

# Open Energy

Building the web of energy data



PHOTO: GAVIN STARKS

- 1. Develop an open standard that enables open marketplaces for data-sharing to flourish**
- 2. Lay the foundations for interoperable and cohesive energy data infrastructure**
- 3. Build on existing work and the sunk costs invested in existing initiatives**

# Open Energy

Building the web of energy data



PHOTO: GAVIN STARKS

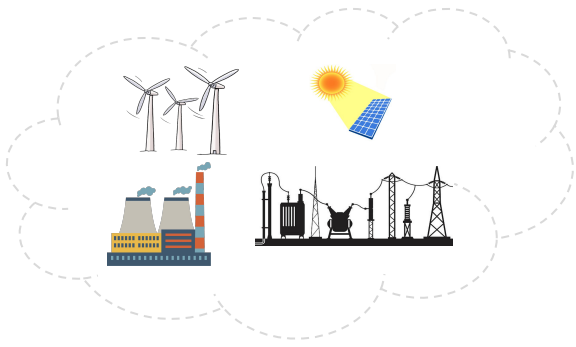
The biggest inhibitor to innovation is not technology.

Today's complex value-chains are not working efficiently at-scale due to high transaction costs and friction between systems: leading to misallocation of resources and missed opportunities.

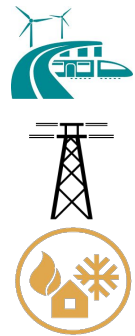
Digital transformation maturing—now is the time to create our energy data infrastructure for a **stable grid** and to deliver our **net-zero commitments**.

Building on existing work, we propose creating open standards and systems to address the fact that all organisations are both data consumers and data suppliers—data is a network not a supply-chain.

We will help develop a **'web of energy data'** whose architecture will enable each organisation to control the flow and usage of their own data.



**OPEN ENERGY**  
Shared principles,  
processes and practices



- DIVERSE NEEDS**
- Enterprises
  - SMEs
  - Public sector
  - Systems operators
  - 'Data trusts'
  - Consumers
  - Cross-sector  
(transport, built world, water, agriculture)

## NEEDS

Make it easy to access, use and share data across the market: flexibly, securely and scalably.  
Address the economic, legal and technical issues to integrate across sectors while delivering a stable grid and net-zero.

## CHALLENGES

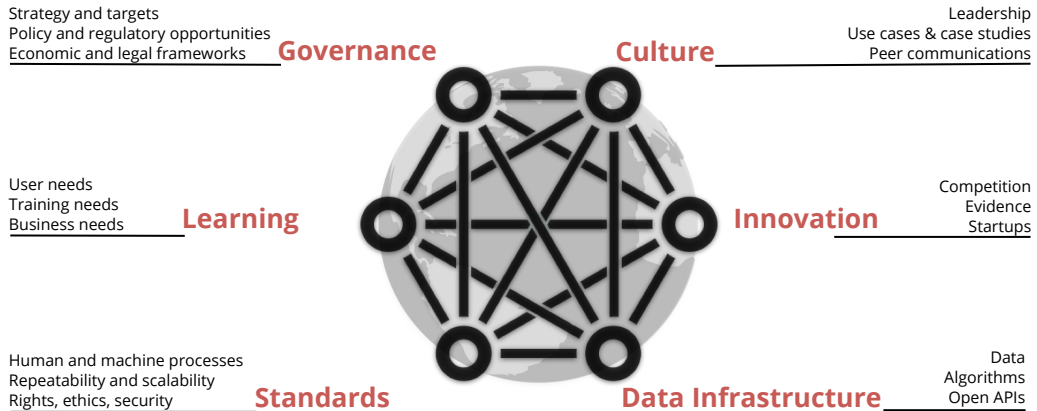
Data-sharing requires multiple bilateral legal agreements (complex needs)  
Sources are increasing by orders of magnitude (e.g. micro-generation, solar, wind, batteries, electric vehicles)  
User needs are increasing (e.g. grid, traders, suppliers, energy-tech)  
Complexity is increasing (e.g. number of assets, new flexibility markets, new technology solutions, moves to greater data granularity and frequency of updates moving to sub-second)  
Multiple legacy energy systems struggle to coordinate because they speak different 'languages'

## POTENTIAL PATHS

Shared legal frameworks (based on use-cases and user-needs) → 'Presumed open' or 'Pre-emptive licensing'  
Shared principles, processes & practices for data sharing (e.g. open access to metadata)  
Common mechanisms for market engagement and innovation  
Potential for regulatory interventions and enabling policy to keep pace with, support and not block market innovation

To enable sharing, our **data infrastructure** must address (at least)

- Rights
- Liability models
- Dispute resolution and redress
- Consent & consent management
- Security & privacy
- Legal frameworks
- Usability
- Logistics
- Technology architecture
- Operating principles



Similar approaches are being undertaken across sectors including banking, insurance, pensions, transport and health.

