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EU MISSION PLATFORM

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Empowering the future:
Smart Grids & Renewable Electricity Procurement

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24th of March 2026, NZC Spring School, Athens, Greece

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Agenda

1. Warm-up & polls
2. Introduction & inspiration
3. Main workshop: Co-design challenge in breakouts and group presentations
4. Debrief & reflection
5. Trikala – ENERGY4ALL project

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Introduction & inspiration

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28 April 2025: Lights out in Spain and Portugal

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28 April 2025: Lights out in Spain and Portugal

What happened?

Under investigation* - European Network of Transmission System Operators for Electricity (ENTSO-E)

Following the blackout incident in the Iberian Peninsula on 28 April 2025, ENTSO-E and its member Transmission System Operators (TSOs), the Agency for the Cooperation of Energy Regulators (ACER), National Regulatory Authorities (NRAs), and Regional Coordination Centres (RCCs) have set up a joint Expert Panel.

*in line with EU Regulation (EU) 2017/1485, known as the System Operation Guideline

Experts appointed by TSOs and RCCs:

TSO/RCC	Expert
Amprion (Germany)	Tilman Ringelband
EirGrid (Ireland)	Donna Kearney
Energinet (Denmark)	Bent Myllerup
PSE (Poland)	Rafal Kuczynski
Red Electrica (Spain)	David Alvira
REN (Portugal)	Filipe Ribeiro
RTE (France)	Laurent Rosseel
SEleNe CC (Greece)	Maria-Faidra Katsiantoni
Swissgrid (Switzerland)	Bastien Grand
Terna (Italy)	Giorgio Giannuzzi

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The impact of photovoltaic microinstallations on selected power quality parameters and the operation of generators in a low-voltage distribution network

Fig. 1. Effective voltage profile along one phase of the circuit to which six single-phase loads are connected, each with an active power of P = 2 kW

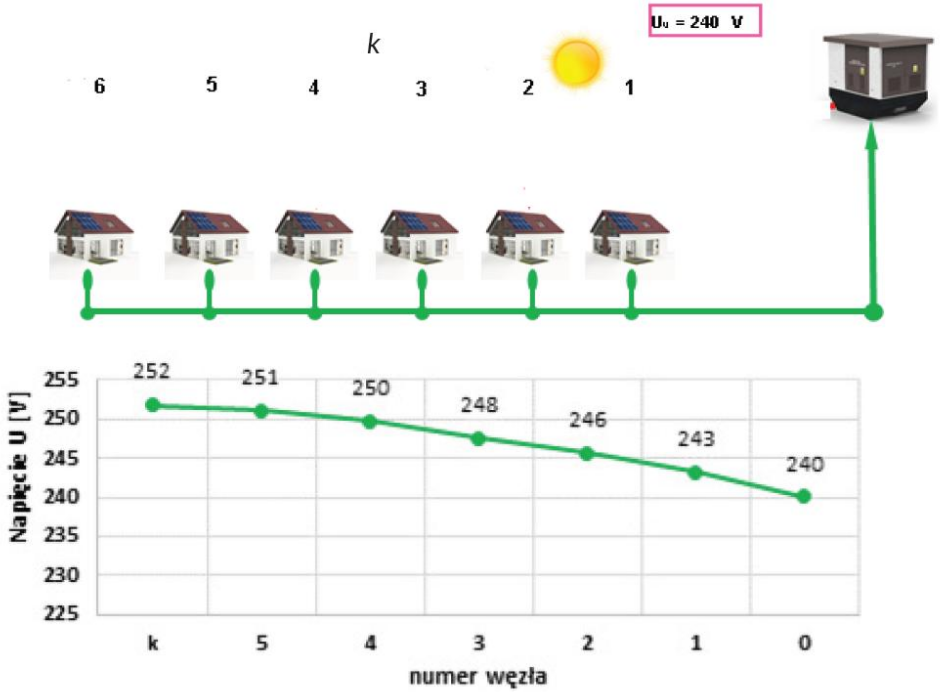

Fig. 2. Effective voltage profile along one phase of the circuit to which six single-phase microgeneration units are connected, each with an active power of P = 2 kW

Source: The journal "Energetyka" is edited by the team of the project "Development of Distributed Energy in Energy Clusters" (KlastER) (www.er.agh.edu.pl) as part of the Strategic Research and Development Programme "Social and Economic Development of Poland in the Conditions of Globalizing Markets" – GOSPOSTRATEG.

