

Session One

**Ian Marlee, Senior Partner,
Smarter Grids and Governance**

26/06/13

ofgem

Workshop Welcome

**Ian Marlee, Senior Partner,
Smarter Grids and Governance**

26/06/13

Overview of ITPR

Charlotte Ramsay
26/06/13

Review of Great Britain electricity transmission arrangements

SYSTEM
PLANNING:

Ensuring transmission parties are best placed to coordinate in the planning of the network

DELIVERY OF
INVESTMENT:

Ensuring regulatory regimes can enable delivery of an efficient and coordinated network.

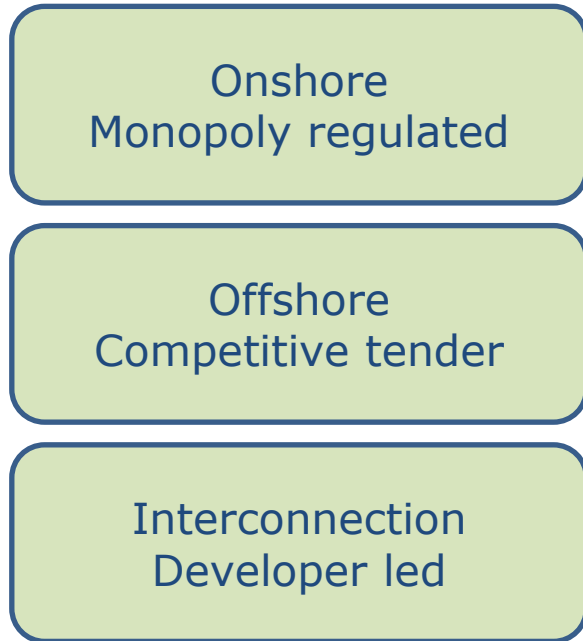


Long-term perspective

All transmission onshore, offshore and cross border in scope

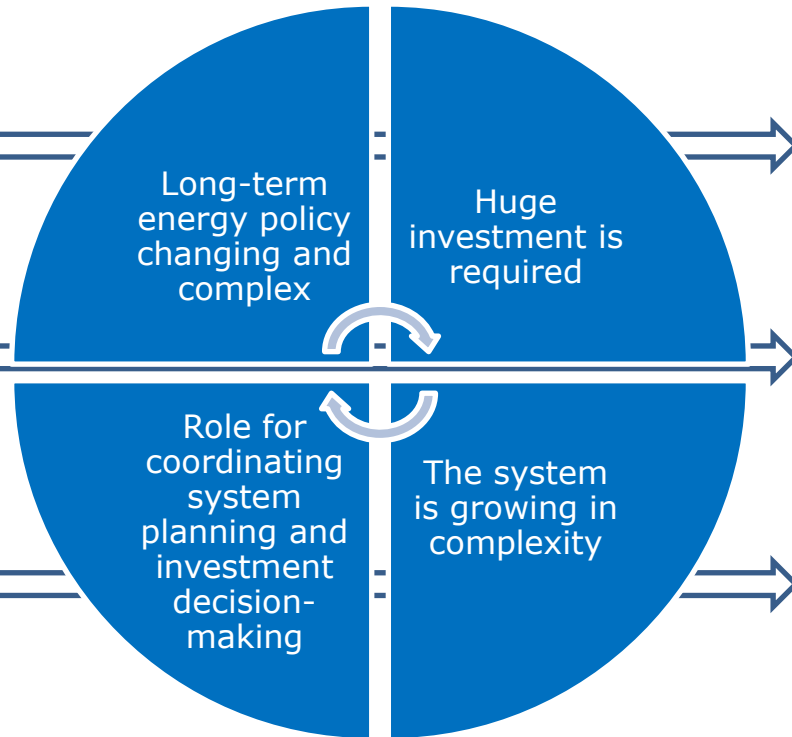
Why ITPR?

Currently



Three successful regimes

Continuing to be improved -
RIIO, offshore coordination,
interconnector cap and floor.



