# FlexMeasures Technical Steering Committee

July 14th 2022

# Agenda

- Welcome & Short introduction to FlexMeasures
- Demo selected ongoing roadmap items
- Simulations?
- Q&A

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# FlexMeasures

FlexMeasures is the intelligent & developer-friendly EMS to support real-time energy flexibility apps, rapidly and scalable.

Go green in daily operations, stay in control.

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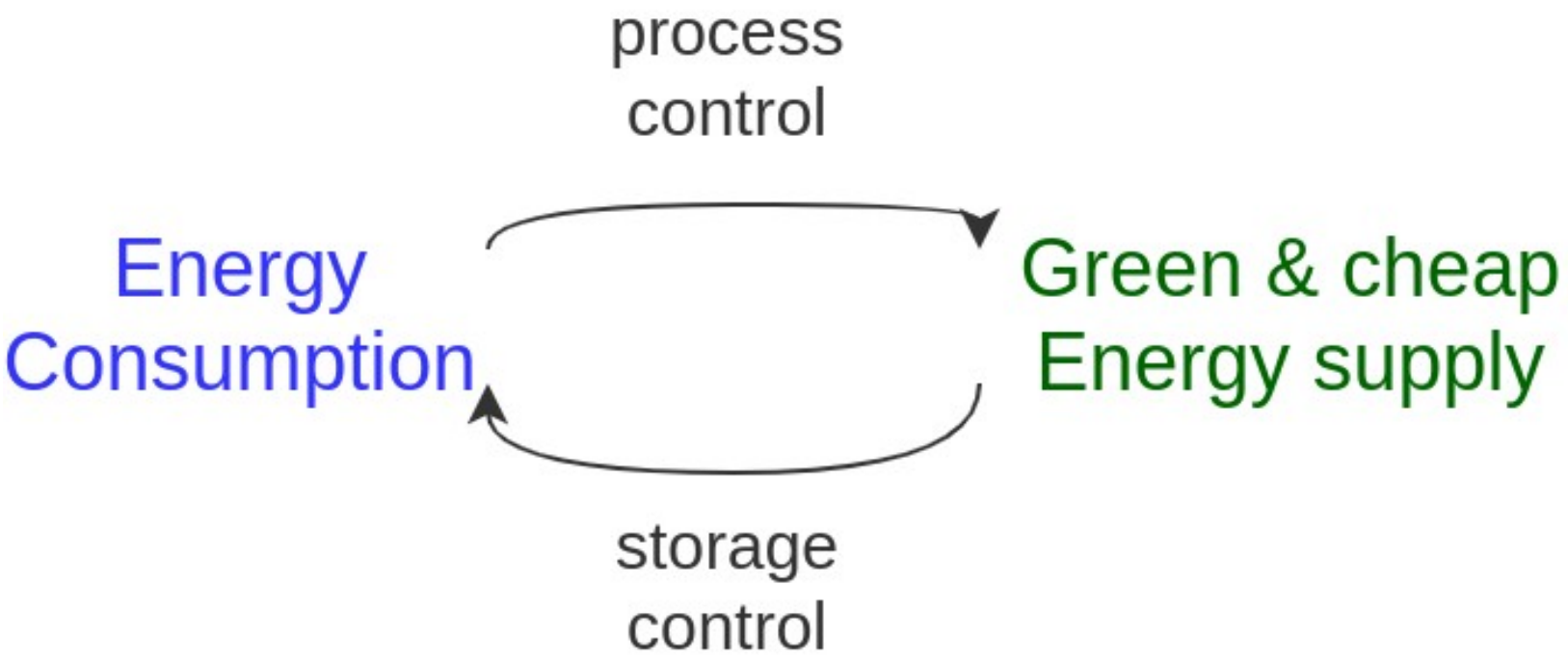
# Big picture

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# FlexMeasures - simple

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# Developer support

- I need help with integrating real-time data and continuously computing new data
- It’s hard to correctly model data with different sources, resolutions, horizons and even uncertainties
- I want to build new features quickly, not spend days solving basic problems

