



Flexible Energy Market Development in New England

May 2024



About Piclo

Piclo Flex is the leading independent DER-enabled grid flexibility marketplace.



Enable Flex Service Providers to capture new revenue opportunities



Enable System Operators to procure local flexibility services at scale



Provide independent insight to help shape the future of flexibility



300,000

Flexible assets registered

2.6+ GW

Flexible capacity procured

\$95M

Of flexibility contracts awarded

22+ GW

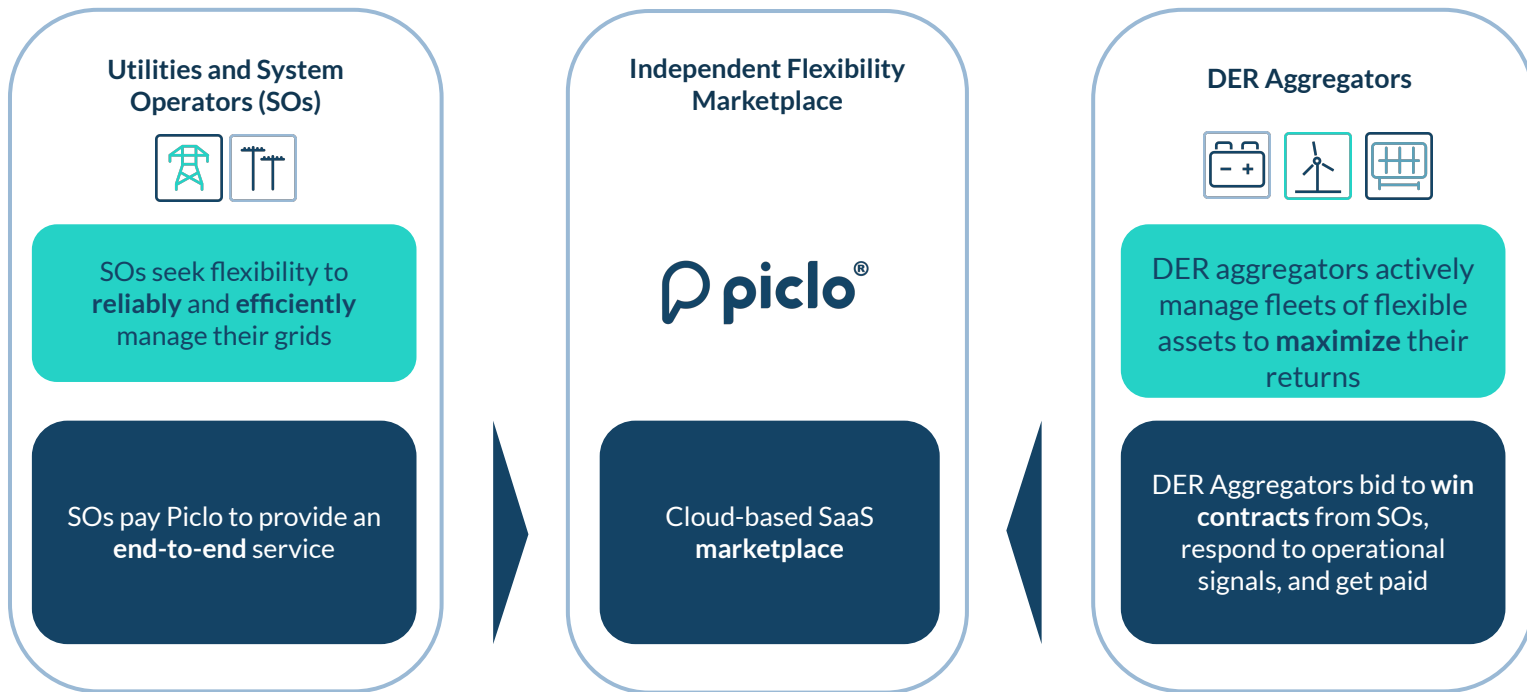
Flexible capacity registered

6 countries

With active clients and projects

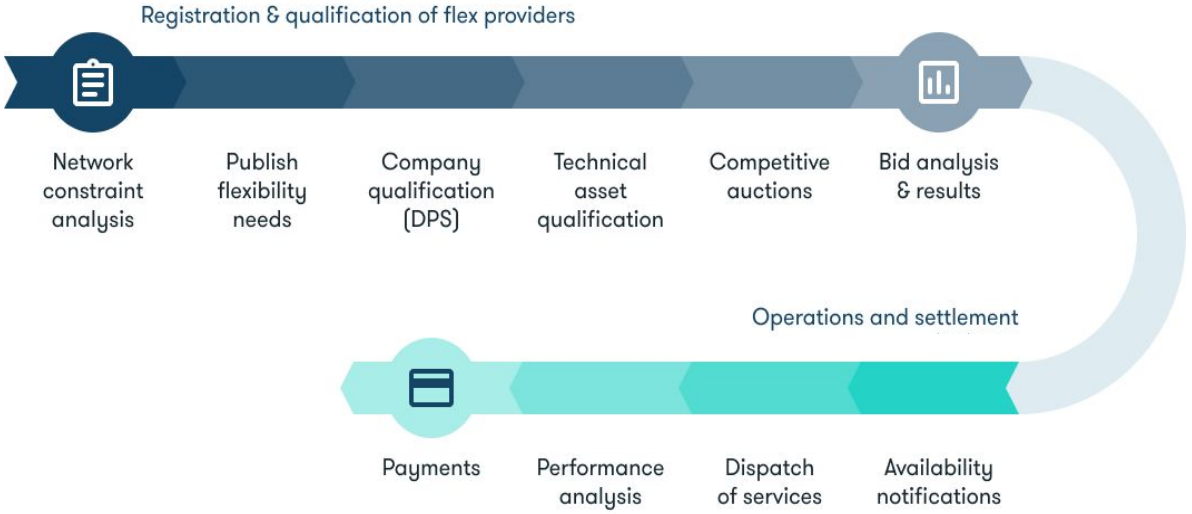
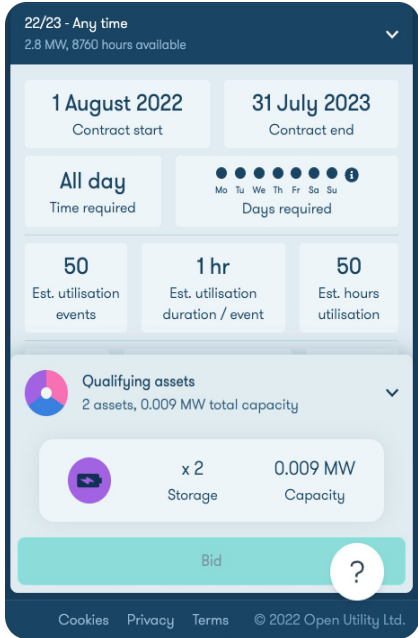


Piclo: An Independent Marketplace to Source DER Grid Flexibility





How the Marketplace Works





Three Distinct Categories of Smart Grid Technology

Virtual Power Plant platform (VPP)

Technology that helps DER aggregators pool DER assets (e.g. distributed generation, storage, etc.) for a specific site or set of sites to appear as one 'virtual power plant'. Also assesses pricing signals from various energy markets and optimizes bids into these markets.



Independent flexibility marketplace

Marketplace that allows DER aggregators to bid their assets to address network congestion issues. This includes creation of competitions within specific network area (as indicated by DERMS), assessment of bid prices (as submitted by DER aggregators), dispatch of service & remuneration.



Distributed Energy Resource Management System (DERMS)

Operational technology that helps DSOs organize, control and optimize DERs on the grid. Enables utilities to forecast grid impact of DERs given operational and weather conditions as well as provide options to address constraints.



