

The Voice of the Networks



Energy Networks Association

Introduction to ENA Open Networks Project

Introduction: ENA Open Networks Project



- In December 2016 ENA gave their commitment to a major new long-term project that will transform the way that both local Distribution Networks and national Transmission Networks will operate.
- Launched in January 2017, the Open Networks Project will lay the foundations of a smart energy grid in the UK.
- It will enable the UK's energy networks to:
 - Address the challenges caused by the continued uptake of distributed generation. The UK now has 30GW of locally connected generation.
 - Move from their traditional role of simply delivering electricity, to one where they are a platform and enabler for a whole range of new smart energy technologies that will deliver benefits to households, businesses and network operators
- Network operators must meet challenges whilst:
 - Continuing to deliver safe and secure operation of distribution networks.
 - Ensuring efficient and timely access to the network for customer.
 - Providing value for money.

Context: Market challenges



In recent years, the UK's energy networks have faced a number of challenges:

- The physical need to connect more distributed generation to the local networks
- The increasing capacity interactions between distribution and transmission networks
- Increasing requirements of distribution networks to manage less predictable and more active energy flows, which are met by contracting 'system operator' services
- Increasing use of capacity based services at distribution level
- New data requirements to manage the system efficiently and securely
- Need to assess investment and operational decisions across the whole energy system rather than just one part of it
- Reducing system inertia and increasing whole energy system reliance on distributed generation which largely uses renewable technologies
- The transition of traditional Distribution Network Operators (DNOs) to more active and empowered Distribution System Operators (DSOs) as they take on more system responsibilities

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Overview: Open Networks Project



A **major energy industry initiative** that will transform the way our energy networks work, underpinning the delivery of the smart grid:

- Brings together all 7 of Great Britain's electricity grid operators, respected academics, NGOs, Government departments and the energy regulator Ofgem
- Takes a 'blank-sheet' approach that will consider all options and models for the transition of DNOs to DSOs, including how it will interact with the gas network
- Will deliver options for change across 4 areas (transmission-distribution processes, customer experiences, the DNO to DSO transition & charging) in 2017

Will give help **give households, businesses & networks the ability to take advantage** of new energy technologies to take control of their energy and lower their costs:

- Move distribution networks from passive distributors to active managers, helping create markets for new services for the end user
- Empower distribution networks to access new products and services to operate networks in a more cost-efficient way
- Defines the new relationship between transmission and distribution networks

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Overview: Open Networks Project



Will help **underpin business growth, attract investment and deliver real economic benefits** to the UK:

- Help create the market place for products & services to deliver cost-effective energy to British businesses, as part of the Government's Industrial Strategy.
- Existing LCNF has already enabled close to £1bn of cost savings that will be delivered between now and 2023, clearly demonstrating the economic potential of smarter networks.

Will take a **whole energy system approach** to designing solutions by consulting with a wide range of stakeholders, including the gas networks, through the Advisory Group.

- Gas and electricity networks face many of the same issues.
- Perceived successes and failures in one area of energy policy can inform the government's or regulator's view of future energy policy and regulatory changes in another.
- Potential for strong benefits from thinking across the whole energy system and from networks working closely together, speaking with a common voice and learning lessons from each other's experiences.
- Benefits can include more efficient processes and projects, cheaper costs for customers, better safety, simpler policy and avoiding bad practice.

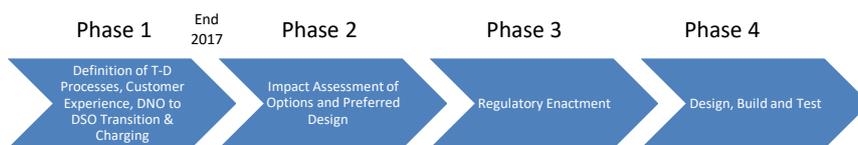
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Objectives & timelines



- First Phase to deliver in 2017
- Expect Second Phase in 2018 and then beyond to RIIO ED2/T2 (2023)