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The impact of photovoltaic microinstallations on selected power quality parameters and the operation of generators in a low-voltage distribution network

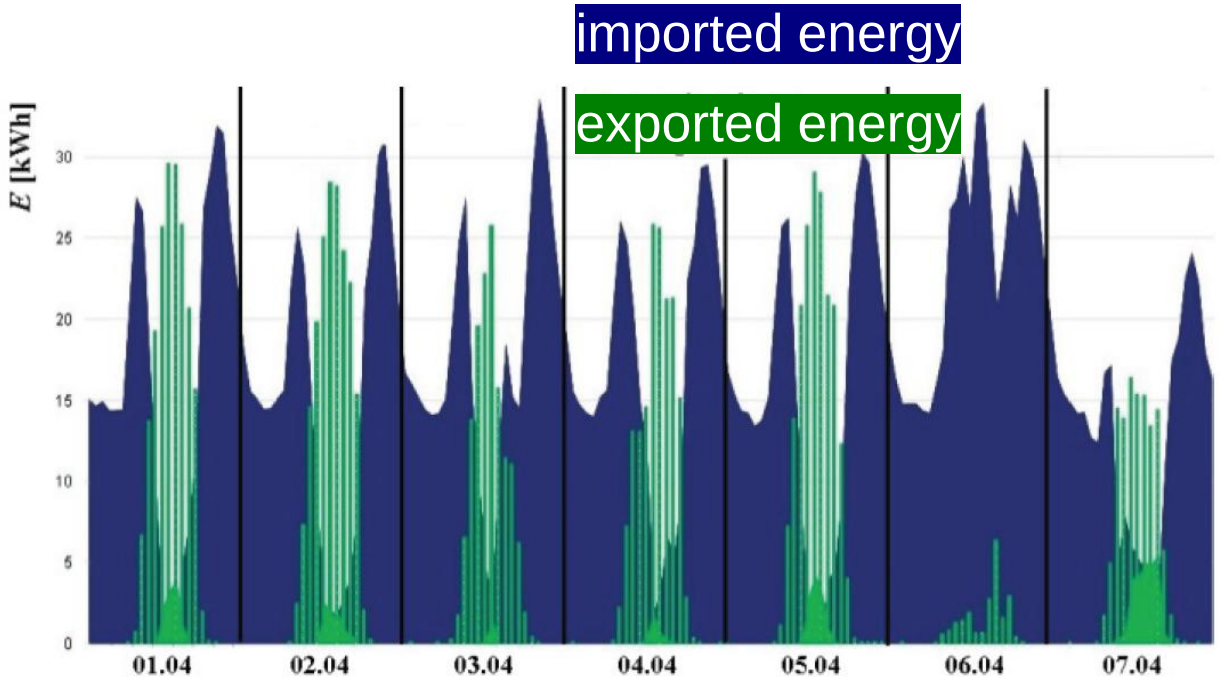

Fig. 13. Hourly active energy balance (E) of energy consumed and fed into the grid for a transformer station with a 48% share of single-phase micro-installations for the period of April 1–7, 2019.

Conclusions of the research (Polish case):

- replacing existing power infrastructure components
- constructing additional distribution network circuits and medium-/low-voltage transformer stations to shorten existing line segments
- installing conditioners that improve selected power quality parameters
- equipping consumers and prosumers with smart meters or power quality analysers to enable real-time monitoring of distribution network performance

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What is a smart grid & what can cities do?

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In your opinion, what role should cities play in bringing innovative solutions to the market? (Select up to 2)

What is a smart grid & what can cities do?

EU understanding:
Smart grids are electricity networks that can intelligently integrate the actions of all users connected to them – generators, consumers, and prosumers – to efficiently deliver sustainable, economic and secure electricity supplies.

