

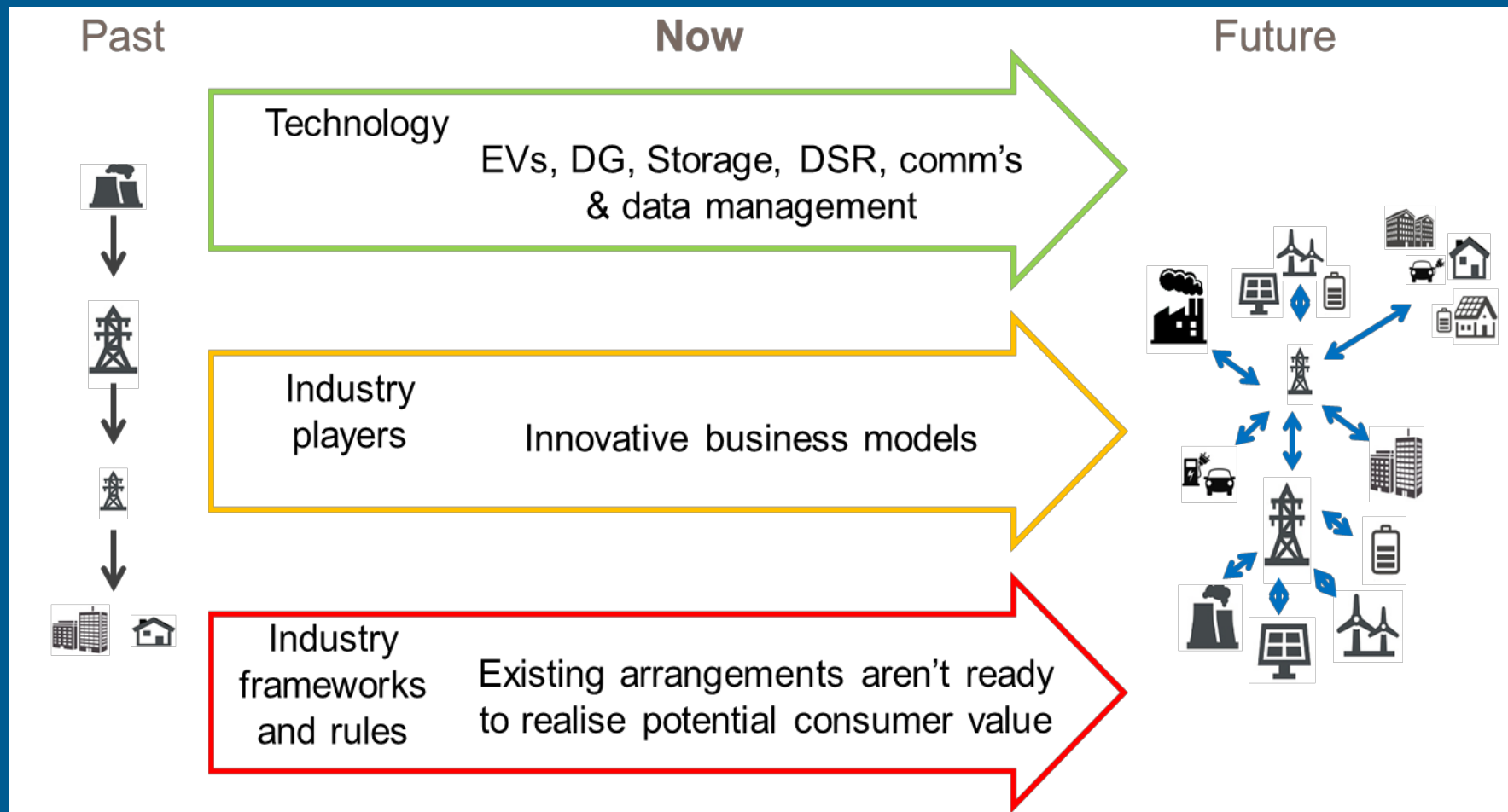
National Grid's Future Role of SO Programme & Whole System Development



ESN Annual Symposium 2017 – Good Services, Better Services
John West, National Grid

The Multi-Directional System

Decarbonisation, decentralisation, new technologies and business models are driving the transition to a multi-directional interactive system; electricity industry arrangements need to evolve to facilitate transition to the new model.



