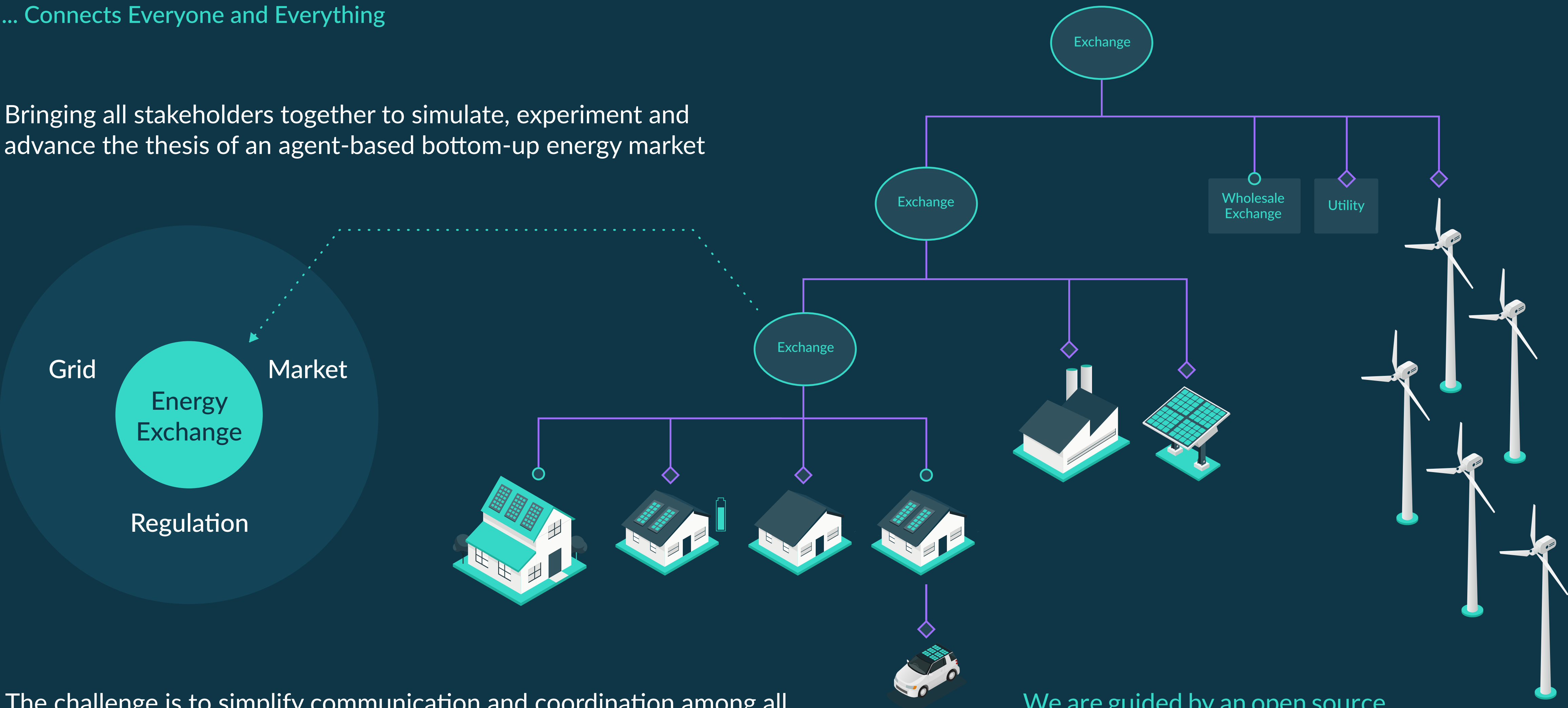


ENERGY SINGULARITY

... Connects Everyone and Everything

Bringing all stakeholders together to simulate, experiment and advance the thesis of an agent-based bottom-up energy market



The challenge is to simplify communication and coordination among all stakeholders while creating a secure but inclusive energy market design.

We are guided by an open source and collaborative ethos.

