main or pre merge the resource benchmark is run to check if the feature increases resource usage
- Management gets an Overview of increasing demand
- We can see where we can improve
- As server and representative apps are benchmarked a real world deployment is tested which is often not done as the apps are developed independently



**Thank you for your
attention!**