

October 24TH

Kyoto Group



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A PERFECT STORM NEEDS A PERFECT SOLUTION

Heatcube

Electrifying process heat for the industry
by also storing / balancing / load shifting



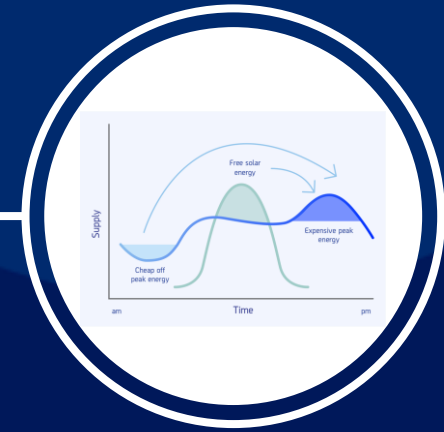
Vision
A world powered by Nature



Mission
*Empower industries with
renewable thermal energy*

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Decarbonization IMPOSSIBLE without energy storage



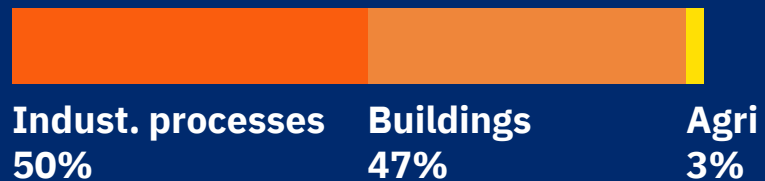
The challenge:
Unmatched supply
and demand

- 70% of new power capacity 2020-2030 is solar & wind
- 70% of total electricity from solar & wind by 2050

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Heat is half!

Global energy demand



89%
of heat produced by fossil and non-renewable fuel sources make up

40%
of global CO₂ emissions

Radical action ongoing to change CO₂ trajectory

Clean-tech investments need to triple. Now. And will be fueled by critical legislation.

Designing a new electricity market



- Renewable PPAs + storage, peak-shaving products, national objectives and support schemes for energy storage & demand response to balance the grid
- Era of “electricity only” is over

Accelerating clean technologies



- Energy storage 1 of 8 selected clean technologies given priority status and access to fast-track permissions, funding etc., to accelerate EU decarbonization

Incentivizing energy storage



- EU Member States obliged to set targets for energy storage & demand response and revise every second year

The electrification of the Society is ⏻!

Unprecedented radical regulatory actions ongoing, to change CO2 trajectory



- 74% of new power capacity installed in 2022 was solar and wind
 - less than 15% was fossil
- 19% of today 's energy system is electricity, within “few years” this will be 74%, we are in for a ride?
- In Europe, Spain is taking the lead and recently doubled the renewable energy target while also launching several new programs for/including storage
- Germany is considering slashing the electricity tax with 95% to boost electrification
- The new electricity market design for EU is progressing as planned in Brussels, including a significant boost to green PPAs, peak-shaving storage, demand response, flexibility markets

Heatcube 2.0

Key Metrics

- Charging capacity: 10, 20 or 30MW
- Storage capacity: 16 – 96 MWh
- Storage time: long duration (> 8 hours)
- Discharge capacity: up to 20 MW
- Discharge in form of steam
- Temperature range of steam: 170-415°C
- Lifetime 25 years
- RTE of more than 90%*
- Less than 1 minute from standby to charge, discharge or simultaneous charge and discharge