ENERGY EXCHANGES

as a Communication and Coordination Tool

www.d3a.io

Grid Singularity has developed an open source modular energy exchange engine

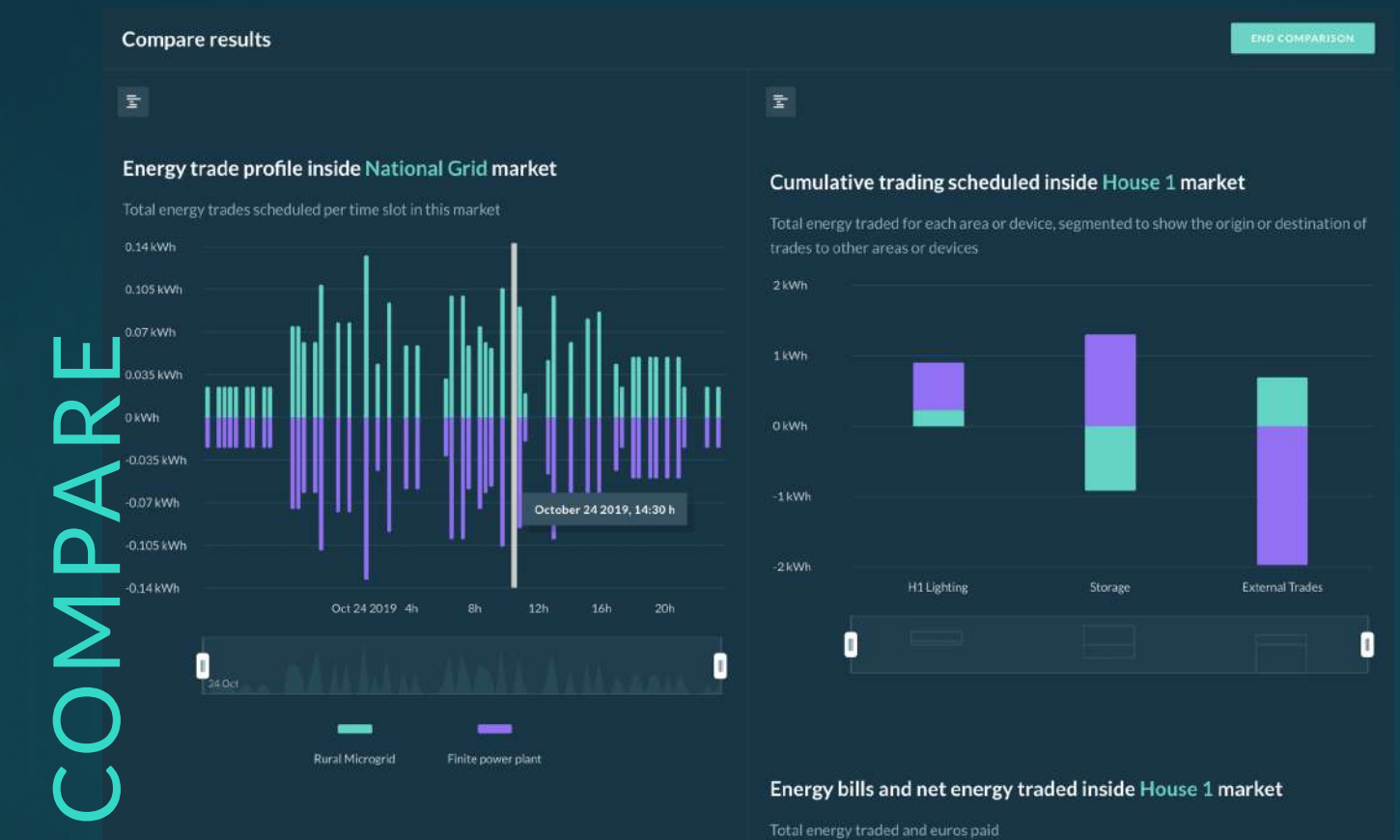
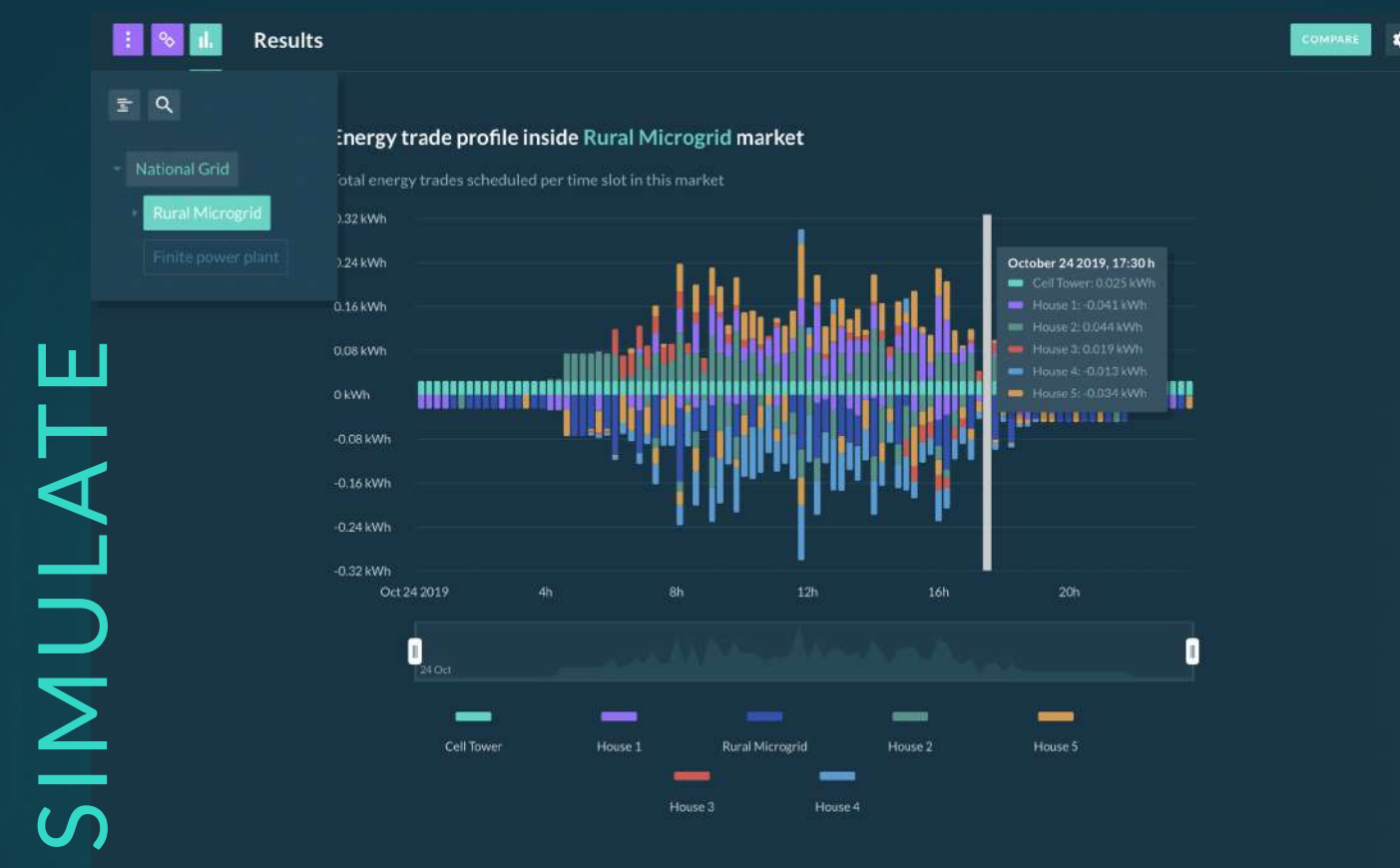
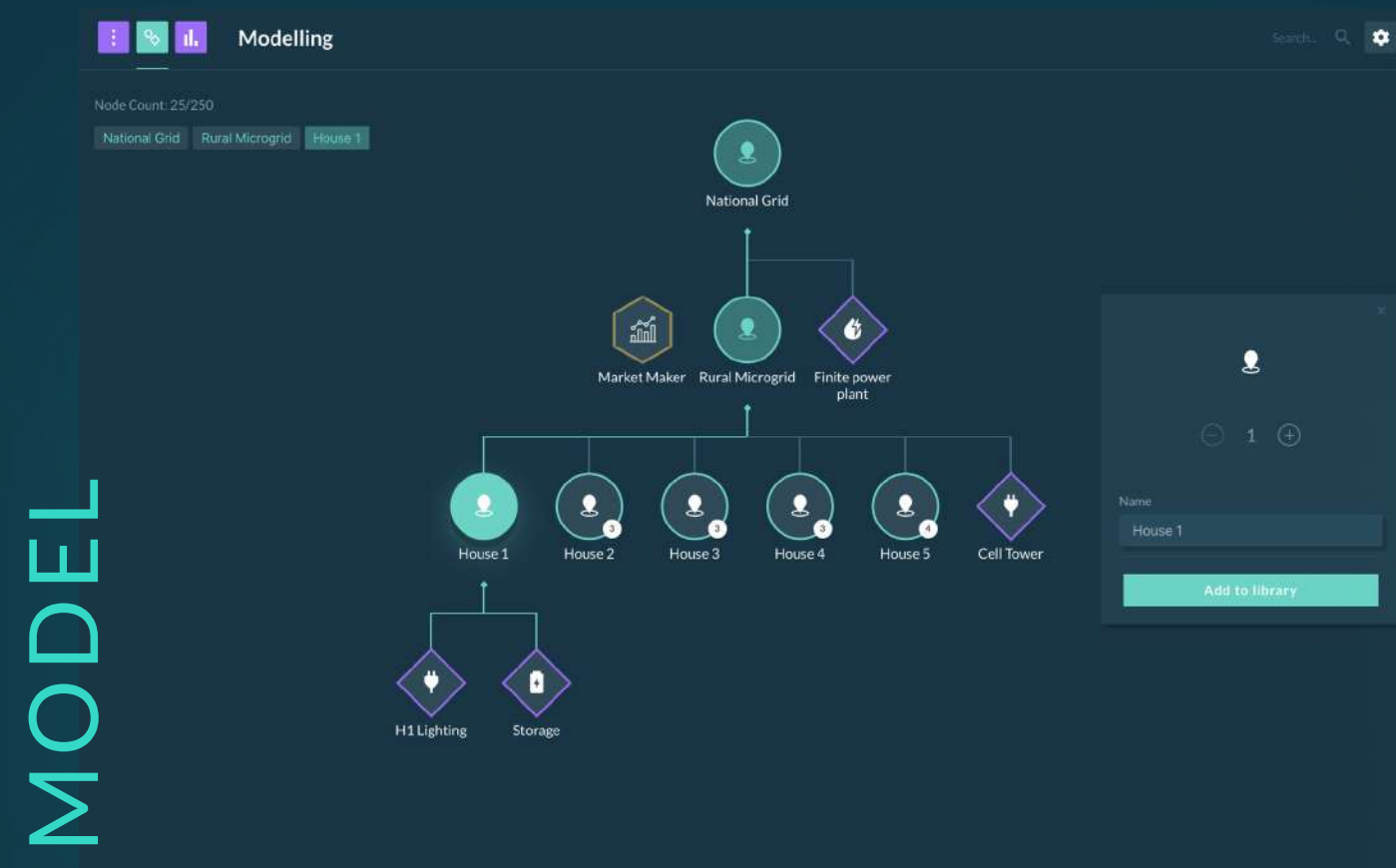
This engine enables users to model, simulate, and optimise the commercial interaction of digital twins of energy communities in a matter of hours. Energy market participants are represented through agents with preset trading strategies.