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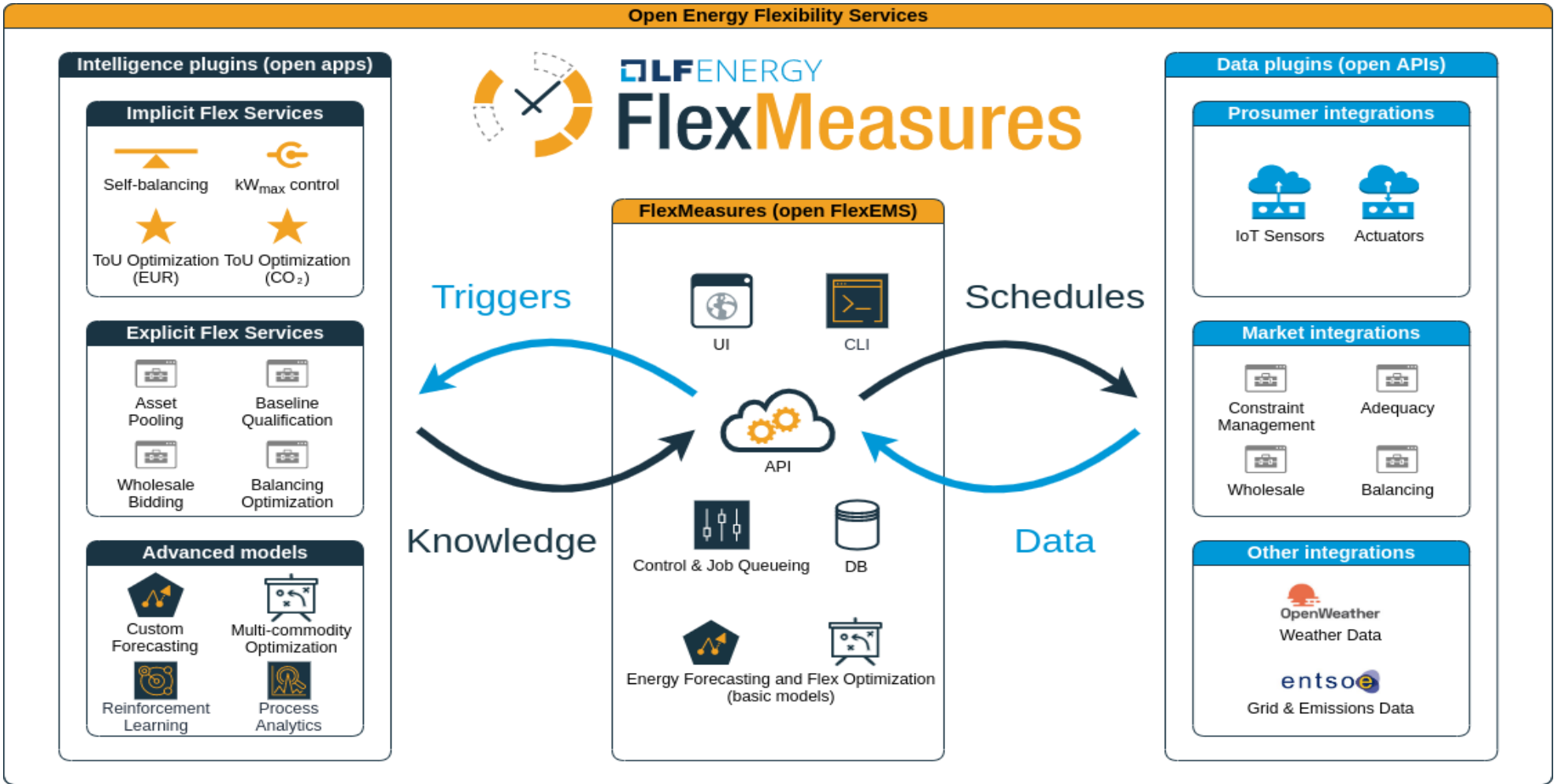
# FlexMeasures - integration

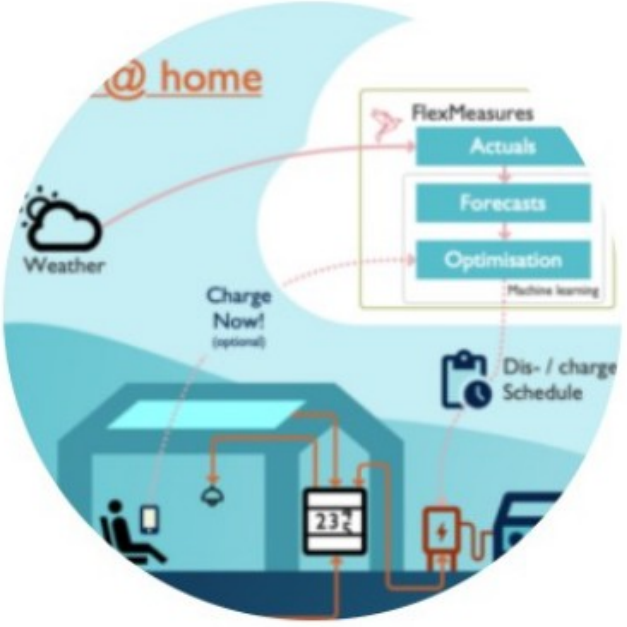


## Use case: SteerOn$CO_2$ at Rijnland Water Board

We help water board Rijnland to only run their centrifuges for sludge dehydration when the $CO_2$ footprint in the grid is low.