## Data ecosystem participants (nodes)

“Every organisation (node) is both a consumer and a supplier of data.

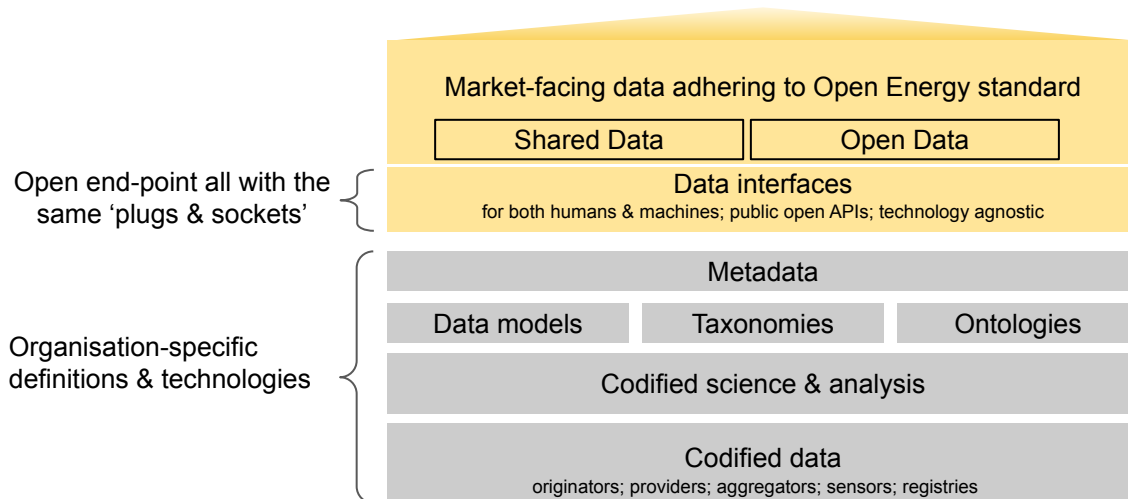
Every node is a participant in our shared-data ecosystem.

This is a network, not a supply-chain.”

- |                  |                                |
|------------------|--------------------------------|
| Asset managers   | Business consumers             |
| Producers        | Domestic consumers             |
| Distributors     | Regulatory & governance bodies |
| Transmission     | Service-focussed entities      |
| Suppliers        | System operators               |
| Storage          | Devices & meter infrastructure |
| Wholesale market | Utilities                      |
| Retail market    | Traders                        |
| Aggregators      | Platform providers             |

“A web of energy data will enable innovation and growth in efficient, decarbonising solutions.

Exponential growth in data sharing (network effects) will increase innovation and stimulate new entrants.”



Convening	<p>Whole-of-market <b>needs</b></p> <p>Definition, analysis, triage &amp; prioritisation</p> <p>(continuous development based on rapid market evolution)</p>	Working groups
Communication		
Use cases		
Business cases		
Risk analysis		
Governance	Definition of shared values, commitments and business rules	Documents
	Definition of common Open APIs	Documents & code
Access rules	Operational licensing, certification & regulatory liaison	Processes & code
	Directory of registered ecosystem actors	Platform