SOF 2016 – Key Messages

Generators and interconnectors will need to operate more flexibly, complimented by the growth of balancing tools and technologies such as energy storage and flexible demand.

Flexibility

A holistic approach which harnesses capabilities across energy and network resources is required to address the shortage of dynamic capabilities provided by synchronous generators.

Performance

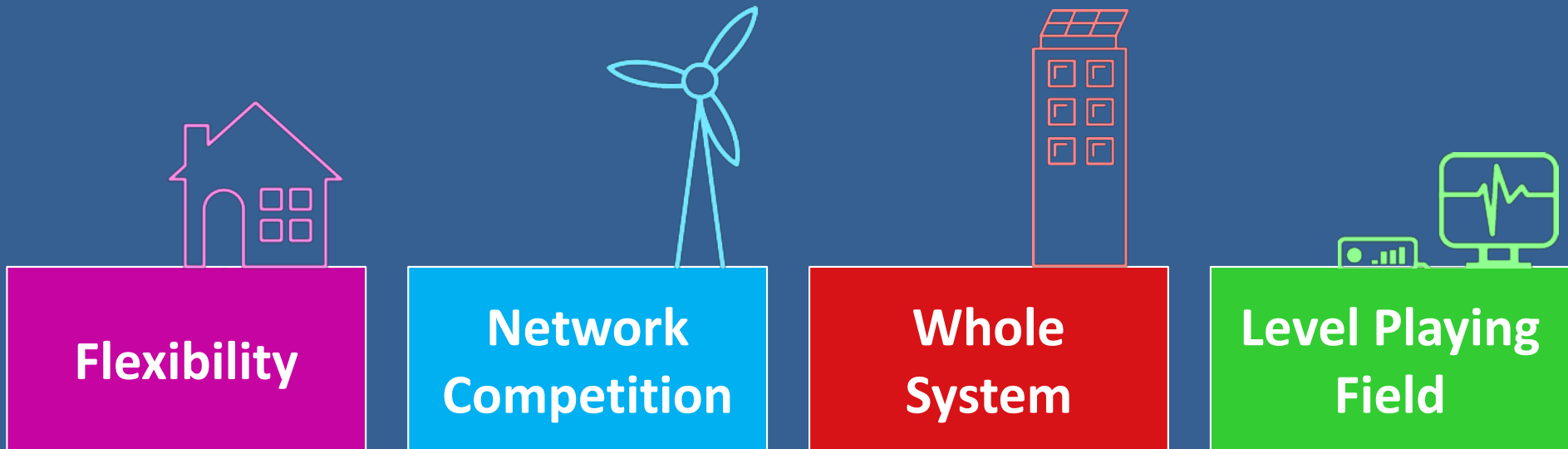
Small generators need to deliver the system support provided by the larger generators that they displace, though are not presently asked or rewarded for the same performance.

**Whole
System**

What are we *doing*?

Future Role of the System Operator Programme

Developing the role of the Electricity System Operator to play its part in facilitating the transition to a low carbon, interactive industry model whilst minimising costs and maintaining security of supply





**Level Playing
Field**



Flexibility

Future Role of SO

- Greater Independence

Ofgem is consulting on the role of SO. As a separate National Grid entity, the SO:

- would take a more neutral role in resolving challenges
- look to promote new solutions (inc Flexibility & Whole System)
- interact with the E&W onshore TO in the same way as the Scottish TO's