Directive (EU) 2019/944 on common rules for the internal market for electricity, which refers to smart grids in the context of:

- Integration of **renewable energy sources**
- Use of **digital communication and control technologies**
- Demand-side response
- Support for **two-way energy flows** (consumers and prosumers)
- Enablement of **energy efficiency**, **demand-side management**, and **grid reliability**

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Innovation in procurement

Directive 2014/24/EU (Art.2 par.22) defines <u>innovation</u>:

"the implementation of a new or significantly improved **product**, **service** or **process**, including but not limited to production, building or construction processes, a new marketing method, or a new organizational method in business practices, workplace organization or external relations inter alia with the purpose of helping to solve societal challenges or to support the Europe 2020 strategy for smart, sustainable and inclusive growth";

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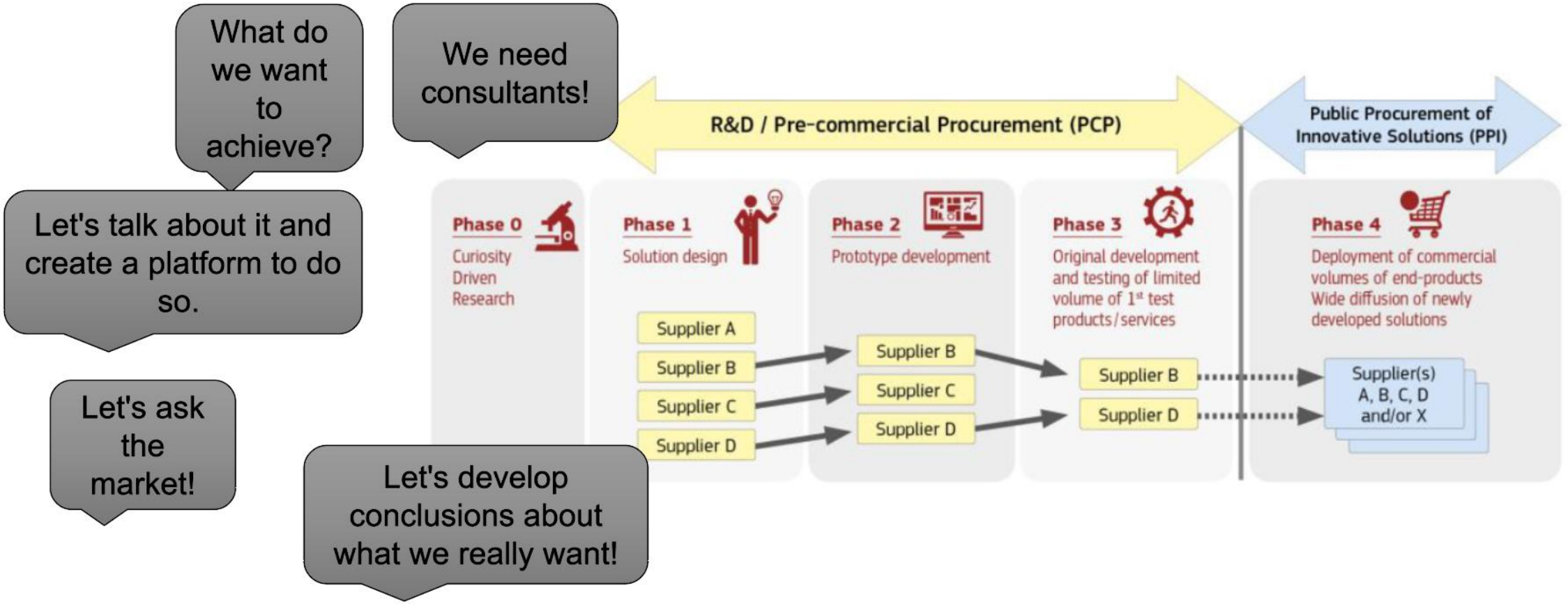
Pre-Commercial Procurement/ Public Procurement of Innovation solutions (PCP/PPI)