## Use case: SteerOnPrice & SteerOnSolar at V2G@Home

We optimize (dis)charging of Nissan Leaf cars with Wallbox chargers to save costs and use solar power, with zero user interaction needed.



# Roadmap (1/4): Docker compose

```
docker-compose build
```

```
docker-compose up
```

```
± docker ps
CONTAINER ID   IMAGE                COMMAND                  CREATED          STATUS                             PORTS                    NAMES
bfc0eed4850d   postgres             "docker-entrypoint.s…"   9 seconds ago    Up 7 seconds                       5432/tcp                 flexmeasures-dev-db-1
e99f6cd2b4c3   flexmeasures_server  "bash -c 'flexmeasur…"   50 minutes ago   Up 6 seconds (health: starting)    0.0.0.0:5000->5000/tcp   flexmeasures-server-1
e9e879189625   flexmeasures_worker  "flexmeasures jobs r…"   50 minutes ago   Up 5 seconds                       5000/tcp                 flexmeasures-worker-1
1d1e8f169231   redis                "docker-entrypoint.s…"   9 days ago       Up 7 seconds                       6379/tcp                 flexmeasures-queue-db-1
c9985de27f68   postgres             "docker-entrypoint.s…"   9 days ago       Up 7 seconds                       5432/tcp                 flexmeasures-test-db-1
```

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# Tutorial

```
# setup an account with a user, a battery (Id 2) and a market (Id 3)
$ flexmeasures add toy-account --kind battery
# load prices to optimise the schedule against
$ flexmeasures add beliefs --sensor-id 3 --source toy-user prices-tomorrow.csv
# make the schedule
$ flexmeasures add schedule --sensor-id 2 --optimization-context-id 3 \
    --start ${TOMORROW}T07:00+01:00 --duration PT12H \
    --soc-at-start 50% --roundtrip-efficiency 90%
```

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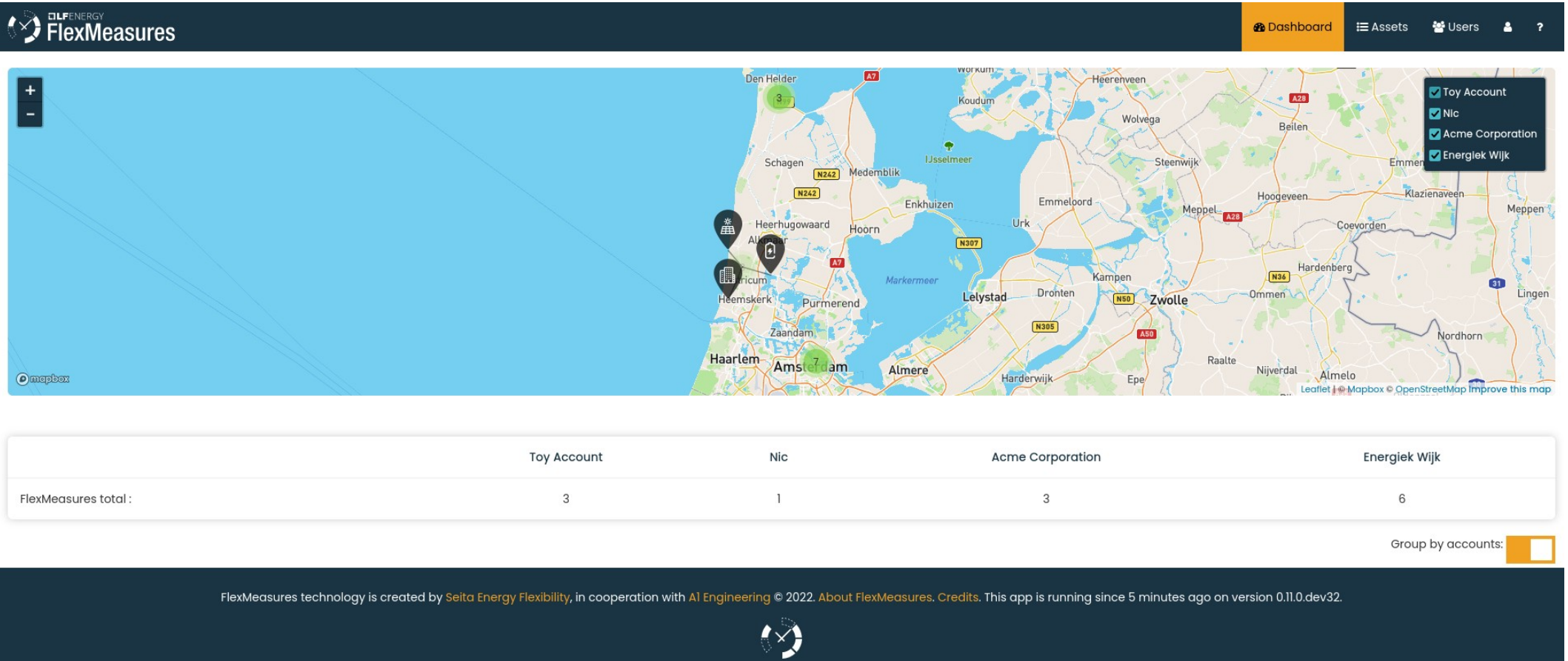
# Current roadmap (2/4): New asset page

