



# Defining the 'Open Energy Ecosystem'

*Re-using the digital transactions paradigm*

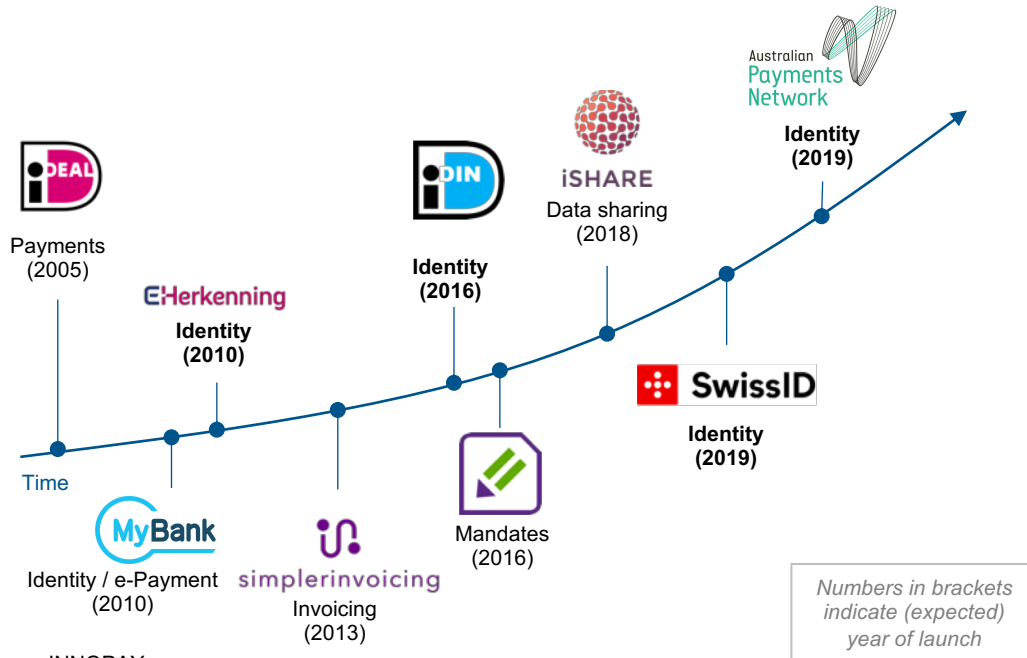
Workshop Energy Open Market Places and the Enabling Technologies

Brussels, 8 March 2019



# INNOPAY is deeply involved in creation of trust frameworks for 'many-to-many qualified information exchange'

## SCHEMES/TRUST FRAMEWORKS CO-CREATED BY INNOPAY



Source: INNOPAY

## INNOPAY EXPERTISE ON TRUST FRAMEWORKS FOR QUALIFIED DATA EXCHANGE

INNOPAY specialises in **co-creation of trust framework** in areas such as Energy, Identity, Payments, Mandates, Invoicing and Data sharing

- Experience includes large **stakeholder MANY TO MANY networks for B2G, B2B, G2B and B2C** contexts
- Finding the minimal 'collaborative domain' and the 'competitive domain', i.e. standardisation on functional, legal, operational, technical and business aspects
- 'Soft' infrastructure, complementing 'hard infrastructure
- Infrastructure is ultimately sector agnostic
- Infrastructure facilitates the innovative ecosystem of actors
- Technology agnostics

# Within the discussion document “Open Energy Marketplaces” the need for interoperability between marketplace solutions is apparent

## Policy note: Mechanisms for multi stakeholder approaches:

### Other identified challenges:

- Portability from blockchain to blockchain or to a service off the chain
- Storage of data on block and the security imperative
- Plug into identity service
- Trust for data handling
- Interoperability of consensus mechanisms
- On-line and off-line trust

For the open energy marketplaces to become a reality, it will be essential to define how the data about demand, supply, and potential flexibilities can be exchanged on the platforms in a neutral and non-discriminatory way

Interoperability platforms and evolving open-source ‘plug-and-play’ solutions allow for the creation and growth of marketplace ecosystems. The need for new cross-domain data sources as well as the drive to leverage the original data streams in additional ways will lead organisations to look for external data to leverage. This process allows the establishment of a bidirectional push and pull of internal and external data

### MARKET PLACES:

Flexibility services can be traded in different marketplaces to value the services at most, such as the wholesale market from day-ahead to intraday, the balancing market or the congestion management market(s). These markets may be supported by different platforms. Interoperability of such platforms will ensure proper coordination between these market processes.

