

Community DSO

Energy Innovation Summit, Liverpool

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Community DSO

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Northern Powergrid

Community DSO Project Overview

Maurice Lynch | Head of System Flexibility



Introduction to the Partners



Manages the electricity network that powers everyday life for 3.9 million homes and businesses in the North East, Yorkshire and northern Lincolnshire



Specialises in broad market, regulatory and business changes in the electricity system, with a specific expertise of smart local energy systems' commercial and business models



Specialises in modelling and analysis of transmission and distribution networks across GB and internationally



What is Community DSO?

Community DSO is a £14.5m innovation project, which has received £12.45m Ofgem NIC funding

Enable communities to:

- Pursue their own decarbonisation agenda
- Have greater control over their own energy and assets

Aiming to:

- Strengthen local energy independence with incentives for local decarbonisation
- Deliver cost and carbon savings
- Support DSO functionality for distribution networks



 tnei

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Enabling Smart Local Energy Systems (SLES)

Community DSO will develop and demonstrate a new **framework** for integrating Smart Local Energy Systems that delivers **mutual benefits for communities and the DNO**.

Enabling:

- How can Northern Powergrid **encourage** the emergence of energy communities?
- What do the **incentives** need to be?
- Do we need **regulatory change** to make this easier?

Operating:

- How does a SLES interface efficiently with the Northern Powergrid distribution network?
- How can a DNO manage multiple SLES effectively