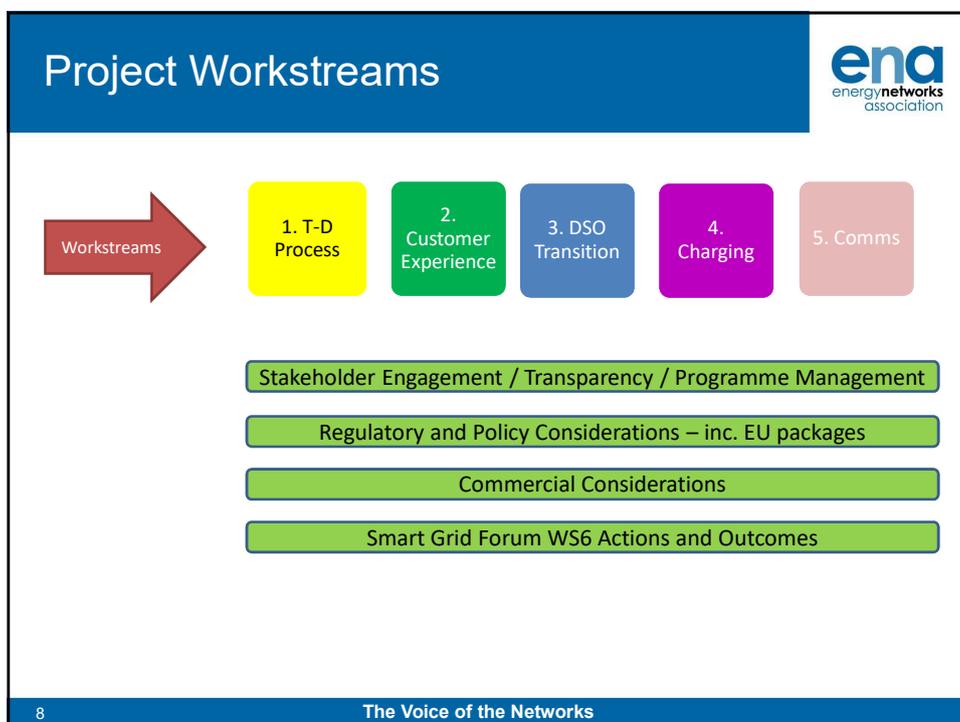
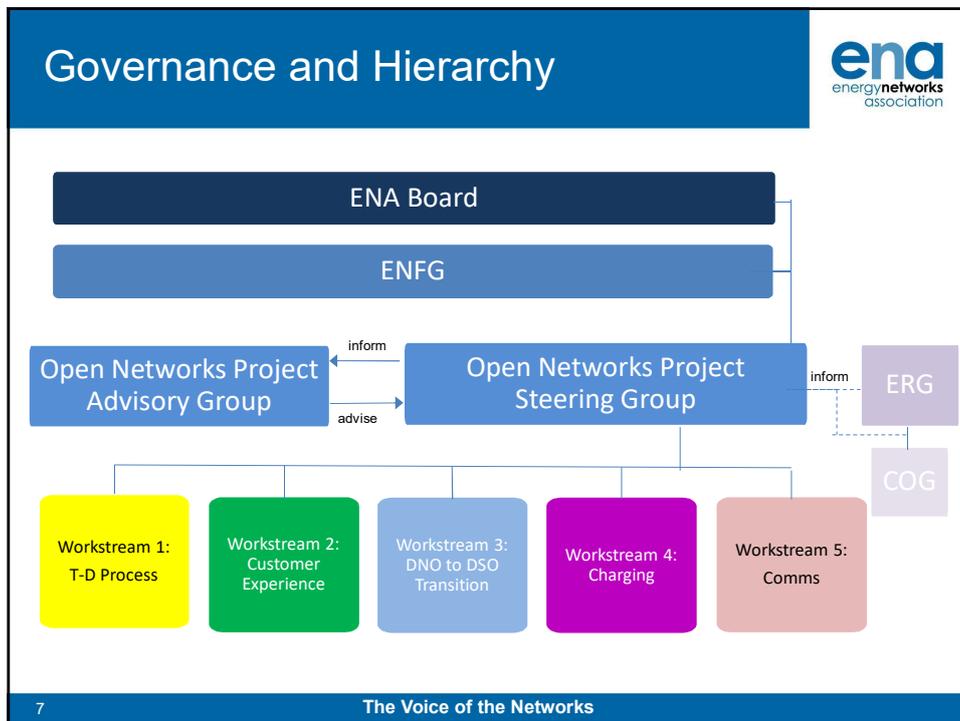