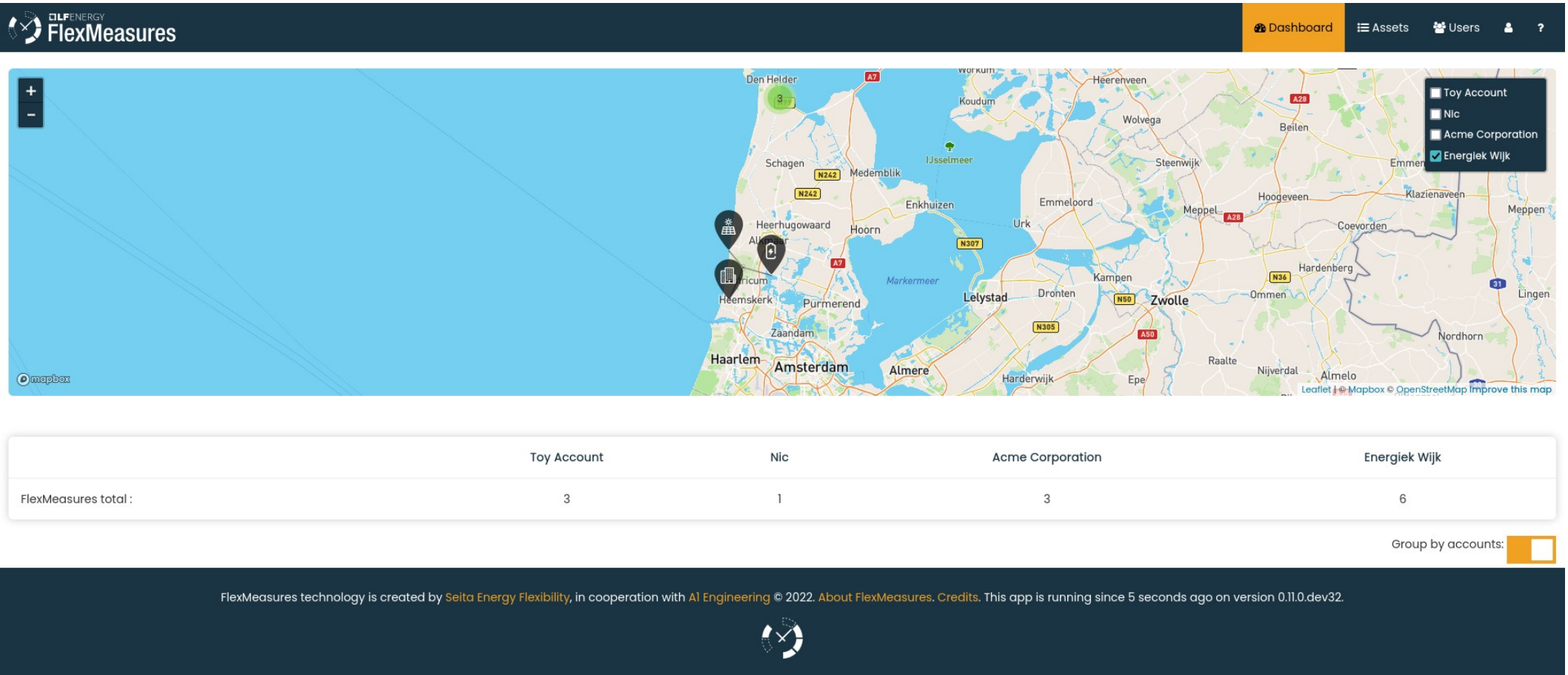
# Current roadmap (3/4): Account grouping




| | Toy Account | Nic | Acme Corporation | Energiek Wijk |
|---|---|---|---|---|
| FlexMeasures total : | 3 | 1 | 3 | 6 |