Footprint: ~ 170 sq.m - 310 sq.m

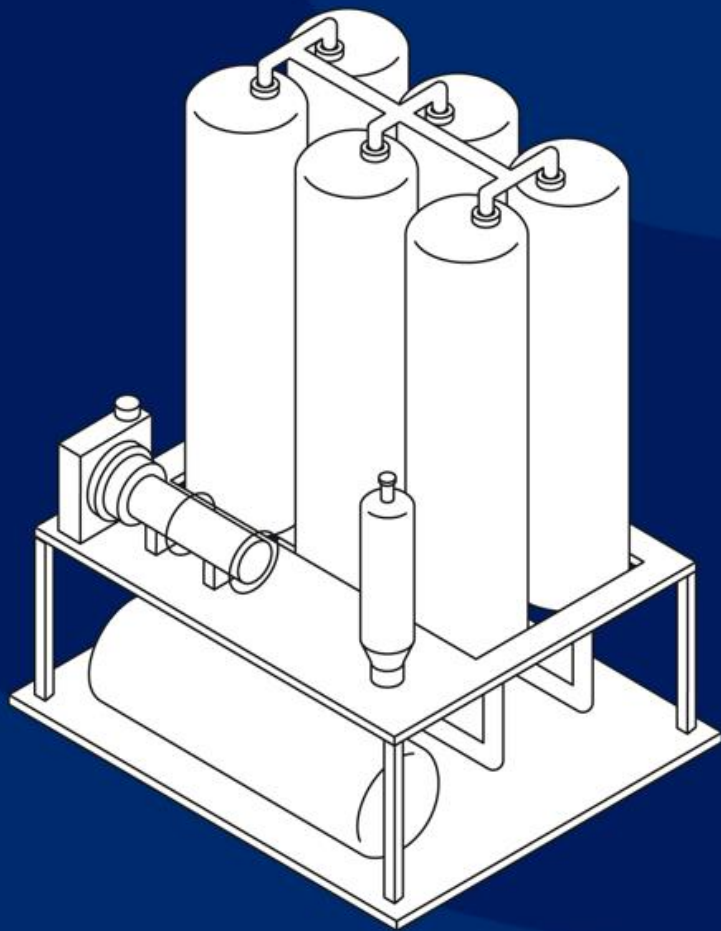
Height: ~ 18m

Weight: ~ 400 MT – 1,500 MT

** Based on size, total heat produced and the ambient conditions of the specific area.*



1 x 64 MWh Heatcube replacing
natural gas in the industry



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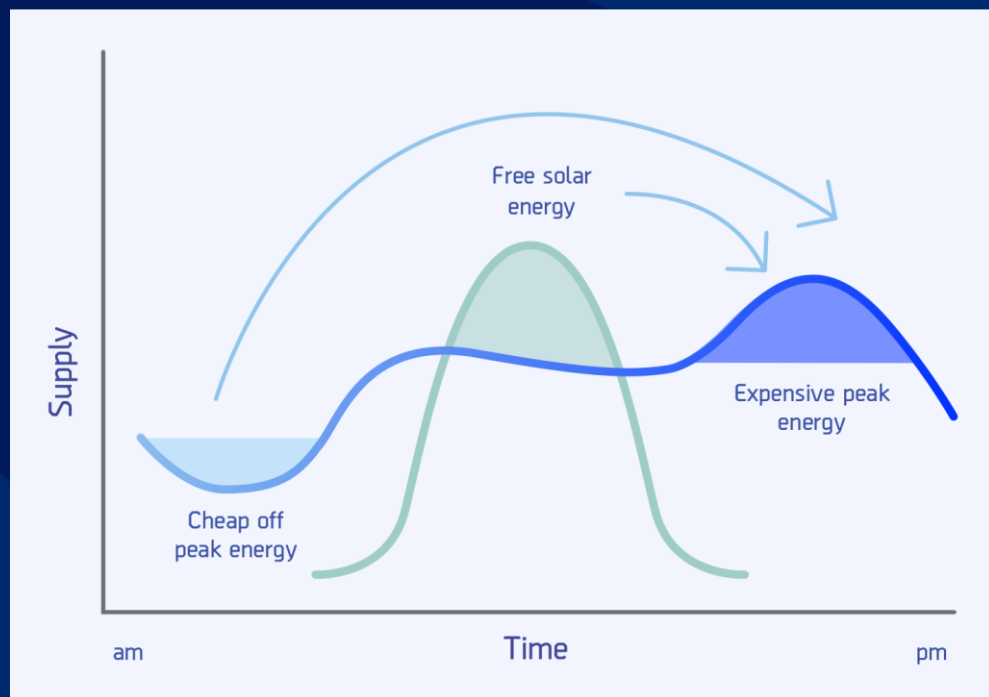
5,574 Teslas each
replacing a diesel car