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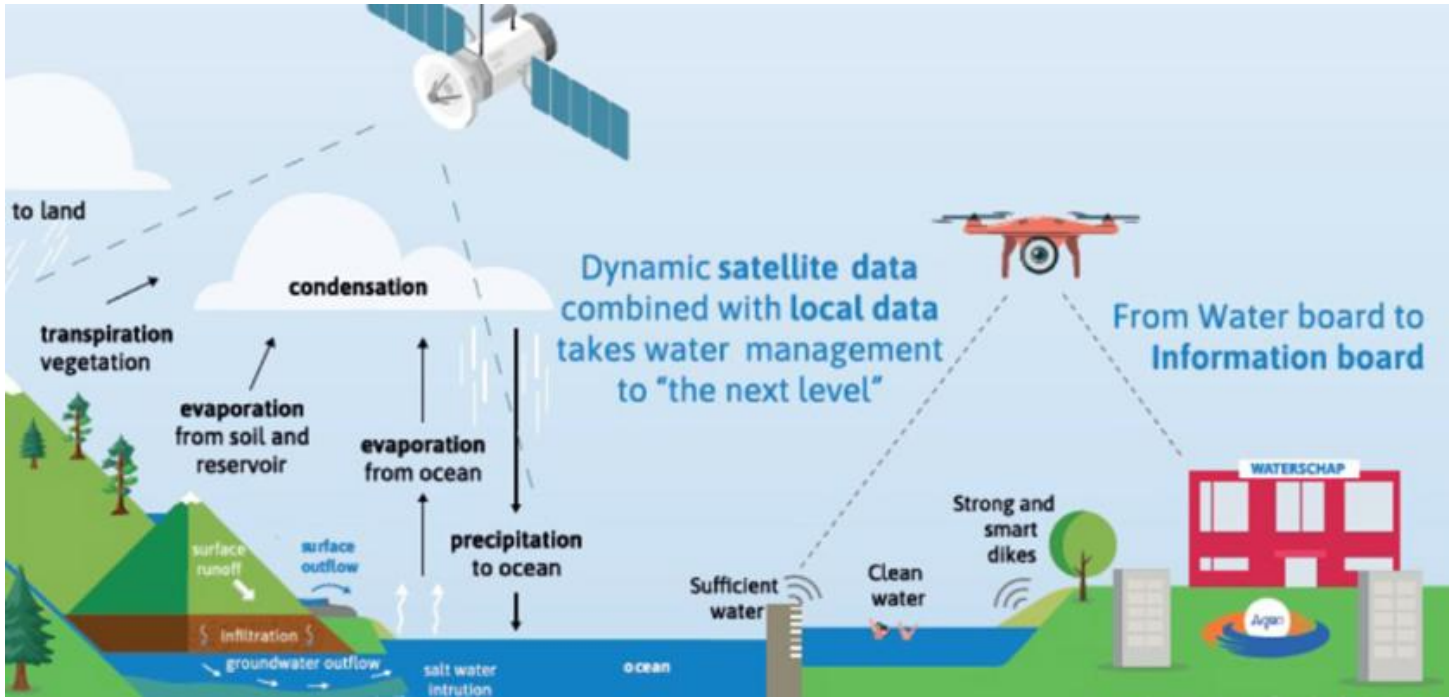
PCP/PPI example

[PCP WISE – Water Management Innovations For Climate Resilience]

Pre-Commercial Procurement for Water management Innovations from Space for European climate resilience - is a fully funded opportunity aimed at fostering **partnerships between European public buyers and private sector innovators.**

Collaboration among 12 public buyers ready to leverage the PCP instrument to acquire cutting-edge R&D services.



Goal: To co-design innovative solutions for tackling water-related crises intensified by climate change.

Development of water intelligence systems using EO data, in-situ measurements, and AI analytics to prevent and mitigate water-related crises like floods, fires, and subsidence both in urban and rural settings.