**Network
Competition**

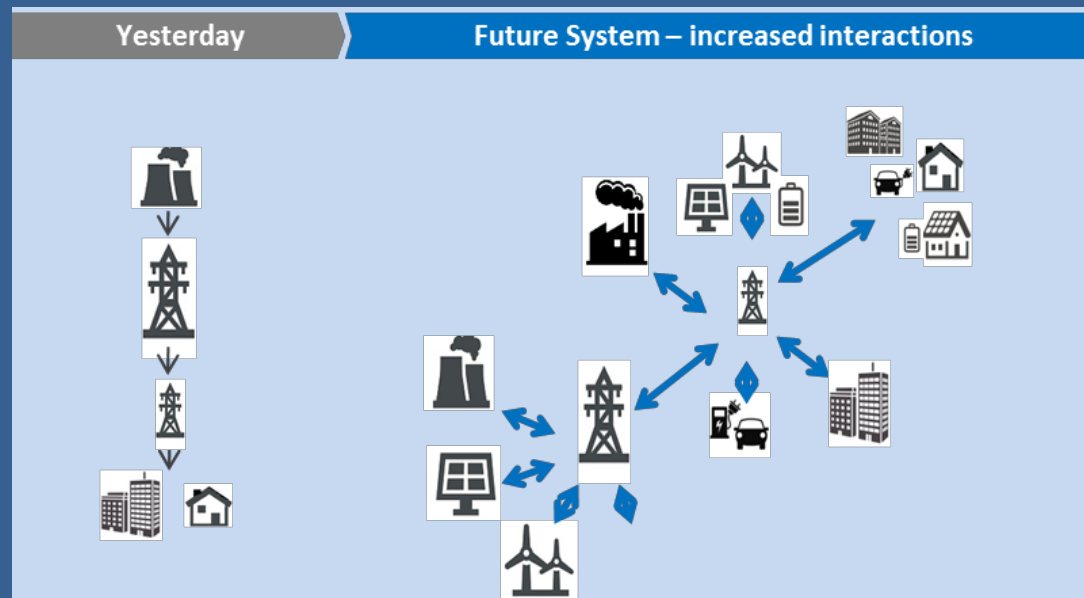


**Whole
System**

FRSO Flexibility Programme



Flexibility



Four areas of delivery

Information
Provision

Shared
services
framework

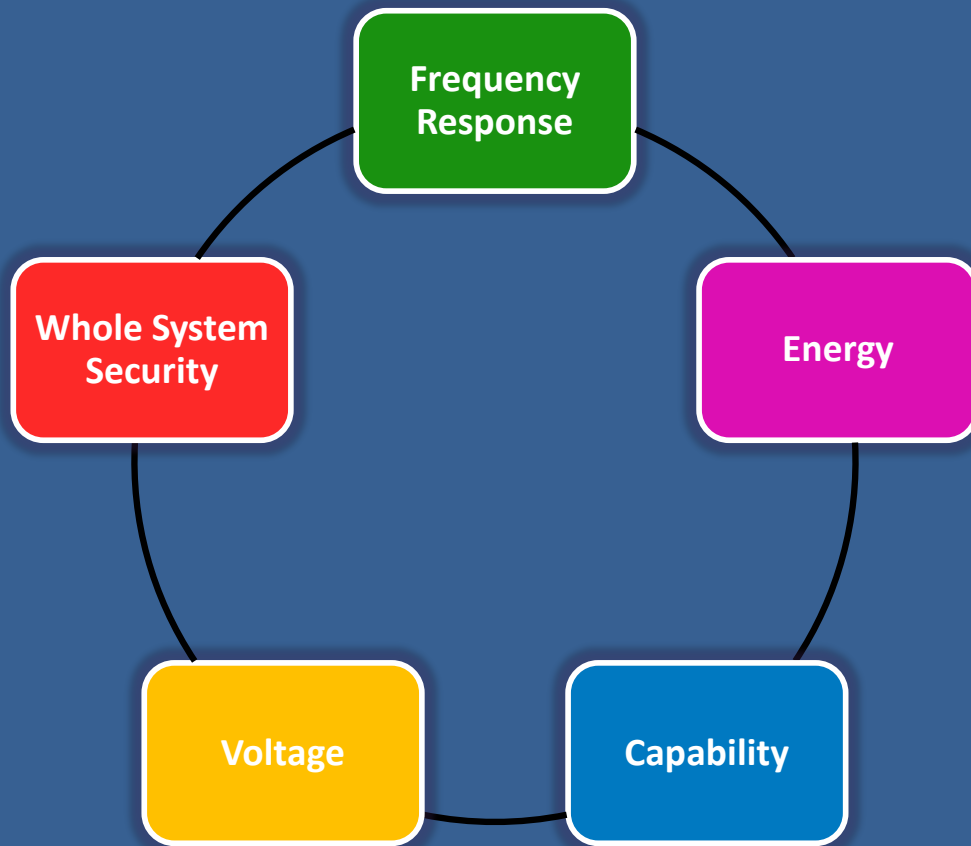
Simplify
products

Structural
market
change

Proposed Markets & Timeline



Flexibility