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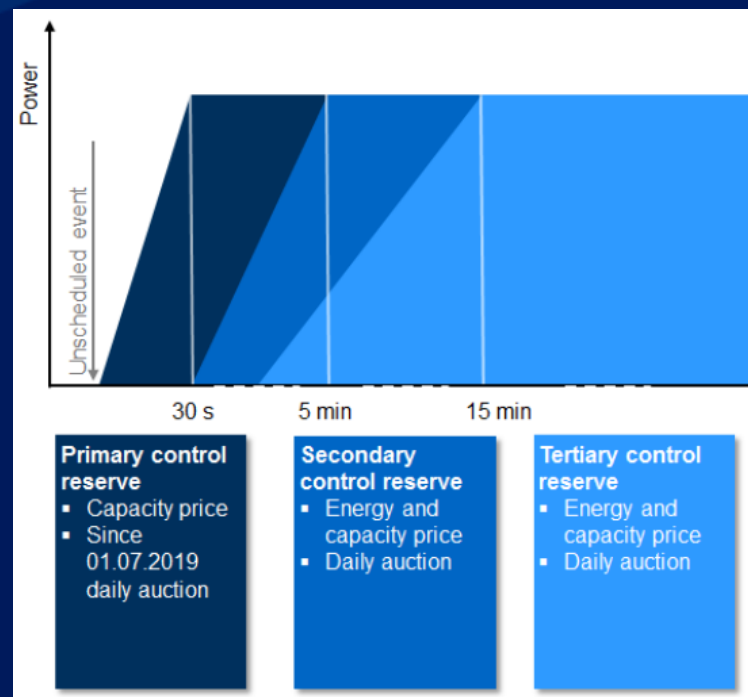
Economical Benefits of Heatcube

Kyoto's Heatcube enables industrial partners to benefit from off-peak electricity prices and from participating in the reserve market