The simulation currently serves to validate a bottom-up market design and to evaluate the economic feasibility of local energy markets.

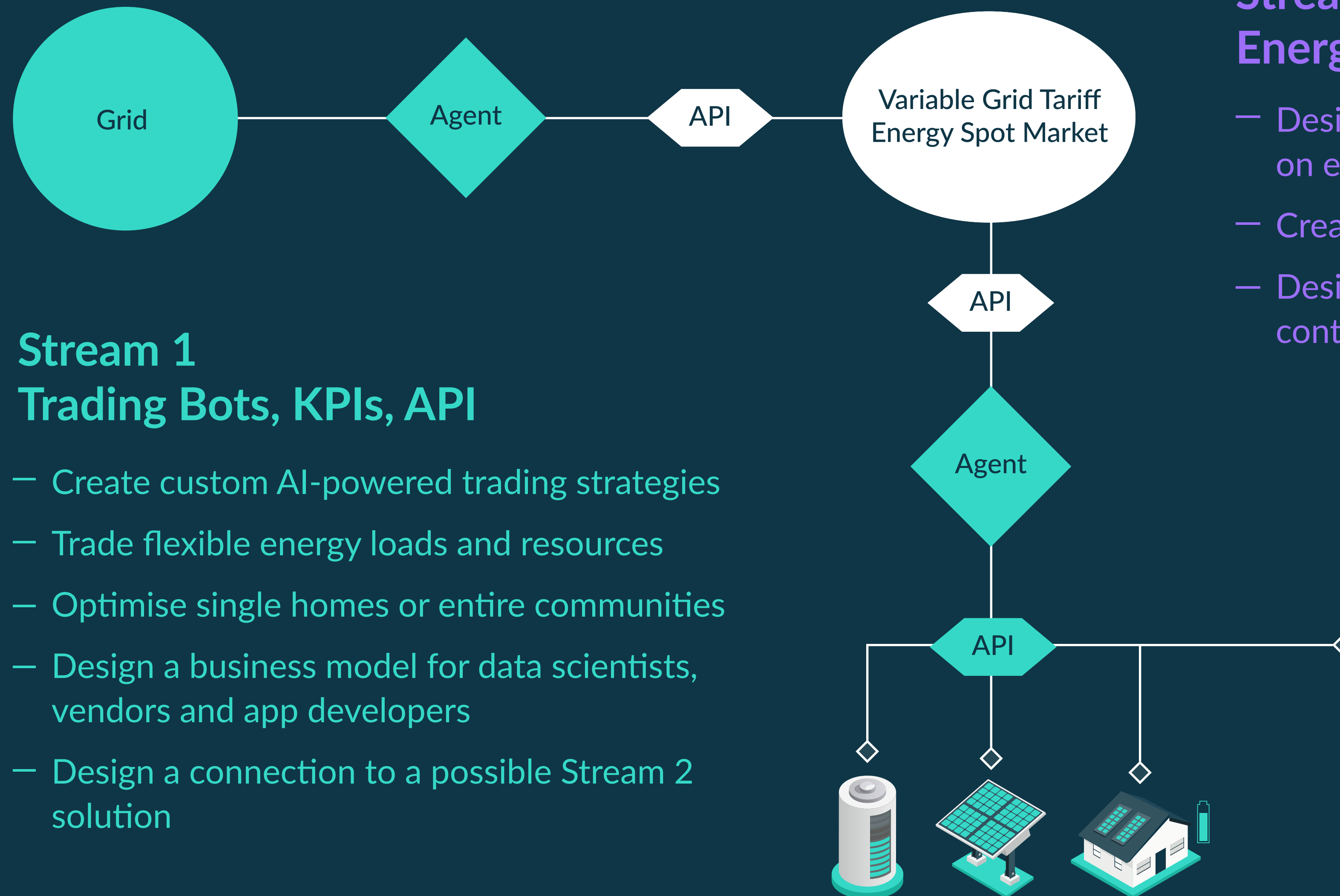
Next development steps require...