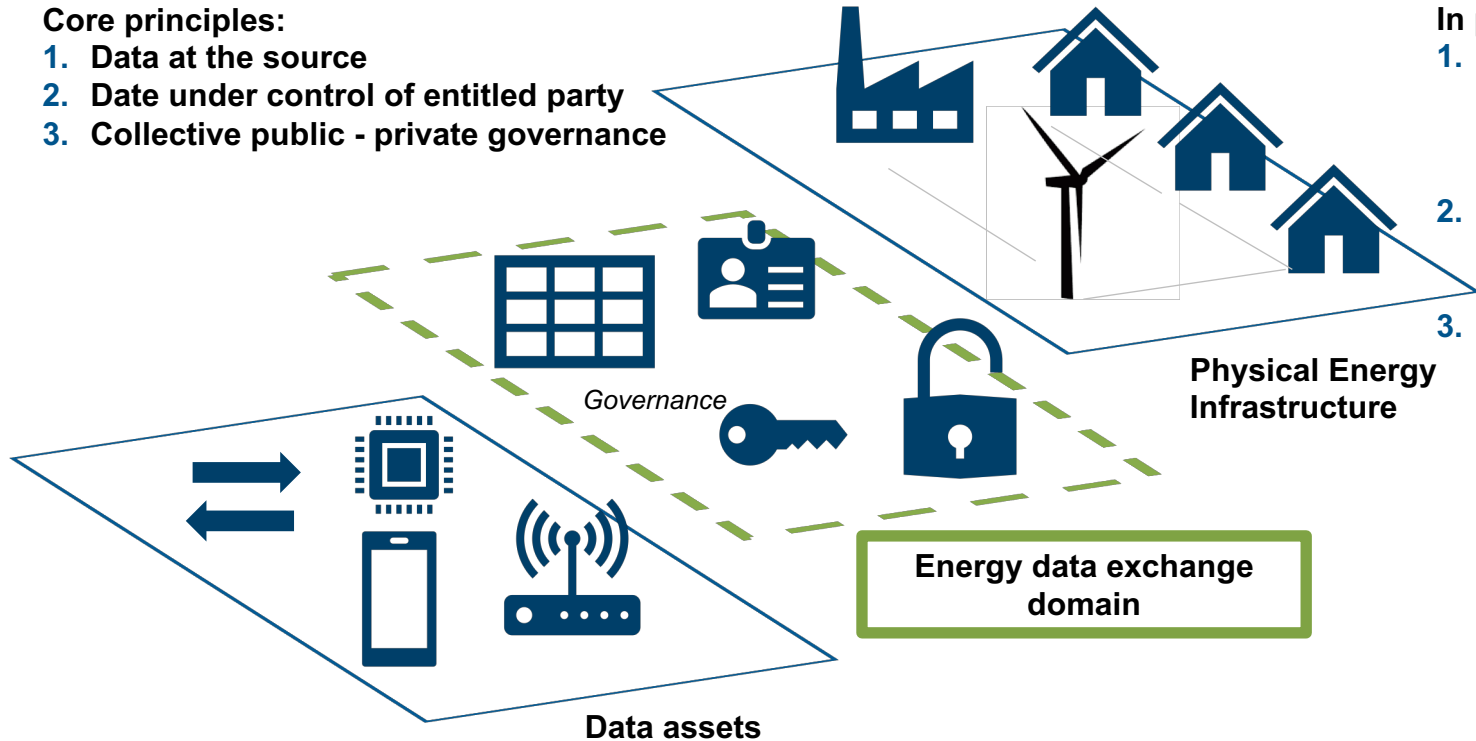
# To enable the “energy data exchange domain” an “Open Energy Governance” layer is needed to facilitate multisided transactions