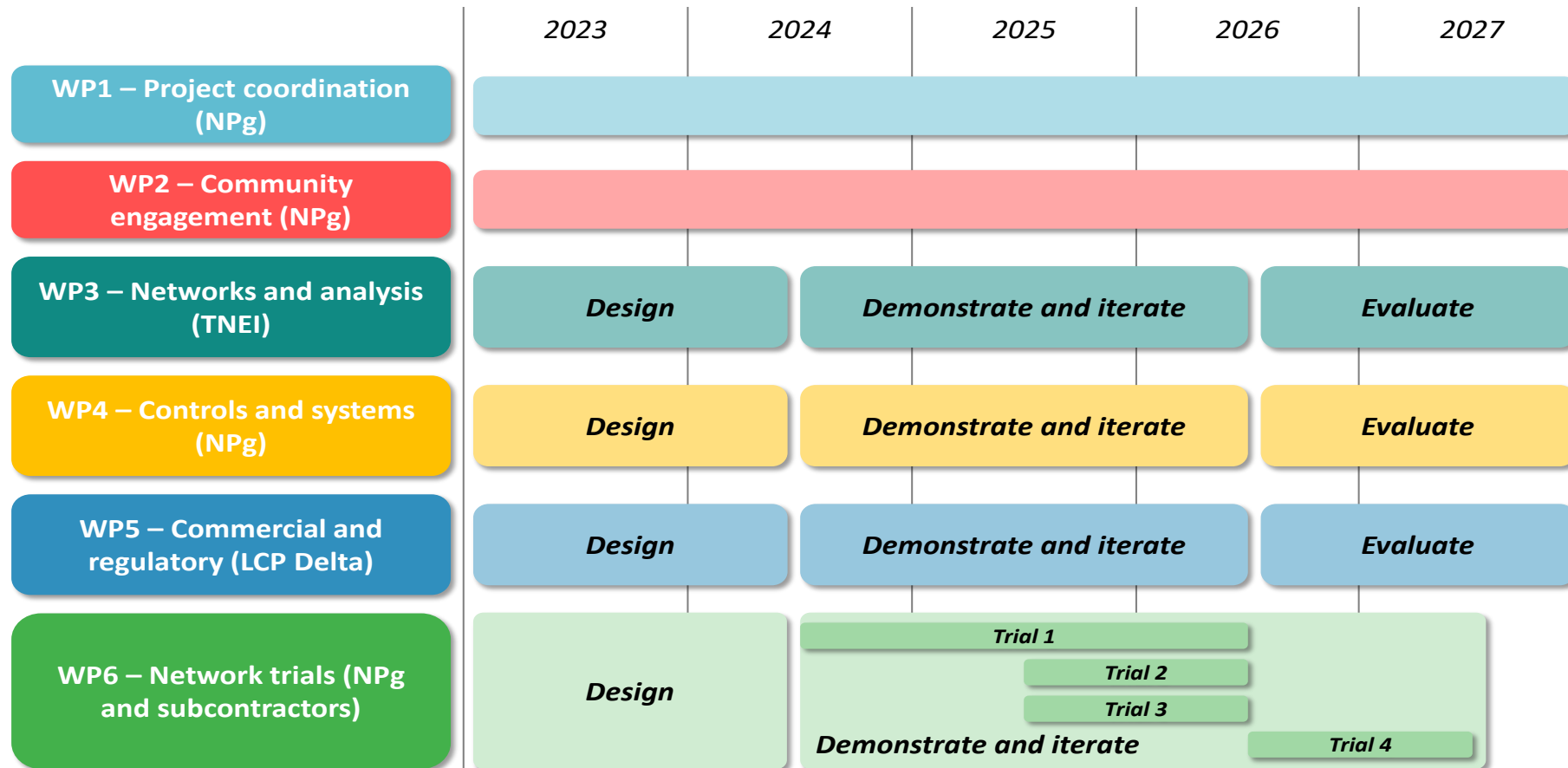
Project Aims

- **Provide the foundation for communities to adopt the Community DSO approach easily and at scale**
- Replicable tools and methodologies
- Technical and commercial requirements
- Recommendations for industry change
- Roles and responsibilities
- Community engagement strategies
- **Give industry insight and understanding about the effectiveness and performance of the approach**
- When is it attractive for a community?
- When can it operate successfully?
- How might multiple cells operate together?