Group by accounts:

# Current roadmap (3/4): Account grouping

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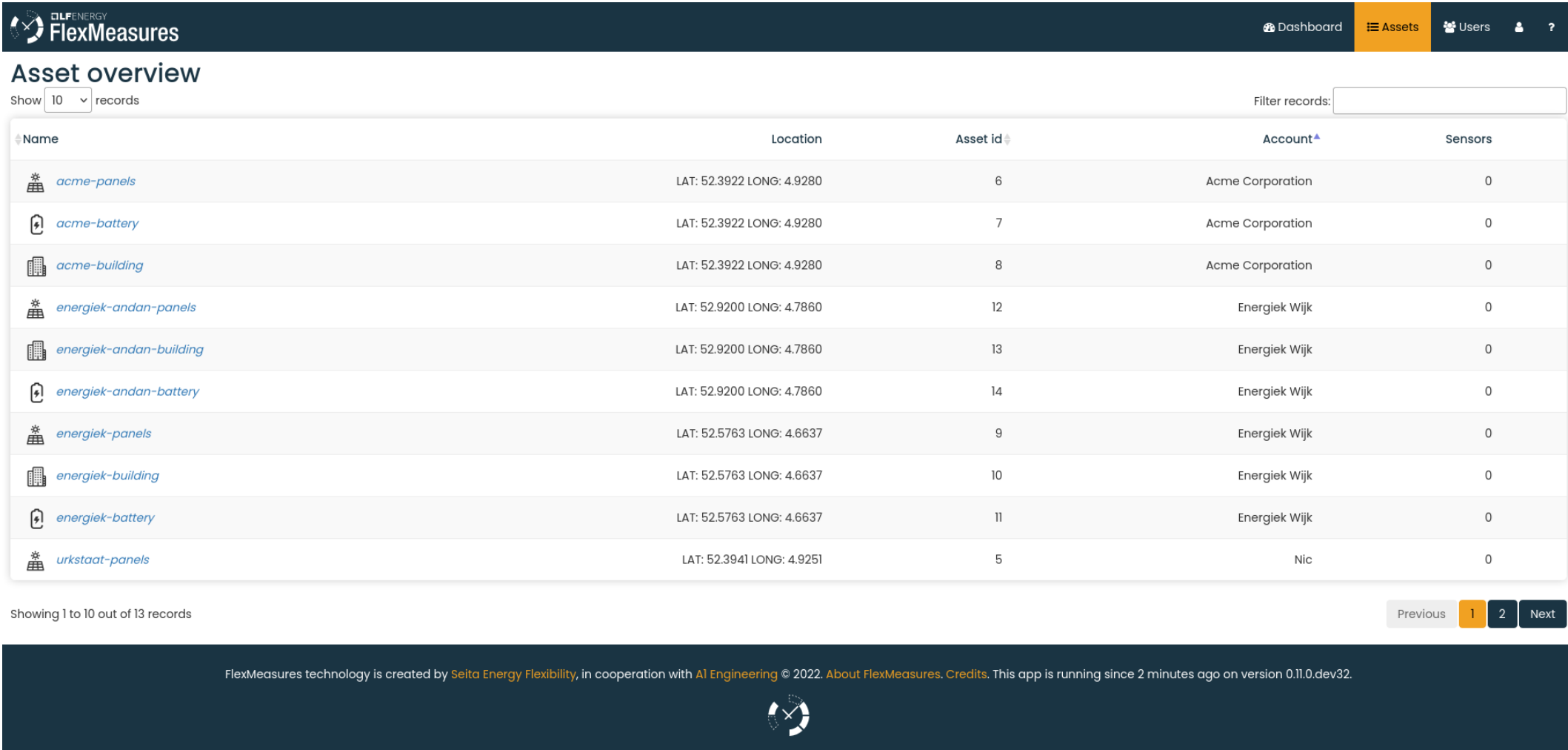
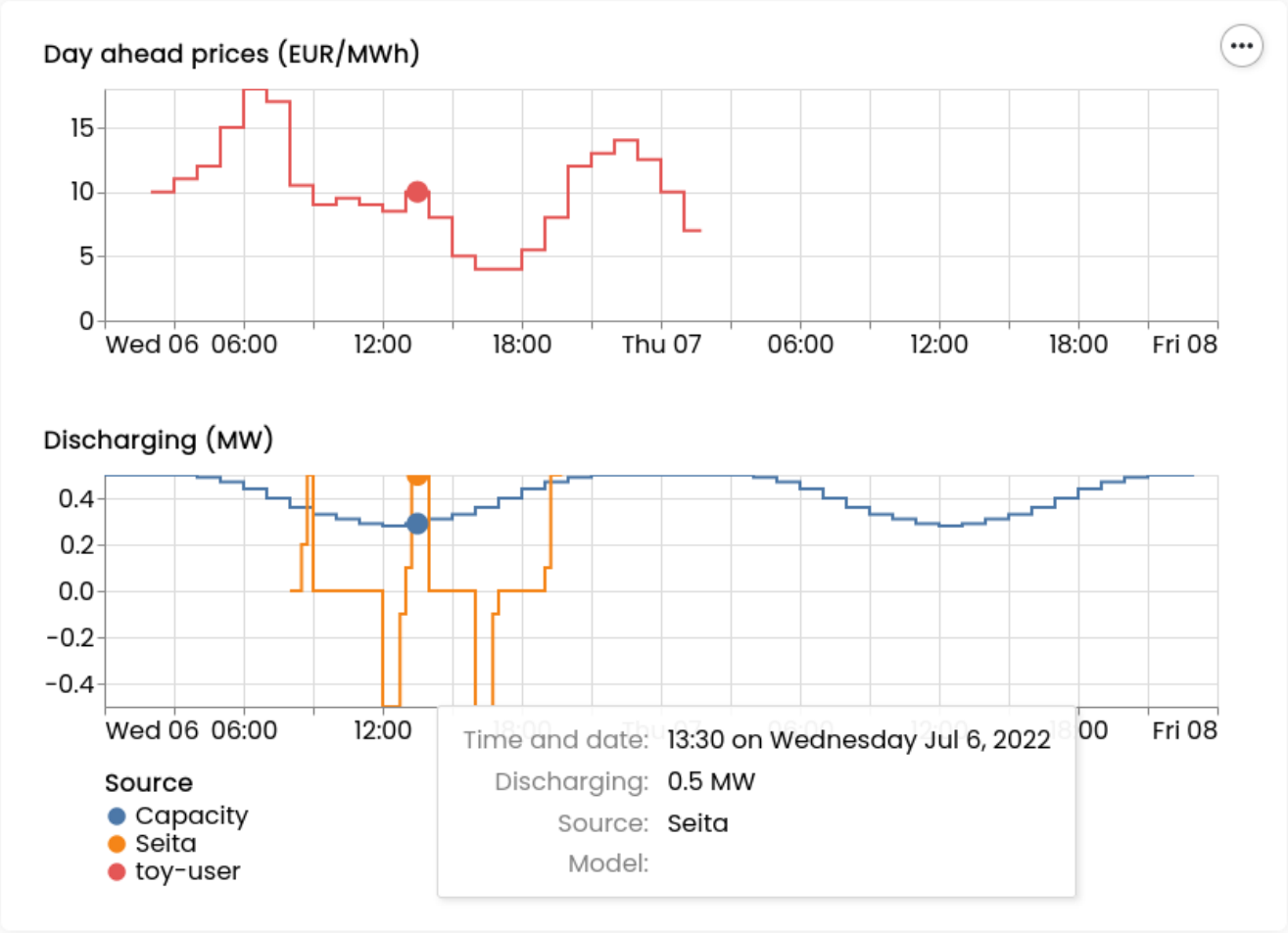
# Current roadmap (3/4): Account grouping



# Roadmap (4/4): Enhanced scheduling use case: Include solar supply and network constraint



# Q&A

- What are you working on?
- What is unclear?
- Features of simulations – E.g. determine business case for batteries. What is needed?

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# Resources – do get in touch!

- https://github.com/FlexMeasures/flexmeasures/
- https://www.flexmeasures.io
- https://lists.lfenergy.org/g/flexmeasures
- https://twitter.com/flexmeasures
- LF Energy Slack: #flexmeasures

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