Develop market models & identify detailed action plan
• Jan 2017

Agree markets and approach internally
• Feb 2017

Publish Future Operability Strategy report
• Mar 2017

Develop frequency response service elements
• Mar-Jun 2017

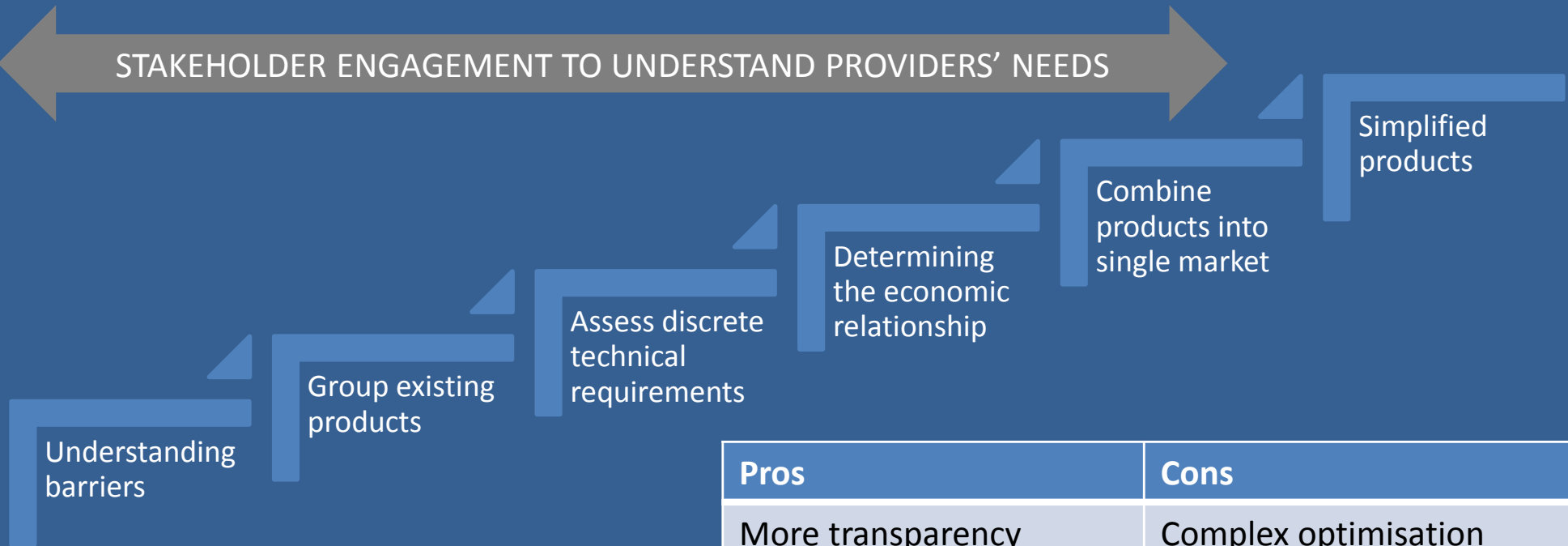
Revised market tender for response services
• Jul 2017