- What are the impacts of rolling out the concept?

The ambition for Community DSO is to become a business-as-usual solution

Project Plan

Delivering four physical trials & outputs to enable widespread deployment of C-DSO method





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Community DSO Project Details

Sarah Freshwater | Community DSO Project Manager, LCP Delta



The Cell Concept

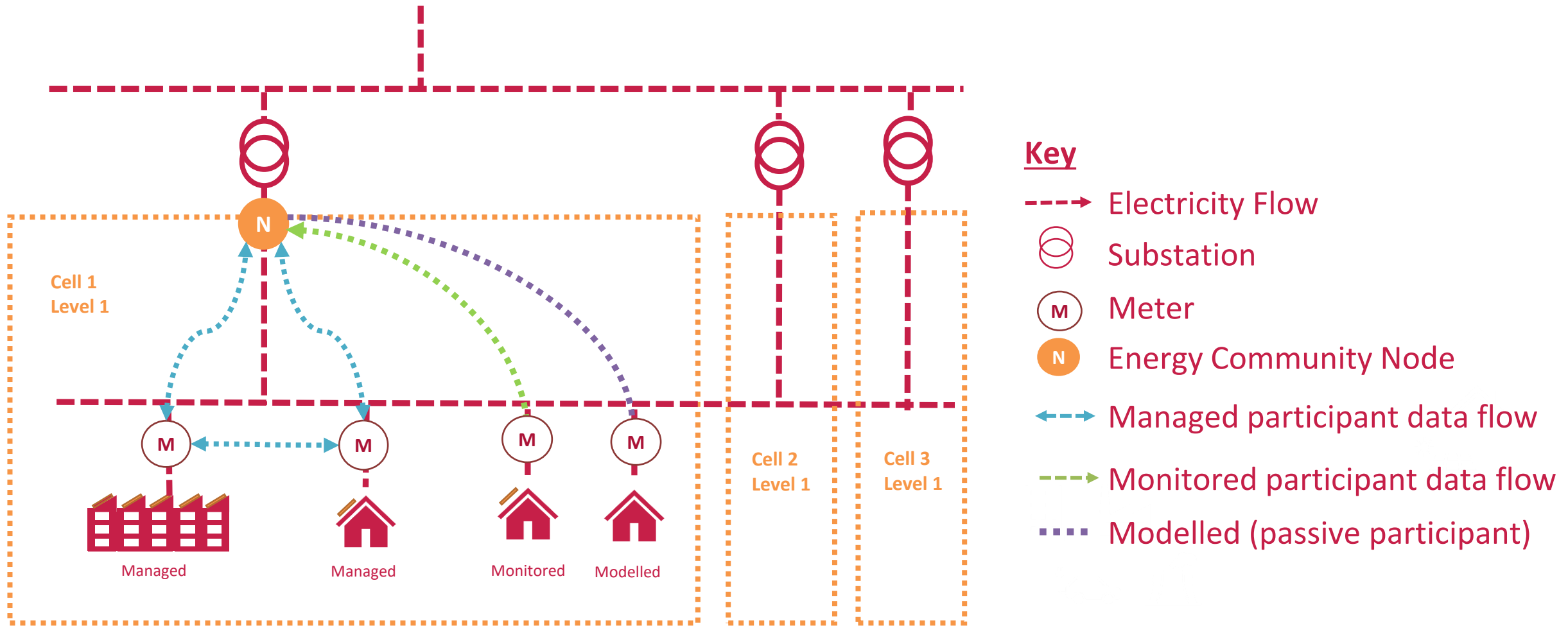
Provide an inclusive, replicable & simplified framework for community participation in energy system flexibility