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Main workshop:

Co-design challenge in breakouts and group presentations

(25 min)

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INSTRUCTIONS

Working in groups (at least 3 different cities from 3 different countries) – 25 minutes

1. Introduce yourselves (10 min) – 1min per participant

- Say who you are, which city you represent, and briefly explain your role.
- Choose **one person to present your idea at the end.**

2. Create a PCP project together (15min):

Pre-Commercial Procurement (PCP) *is a public procurement instrument used by public authorities to fund research and development (R&D) for innovative solutions that are not yet available on the market.*

In other words, Pre-Commercial Procurement is when a public organization (government, city, hospital, etc.) procures R&D services from companies to develop new solutions to a public need.

Example:

A city wants to better manage electricity consumption and renewable energy in its urban districts, but no existing technology can efficiently coordinate buildings, solar panels, batteries, and EV charging in real time.

It launches a Pre-Commercial Procurement (PCP) tender and pays several companies to research and develop innovative urban smart grid solutions capable of optimizing energy flows and balancing supply and demand across the city.

Steps

- **Step 1.** Define a **challenge** your cities face **regarding urban energy**
- **Step 2.** Think about the **functions** that could address this challenge

Note: This will be the solution you will ask suppliers to work on in Phase 1-3 of your future PCP.

- **Step 3.** Identify **the stakeholders** who should be involved in developing or testing the solution
- **Step 4.** Give **a title** to your PCP project

3. Presentation (max. 2 min)

- One person from the group presents **your idea** to everyone
- Answer the following question: **What surprised you during your discussion?**

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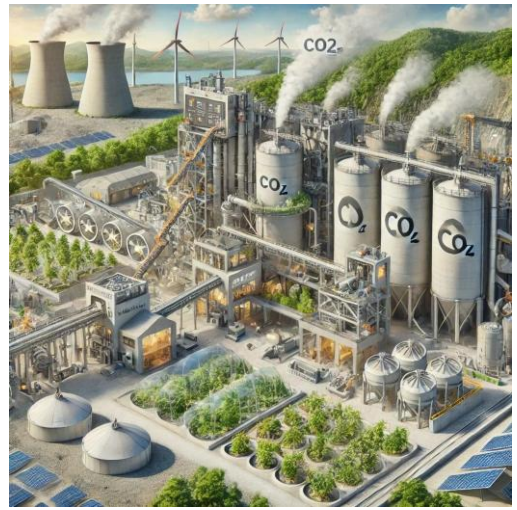
Guidelines to support session outcomes

Look for connections, relationships and dynamics

Bring your context forward



Work with mess and uncertainty

Bring your knowledge and experience to the process

Be creative! There are no bad answers

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Debrief & Reflection

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Debrief & Reflection

Present your outcome

What surprised you in your discussion?

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Horizon Europe – PCP/PPI and other opportunities

Pre-Commercial Procurement for Climate-Neutral Cities – Funding opportunity available under the call:

Call: Supporting the implementation of the Climate-Neutral and Smart Cities Mission

HORIZON-MISS-2027-04-CIT-05: *Boosting the transformation towards climate neutral cities, the net-zero economy and open strategic autonomy through Pre-Commercial Procurement (PCP) to help lead Europe's transition to climate neutrality.*

- **More information in the Horizon Europe Work Programme 2026-2027 >>**
- Access slides, recordings, and resources here**:** Strategic Public Procurement Group –**NetZeroCities**

Stay tuned: More information coming soon!

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Feedback & support needs

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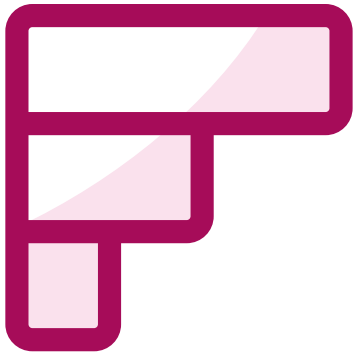

What would help cities collaborate on innovative procurement? Please rank the options from 1 (most effective) to 6 (least effective).

City case – Trikala, Greece

Energy4All – Smart Grids in Practice

Konstantina Zachari - Trikala

Angelos Chasiotis – Trikala's partner

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Thank you for your attention ☺

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