Simplification of Products



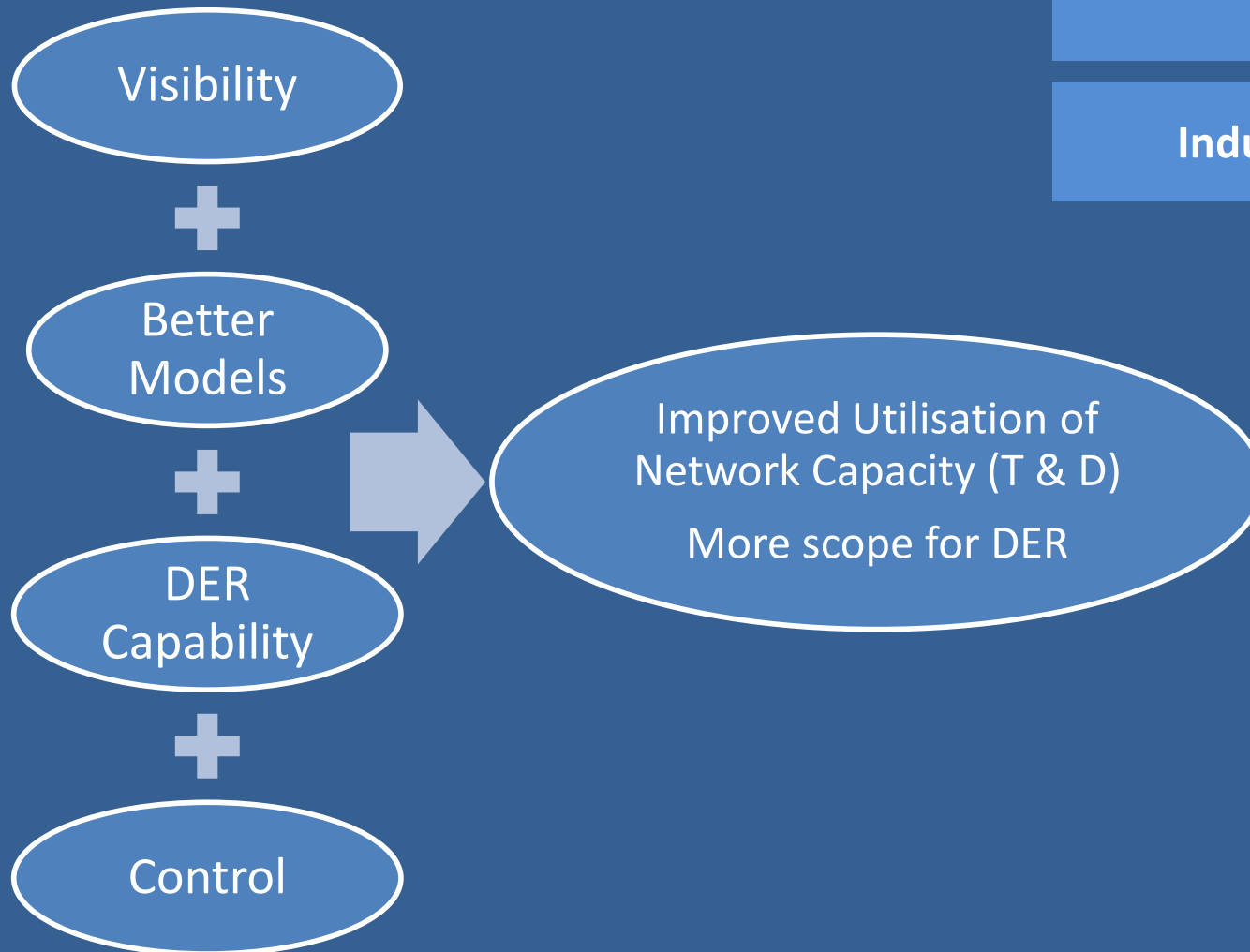
Flexibility

STAKEHOLDER ENGAGEMENT TO UNDERSTAND PROVIDERS' NEEDS



Pros	Cons
More transparency	Complex optimisation
Increased competition by combining products	Increased complexity in determining volume req'ts
Reduced barriers to entry	Development of EBS
Consumer value through economic contracting	May reduce flexibility of existing products