- **Cellular** view of low voltage (LV) electricity distribution network
- Communities organised around LV network take a **flexibility first** approach to managing their local supply and demand
- **Consumers** and **Prosumers** of diverse community types can all play a part
- **Northern Powergrid** responsible for managing interfaces between each of community cells and network



The Cell Concept

Communities formed in cells structured around existing low voltage (LV) network



Inclusive Approach

Manage

- Consumer **very actively engaged**
- Systems control accessed
- Allows their assets to be used (e.g., PV Solar with battery)
- Can supply dispatchable energy to the community
- Can provide Demand Side Response (at pre-agreed times)

Monitor

- Consumer **actively engaged but assets are not dispatchable, or preference is not to be managed**
- Access to their energy data usage to support management of wider community system

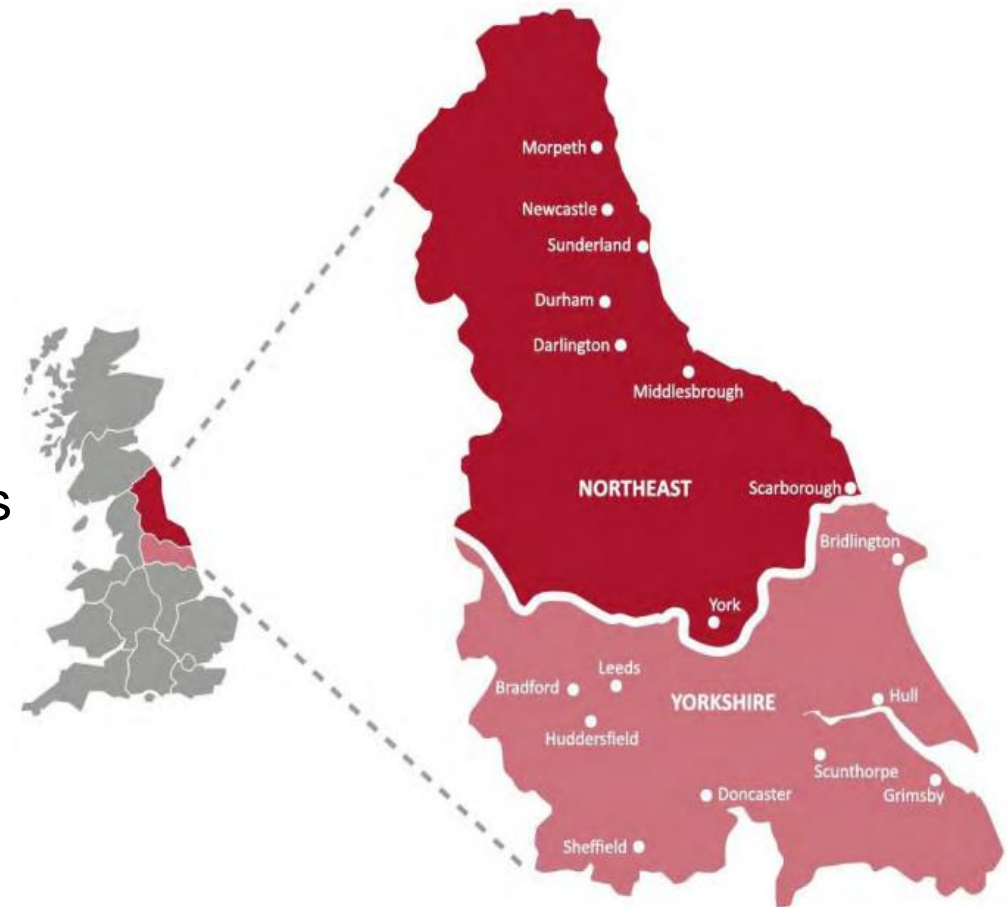
Model

- Consumers are **neither monitored directly nor managed** by control platform, either by choice or necessity
- Community DSO will use advanced predictive modelling tools to better understand how consumer demand varies