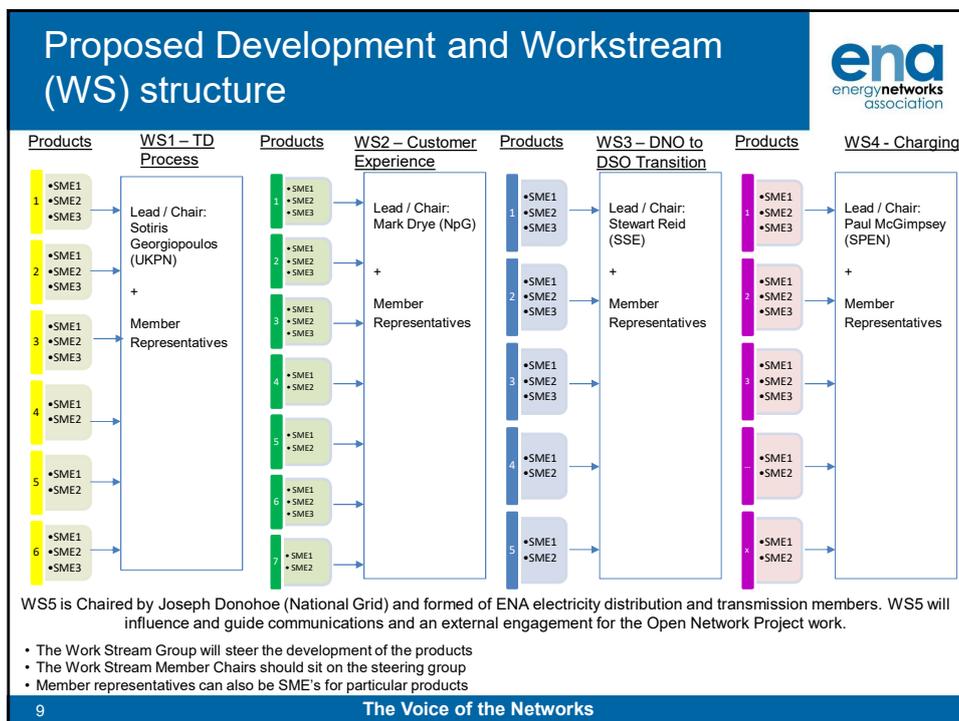
The objectives of the Open Networks Project for the first phase of work in 2017 are to:

1. Develop improved **T-D processes** around connections, planning, shared TSO/DSO services and operation
2. Assess the gaps between the **experience our customers** currently receive and what they would like and identify any further changes to close the gaps within the context of 'level playing field' and common T & D approach
3. Develop a more detailed view of the required **transition from DNO to DSO** including the impacts on existing organisation capability
4. Consider the **charging** requirements of enduring electricity transmission/distribution systems

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Defining a DSO: Principles

- Whilst the high level principle of the DSO transition has come to be well understood within the industry, there is a wide range of activity that could fall within its definition, and understanding what that role will entail is a vital prerequisite to delivering the transition.
- The Open Networks Project's definition of the DSO transition, seeks to satisfy four key principles:
 1. That a DSO is non-discriminatory and technology neutral: favouring solutions that provide the most optimal solutions rather than particular technologies;
 2. That it uses market mechanisms that are fair, transparent and competitive, providing a level playing field for providers of network services and providers of energy products/services in order to deploy the most efficient and effective solutions;
 3. That it supports flexibility and innovation in responding to customer future requirements and in developing the network services they require, including enabling and facilitating innovation by others; and
 4. That it delivers value and service to a range of customers and communities.

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Definition of a DSO



"A Distribution Operator (DSO) securely operates and develops an active distribution system comprising networks, demand, generation and other flexible distributed energy resources (DER).

"As a neutral facilitator of an open and accessible market, it will enable competitive access to markets and the optimal use of DER on distribution networks to deliver security, sustainability and affordability in the support of whole system optimisation.

"A DSO enable customers to be both producers and consumers; enabling customer access, customer choice and great customer service."

- As a cross-industry effort, the Open Networks Project is mindful of the fact there is more to learn and that this is a fast moving picture.
- The definition provides a starting point for the development of the DSO with a range of potential paths.
- It is not an exhaustive, or closed definition, but will evolve over time as the knowledge of the networks increases and the industry develops.