Establishing a Whole System Approach



Regional Development Programmes

Cross industry process development

Industry engagement



Whole System

Whole System will enable Network & Market Access

Regional Programmes – Design by Doing

UKPN

WPD



Cross-Industry Process Development

Network Development

Network Operation

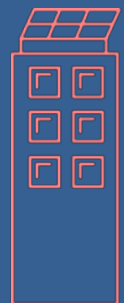
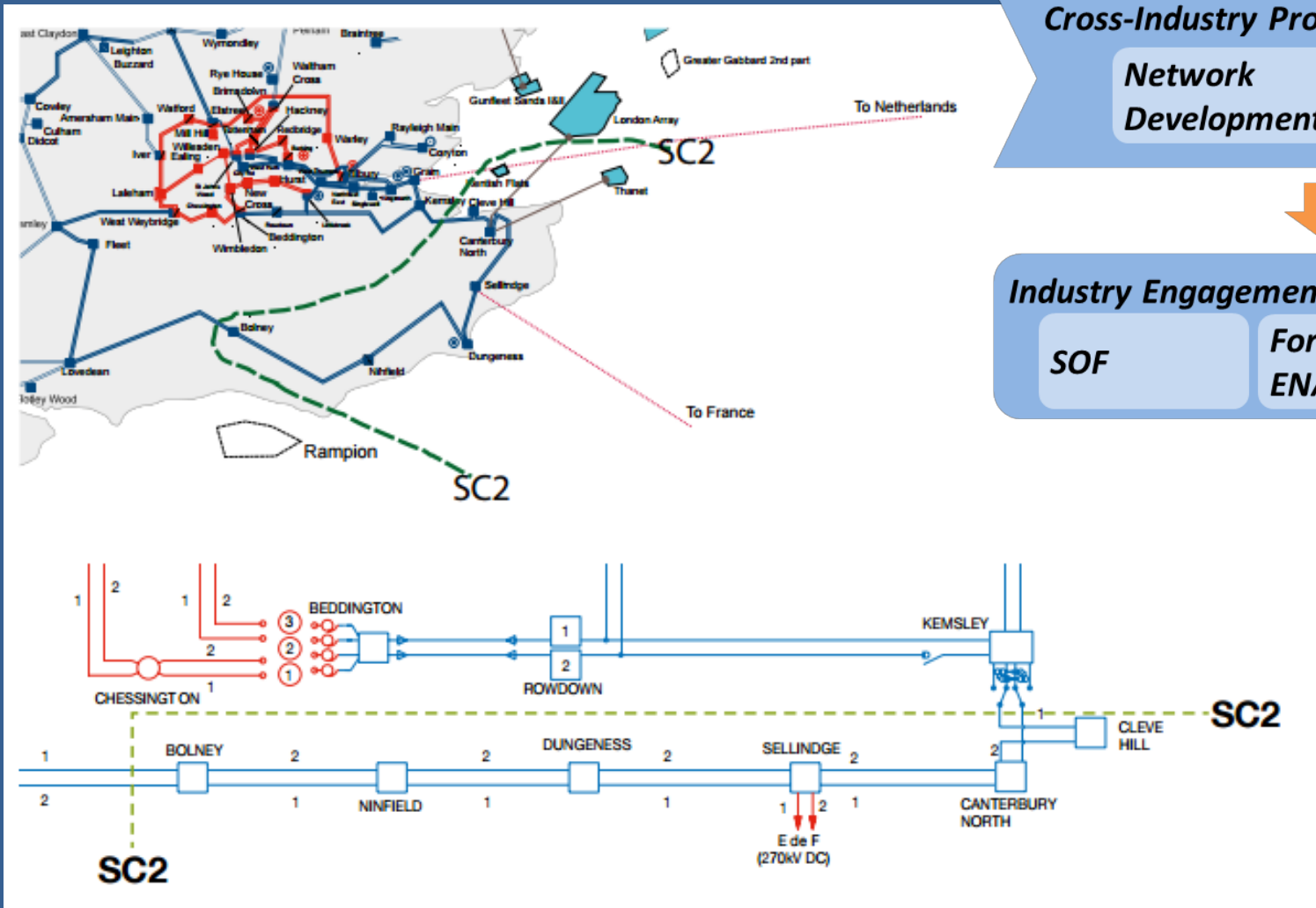


Industry Engagement

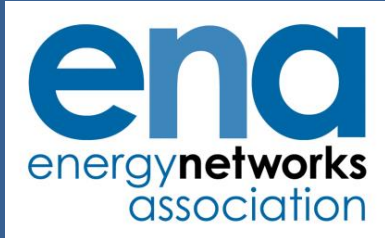
SOF

Forums,
ENA

Decision
Governance



Whole System



ENA TSO-DSO Work Programme

Key T-D Processes

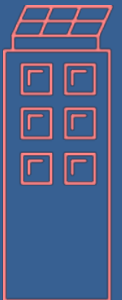
- Connection
- Shared Services
- Active Network Management
- Others

Customer Experience

- Getting connection
- Providing services

DNO to DSO

- Potential DSO Models
- Potential organisational impacts



**Whole
System**

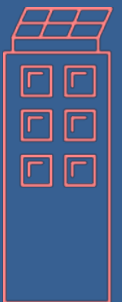
Next Steps



Flexibility

- ENA TSO-DSO Project Seminars
 - 15th Feb London, 22nd Feb Glasgow
- Power Responsive Steering Group – 13th March
- Future Operability Strategy – March

- ENA TSO-DSO Project Updates – June
- Frequency Response Market Tender – July
- Whole System Regional Strategies – Sept & Nov
- Whole System Process Proposals – Sept 17 to March 18



**Whole
System**