Load Shifting






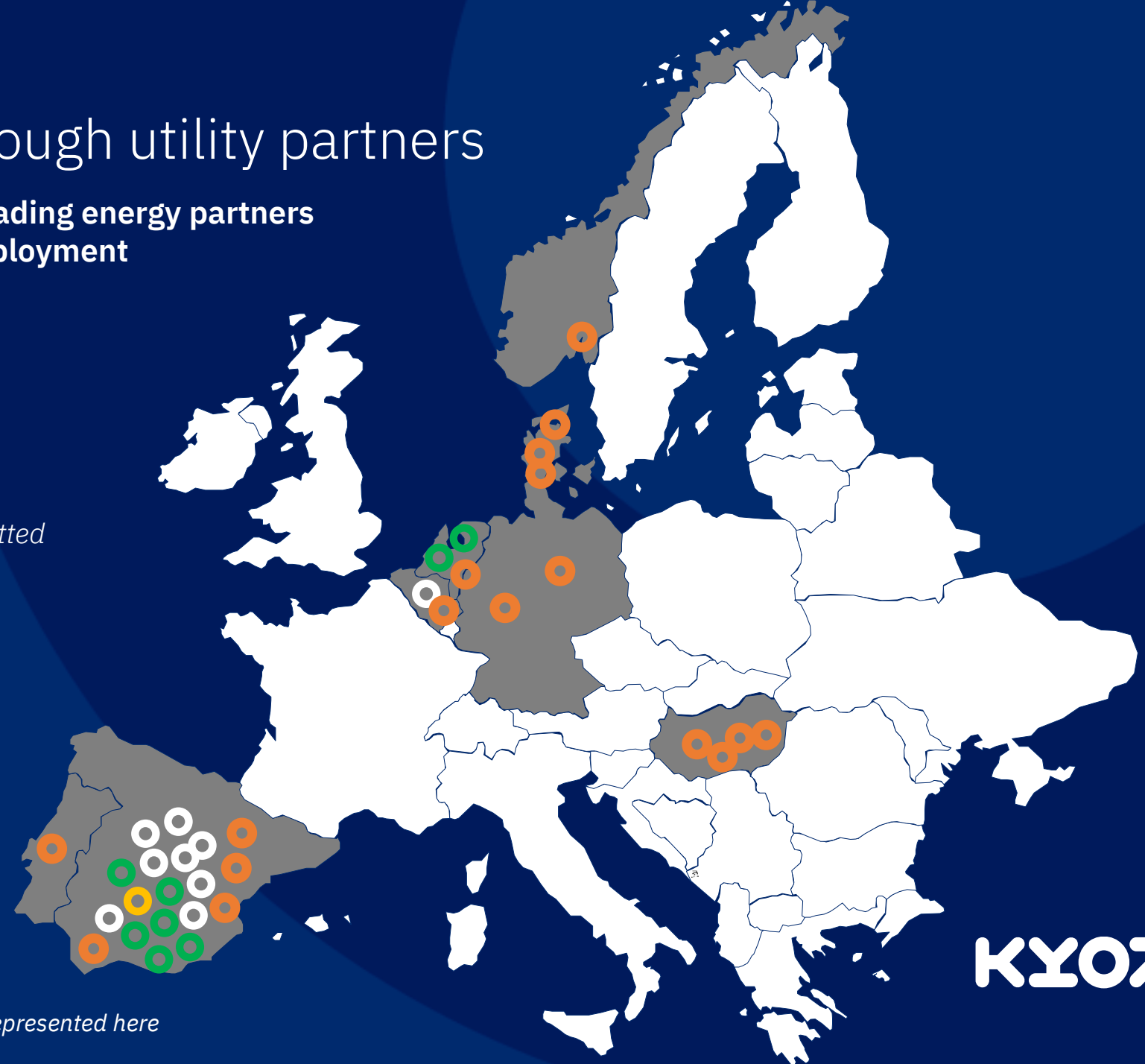
Reserve Market



Acceleration through utility partners

Partnerships with world leading energy partners to accelerate Heatcube deployment

-  Pipeline projects with offers submitted / prepared by utility partners
-  Pipeline projects with offers submitted by Kyoto
-  Pipeline projects under assessment



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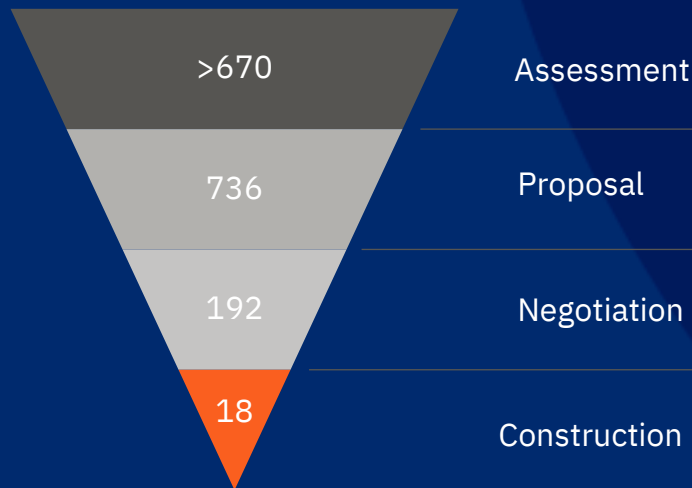
Note: not all projects from the pipeline are represented here
Locations are indicative

Total storage pipeline is growing and maturing

October 2022

Storage pipeline (MWh)

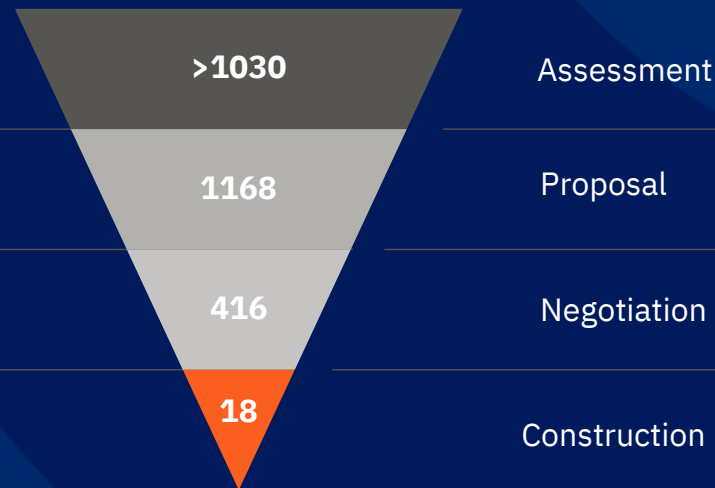
Total number of projects: 35
 Total volume: > 1 800 MWh (unweighted)
 > 500 MWh (weighted)



April 2023

Storage pipeline (MWh)

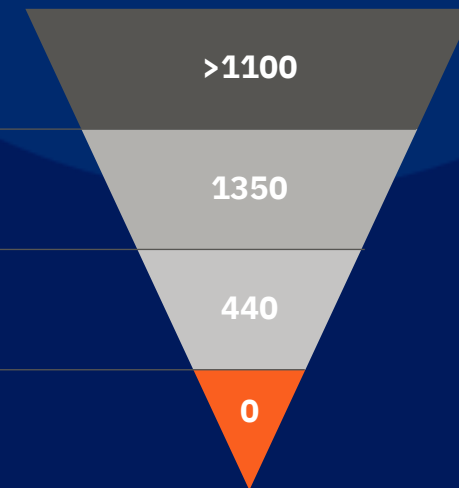
Total number of projects: 40
 Total volume: > 2 600 MWh (unweighted)
 > 1 000 MWh (weighted)