FSP-centric

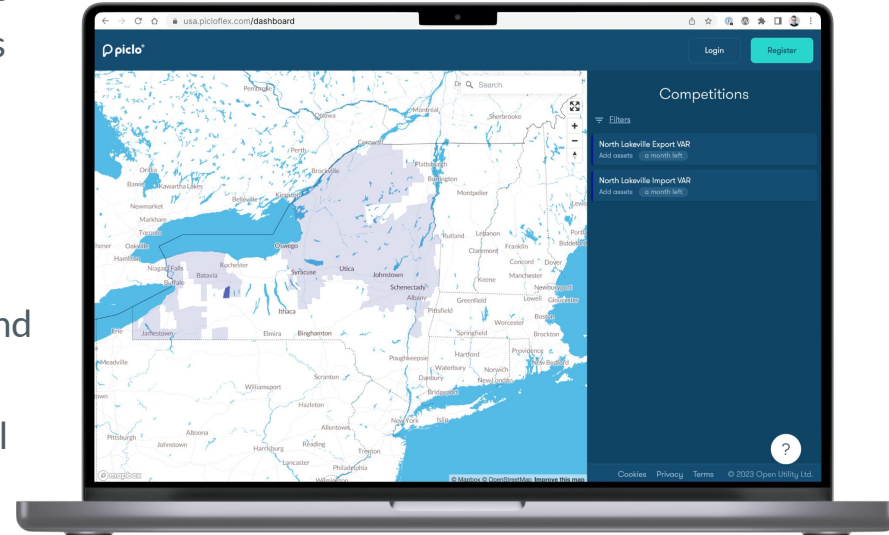


Grid-centric



National Grid Pilot in New York State

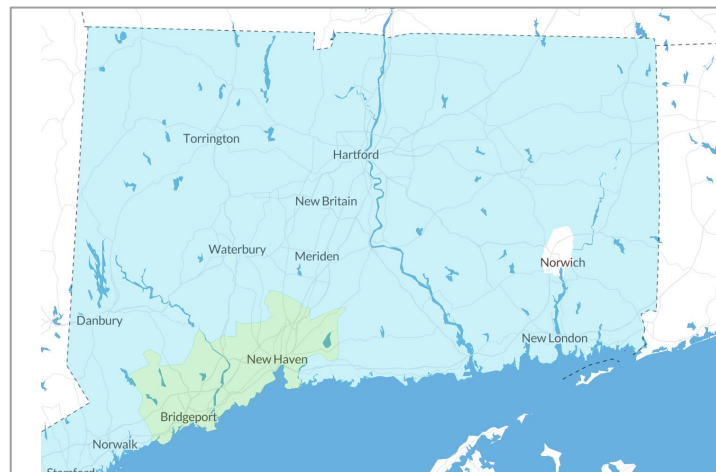
- Test how a centralized platform can improve existing programs - starting with Non-Wires Alternatives (NWAs), and storage and demand response (Dynamic Load Management, DLM)
- We streamlined processes and submission requirements to improve user experience and DER aggregators' ability to participate
- We are widening the DER aggregator funnel and lowering participation hurdles, facilitating multiple market designs and short- and long-term competitions





CT IES Project

- Piclo awarded \$1.8M from CT PURA's Innovative Energy Solutions (IES) Program to create NE's first local grid flexibility market with UI and Eversource
- Enables DER aggregators and VPPs to unlock new revenue, and utilities to better manage grid congestion and save money
- Project aims to test multiple use cases of flexibility beyond peak shaving (e.g., local system constraints, capacity shortfalls, maintenance events)
- Running end-to-end capabilities, recruiting and centralizing DER participation, and improving electrification and reliability





How has the UK Driven Flexibility, and Flexibility Markets?

1. Evidence & analysis

- UK Government has recognised the significant value of flexibility
- 2021 estimate was a \$12.6B cost saving by 2050 with increased system flexibility

2. Consistent and progressive policy

- UK Government commitment to climate action; and energy security - emphasis on electrifying the energy system, and therefore importance of flexibility within it
- Three government strategy documents (2017, 2018, 2021) emphasising the importance of flexibility provided industry confidence to invest

3. Regulatory incentives

- Price control structure (which encourages electricity networks to consider equally capital and operational investments, and get return on both)
- New incentives and requirements in 2023-28 price control for Electricity Distribution



What is the Price Control Structure in the UK?

The UK established the framework needed for local flexibility markets. Key to this has been the price control periods, which set the revenues DNOs can earn under the **RIIO framework**:

- **RIIO ED1* (2015-2023)**: Totex Incentive Model (combining both capex and opex costs)
- **RIIO ED2 (2023-2028)**: Totex Incentive Model is further bolstered by:
 - **Introduction of a DSO Incentive Mechanism** incentivising DSOs to establish transparent, fair and coordinated flexibility markets.
 - DNO expenditure on flexibility is forecast to reach over **\$100M/year by 2028** as a result

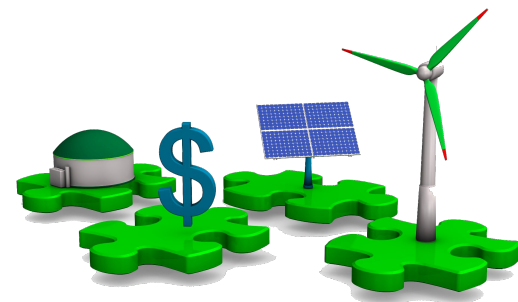


*ED = Electricity Distribution



Hurdles for Flexibility in the US

- **On the state level**—incentive payments are a major hurdle. How will utilities receive cost recovery for implementing software innovation, i.e. a flexible energy market
- **Simplifying/standardizing the process**—DER aggregators don't want to be uploading assets to a new platform for each DER program, every utility, and/or every state
- **DER visibility**—how will system operators and utilities get a visual on the DER assets available to them?
- **CAPEX/OPEX vs. TOTEX** – in order to create a DER flexibility , proper incentives are necessary for innovation and adoption of grid technologies
- **Tariffs and markets/programs** – utilities need more tools to nudge customers and aggregators to adjust their load and interact with the grid



Thank you

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