### Next steps (outputs & outcomes)

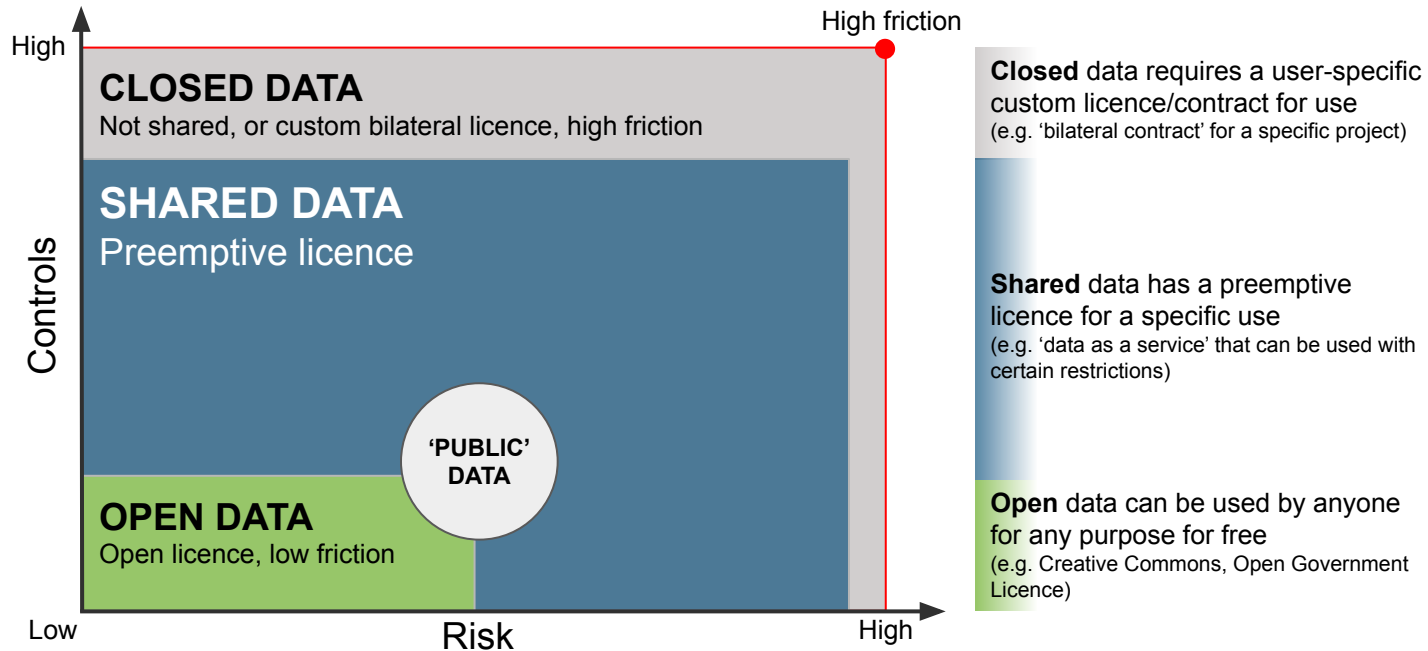
- Develop an energy-equivalent of the Open Banking Implementation Entity (OBIE)\* and associated public-private funding models via Icebreaker One\*\*
- Develop mechanisms to enable the implementation and adoption of shared interoperability standards
- Develop use-cases, business models and potential policy interventions
- Develop mechanisms for industry innovation (e.g. regulatory sandboxes, innovation programmes)
- Create processes, principles and practices for coherent data sharing and standards development
- Create an Open Energy Directory that enables the adoption of standards and potential Standards

### Engagement processes for co-development

- Engage with regulators, existing and new data infrastructure organisations
- Convene public and private sectors to understand needs, identify blockers and opportunities
- Explore, test, document and instrument relevant data business models to ensure fair value exchange
- Explore, document and instrument policy, regulatory, IP, legal, liability and licensing frameworks that enable appropriate incentives
- Develop, document and publish shared principles and practice, values and standards for wider adoption and reuse

\* The Open Banking Standard is a regulated b2b standard that mandates open access to shared data. It is overseen by the OBIE Trust and funded by the banks.

\*\* IcebreakerOne.org is a non-profit, non-partisan data infrastructure development organisation modelled on OBIE and the Open Data Institute.



**Closed** data requires a user-specific custom licence/contract for use (e.g. 'bilateral contract' for a specific project)

**Shared** data has a preemptive licence for a specific use (e.g. 'data as a service' that can be used with certain restrictions)

**Open** data can be used by anyone for any purpose for free (e.g. Creative Commons, Open Government Licence)

We define the 'presumed open' concept for 'Public Data'\* as a **pre-emptive licence** that determines how the data can be used.

\*A strategy for a Modern Digitalised Energy System, EDT

<https://icebreakerone.org/what-is-shared-data>