October 2023

Storage pipeline (MWh)

Total number of projects: 40
 Total volume: > 2 900 MWh (unweighted)
 > 1 050 MWh (weighted)



Assessment: Identified opportunities, dialogue initiated, not all potential storage sizes quantified (targeting phase, 10% probability) |
 Proposal: NDA signed, commercial offer sent to and under evaluation by customer (Evaluating phase, 50% probability) |
 Negotiation: LoI signed, commercial contract in negotiation (Negotiation phase, 70% probability) |
 Construction: Currently in installation (Installation phase, 90% probability)



Top 4 industries in the pipeline represent a total unweighted potential of more than EUR 185 million

- Pulp and Paper
- Chemical and Pharmaceutical
- Food
- Combined Heat and Power (CHP)

Note:
100% Heat-as-a-Product
Pipeline also contains projects outside of these industries

Kall Ingredients – Term Sheet signed



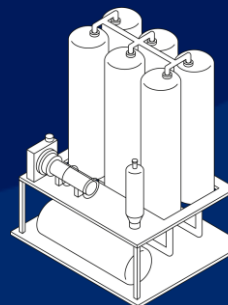
Strong partners set up to deliver HaaS to KALL Ingredients

- Strong consortium signs term sheet for Heat-as-a-Service (HaaS) with KALL Ingredients
- Annual supply of more than 30 GWh and CO2 reduction of up to 8,000 tons
- Heatcube will be acting on the balancing markets as well as for load shifting
- Signing of commercial contract expected by end of October 2023



Customer: KALL Ingredients Kft., Hungary

one of the newest corn processing plant in Europe
processes 530 000 tons of NON-GMO corn p.a.
produces liquid sugars, pharmaceutical and food grade alcohols
and animal feeds

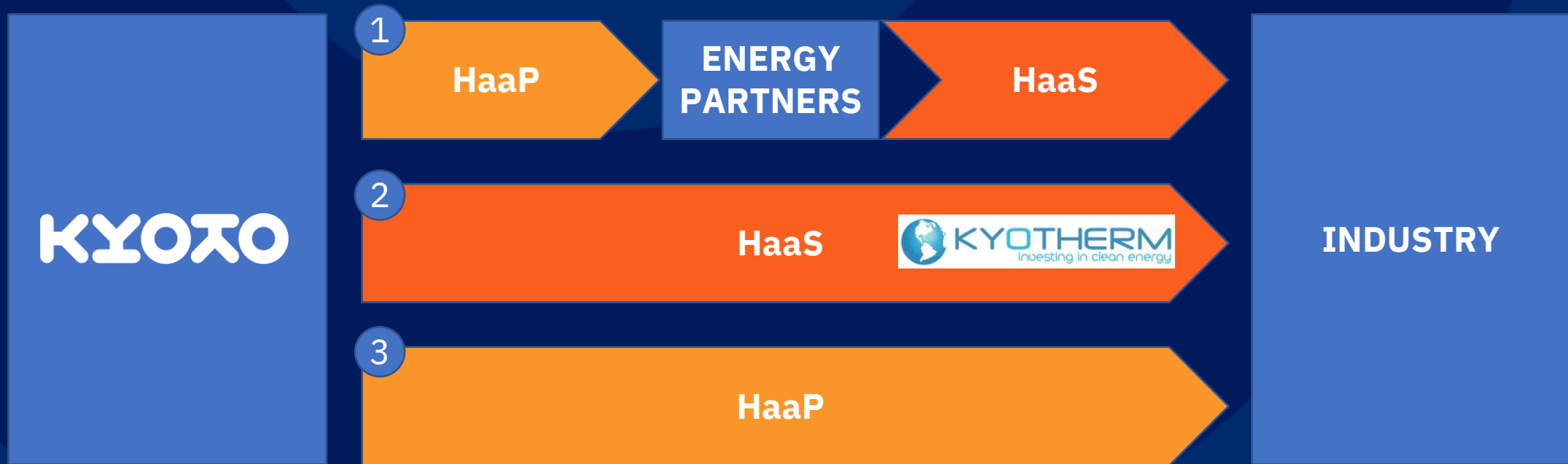


Heatcube
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Recap: Three business models for Kyoto

The established partnerships enable Kyoto offering Heatcube as a Service or as a Product to the industry



HaaP: Heat-as-a-Product
HaaS: Heat-as-a-Service

THANK YOU!



ΚΥΟΤΟ