## Core principles:

1. Data at the source
2. Data under control of entitled party
3. Collective public - private governance

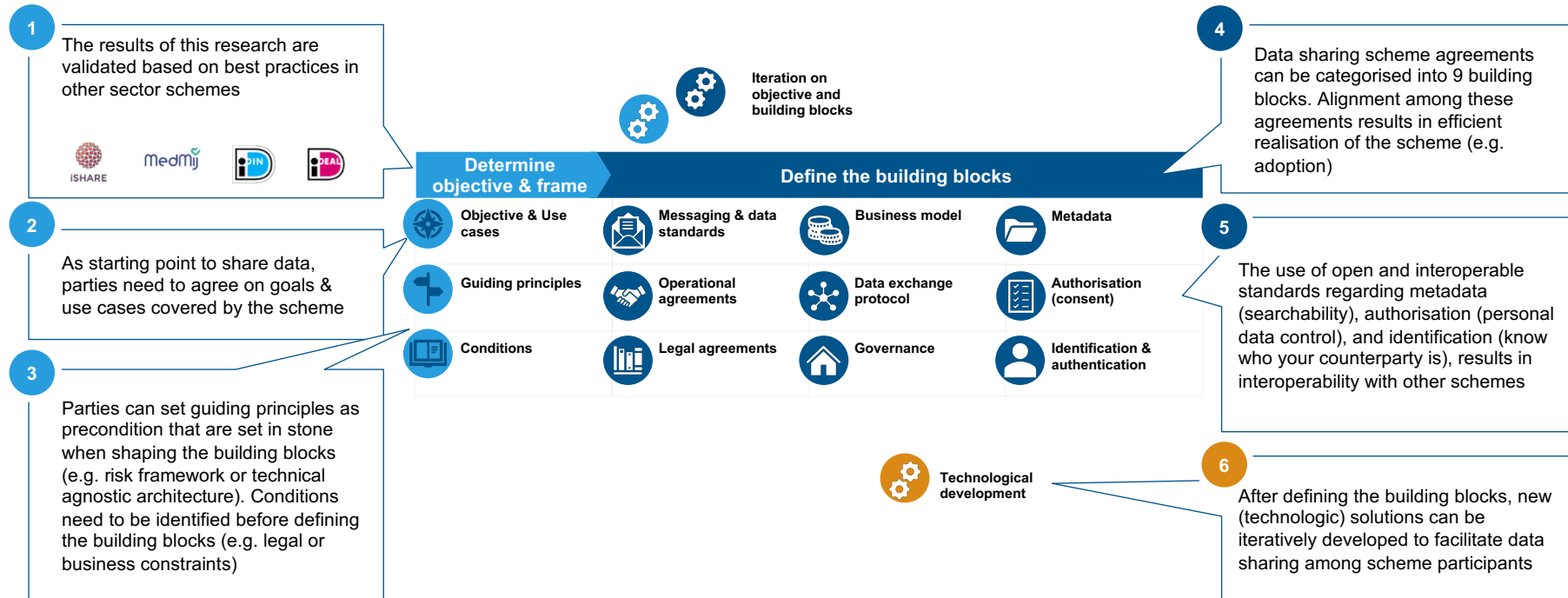
## In practice

1. Federated trust network with ‘data sovereignty’ for data subject and entitled parties
2. Network of platforms, blockchains, IoT device, and peer-2-peer systems
3. Minimal central infrastructure



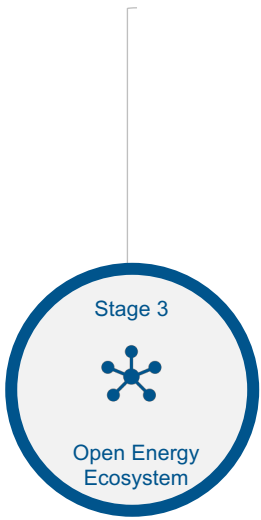
# Nine building blocks enable many-to-many data sharing in the energy sector

INNOPAY Scheme Canvas Model with the 9 building blocks for a data sharing scheme



Note: Description per building block can be found in the appendix

# GDPR and Smart Metering is short term trigger for starting the NL journey toward Open Energy Data Exchange



**Analytics & Application**

All Dutch citizens

**Accessibility of data**

**Availability of data**

**Data request for the purpose of regulated market processes**

- Insight in customer energy usage
- Data for transfer to other utility
- Reconciliation
- Personalised offer (from utility)

**Other data requests**

- Personalised offer (from EPV)
- Several (un)known future use cases initiated by non-market roles in the energy ecosystem. Also international & cross-industry

**Data sharing agreements based on 9 building blocks**

- Gateways
- 'Letter' structure
- 'Envelop' structure
- Transport structure
- 'Pipe' structure (Internet)

**Data exchange protocol**

- Autorisation tools
- Authentication tools
- Identification tools
- Level of assurance
- Power of attorney

**Identification, authentication, and authorisation**

**Personal data**

**Supplementary data**

**Registers**

**Source**

DSO registers, Consent, Prosumer bron, IoT, DSOs, TSOs, Data from the energy supply chain

DSOs P4, Prosumer bron, IoT, DSOs, TSOs, Data from the energy supply chain

DSOs, TSOs, Data from the energy supply chain

DSOs, TSOs, Data from the energy supply chain

Source: INNOPAY analysis, Workshops EDSN - INNOPAY

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