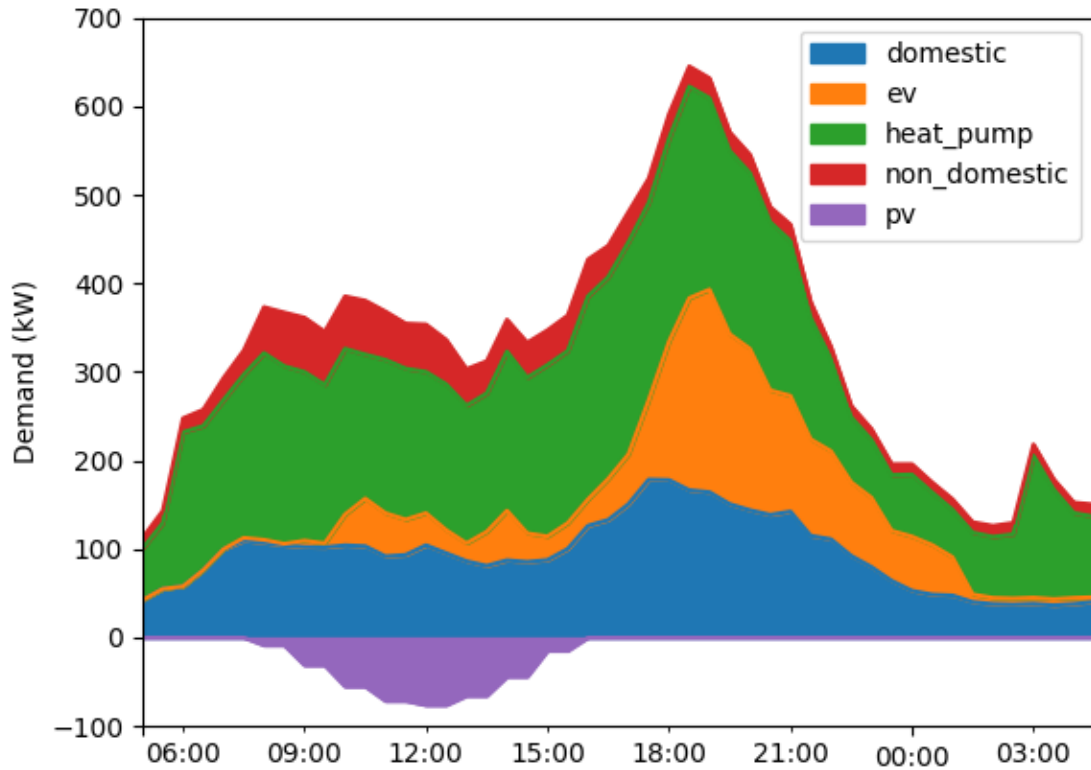
Project Trials



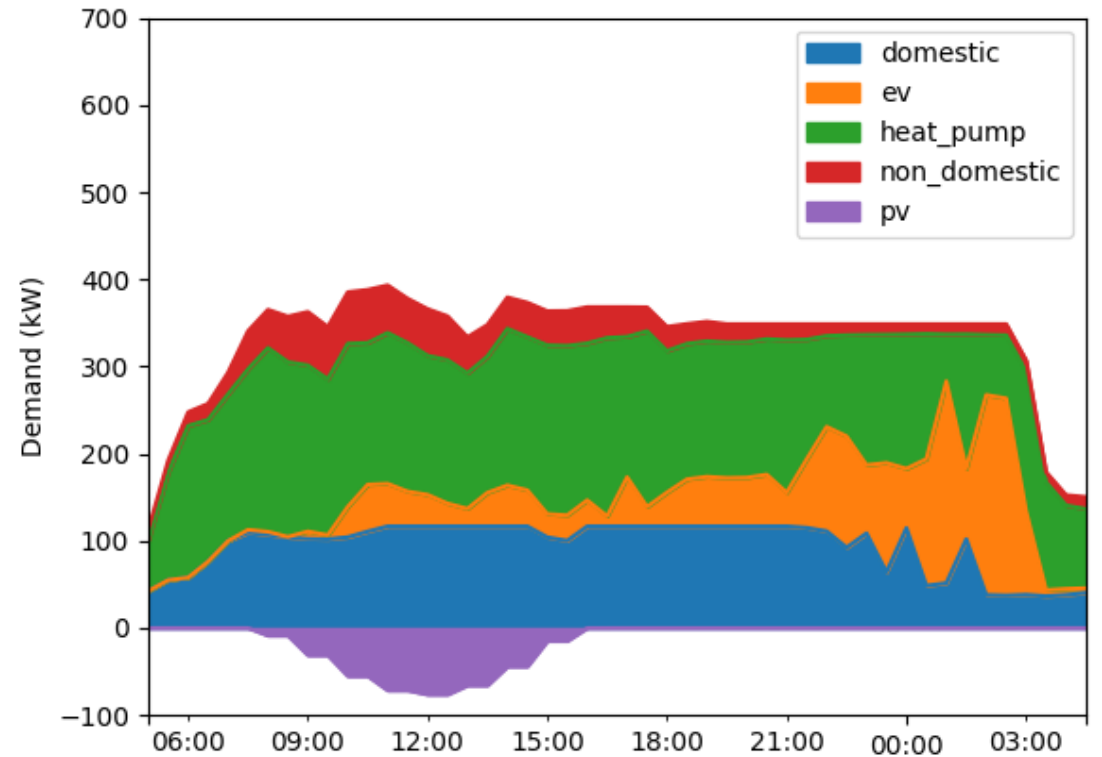
- **Each trial to be different:**
Demographics, types of premises, technologies, business models, mix of energy resources
- **Every trial centred around a specific area within LV network:**
One secondary substation (or possible one cable feeder)
- **Trial 1 unique because of timescales:**
Needs to mobilise quickly



Potential Effect? NIA Findings



~200 customers, most with EV, a heat-pump, and PV



~40% participating in useful LV flexibility (i.e., 40% of the community assets are “Managed”)

Questions & Answers

Come and find us on the following stands:

- Northern Powergrid - M6
- LCP Delta - F4
- TNEI - G6

For further information please contact
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