- Multiparty interaction via APIs and external agents
- Designing trading strategies and methods to improve KPIs
- Creating new forms of customer interaction and interface
- Elaborating further requirements for a deployment scenario

... in order to deploy the exchange engine in the real world



THE CHALLENGE



Stream 1 Trading Bots, KPIs, API

- Create custom AI-powered trading strategies
- Trade flexible energy loads and resources
- Optimise single homes or entire communities
- Design a business model for data scientists, vendors and app developers
- Design a connection to a possible Stream 2 solution

Stream 2 Energy Singularity Experience

- Design new forms of communication based on energy flows
- Create a social network for trading energy
- Design an app enabling the user to take control of own energy



STREAM 1: TRADING BOTS, KPIS, API

Objective: Develop custom trading strategies enhanced with AI to reach preset KPIs

- Design agent strategies and optimise over simulation rounds to trade on behalf of different energy market participants: individual home/business, a local community and energy supplier
- Compete for bounties by reaching set KPIs monitored via live scoreboard
- Design and develop a business model for data scientist, vendors and app developers enabling an inclusive data marketplace

Information Available

- Energy demand and production forecasts
- Historical and active energy prices
- Energy market API to trade on behalf of an energy resource

Improve Key Performance Indicators

AREA	TEAM	ENERGY BILL	SELF-SUFFICIENCY	PEAK REDUCTION
Community	DSO	influence peak load via variable grid tariffs		
Community	Collaborative	150 €	70% (below target)	5%
House 1	Team 1	50 € (2nd)	40% (3rd)	10%
House 2	Team 2	55 € (3rd)	85% (1st)	3%
House 3	Team 3	35 € (1st)	65% (2nd)	7%

Recommended Team Composition

Teams of 6 including data scientist, ML and AI engineers, software developers and experts in energy economics

STREAM 2: ENERGY SINGULARITY EXPERIENCE

Objective: Develop a pro/consumer app for social interaction through energy trading

Imagine living in the energy singularity where an ever growing intelligence acts on your behalf and trades energy to benefit your preferences!

The energy flows will begin to represent YOU.

Recommended Team Composition

Teams of 6 including UX and app designers, data scientists, network, product and energy experts

If you had full control over your energy flows, which choices would you make?

Connect with your Community

Would you join or create community campaigns where energy flows could be used as a means of payment or contribution?

Level-up Memes & Benchmarks

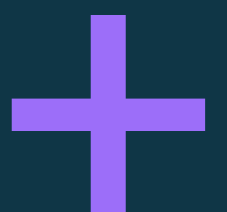
Would you help others or seek advice on how to save money or increase return on assets?

Family, Friends, Green, Local or just Cheap?

Would you choose the cheapest energy source or prefer a specific source type or only one from family and friends?

Changing Consumer Behaviour

How would you change your purchase behaviour if you knew in advance the energy cost or asset revenue? Would you ever (again) purchase a carbon-fueled car if you were assured that EVs generate revenues?



BOUNTIES & CONTRACTS

Stream 1 Trading Bots, KPIs, API

€10,000

distributed to the winning strategies
of individual challenge rounds

+ potential contract in a follow-up project
with one of the partners

Stream 2 Energy Singularity Experience

€10,000

to the winner of the
experience design challenge

+ potential contract to build the App

Further information will be made available to the selected teams in the preparation phase of the hackathon.

TIMELINE

DATE & NAME

DESCRIPTION

FEBR 5-6

Odyssey Connect

Challenge Streams Deep Dive
D3A Demo and AMA

FEBR 24

Application Close

—

END OF FEB

Team Selection

5 teams of 6 for Stream 1
4 teams of 6 for Stream 2

MARCH 3-10

Workshops

Hackathon preparation
D3A testing

APRIL 3-5

Hackathon

Start hacking with your agents
in live collaborative simulations**Apply on**www.odyssey.org**Contact us:**contact@gridsingularity.com