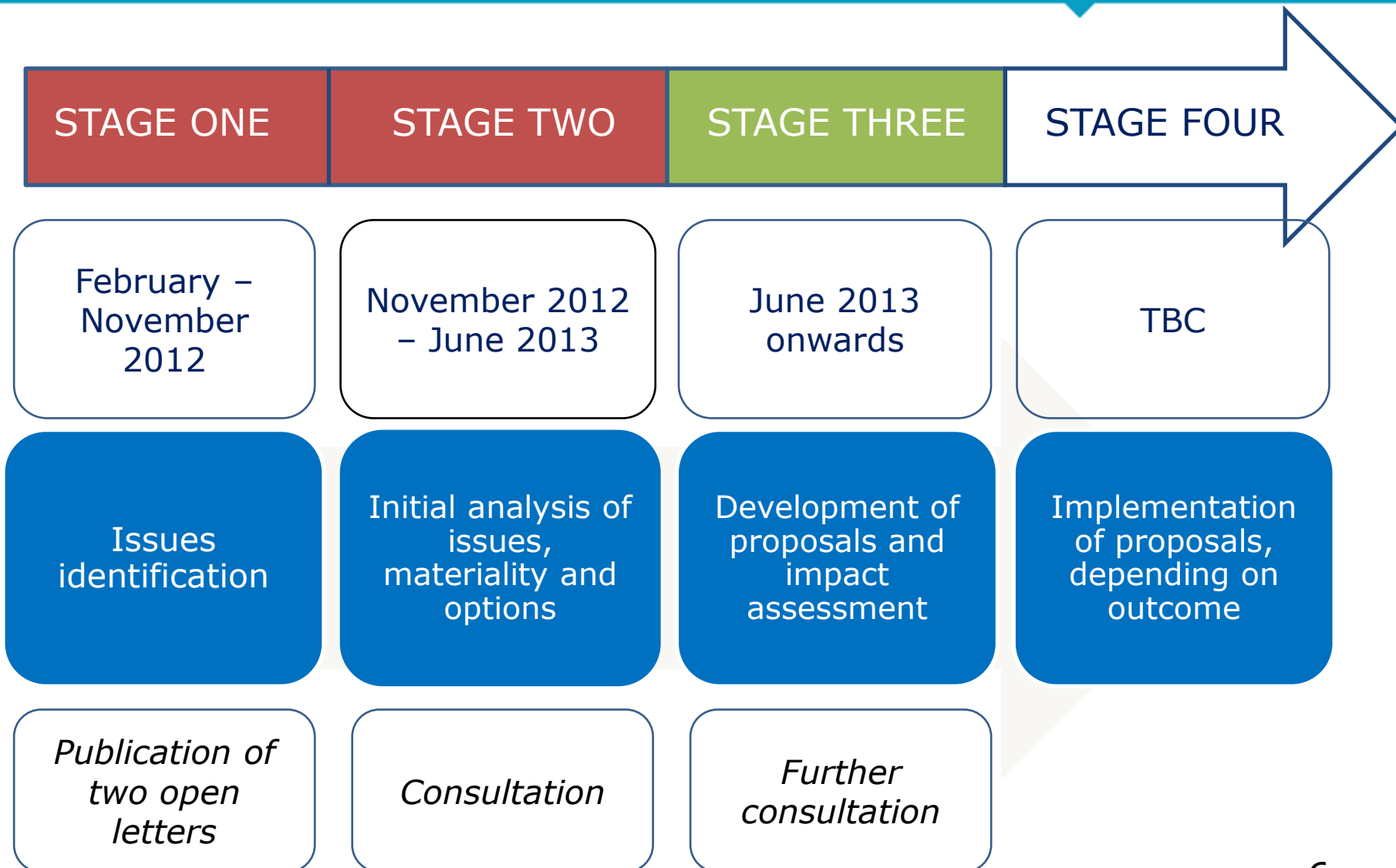
Uncertainty in scale,
timing, cost and
technical complexity of
developments

Future



Efficient,
economic and
coordinated
investment for
the longer term.

Project progress and timelines



Issues and options

Potential issues with current arrangements

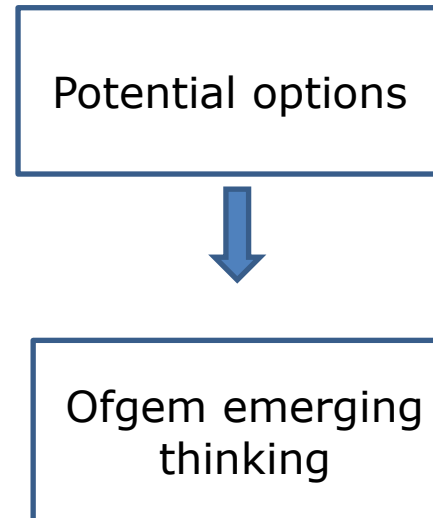
#1 Conflicting obligations and incentives on multiple transmission parties

#2 Lack of GB view to influence European transmission investment plans

#3 Perceived conflicts of interest between regulated and competitive businesses

#4 No clear regime for complex, multiple-purpose projects

How could these be addressed?



Focus of today's workshop

Informing you on these options
Getting your views

ITPR and other initiatives

RIIO and
strategic
wider
works

Future
Trading
Arrangements
Design

Renewables
Trading

Offshore
coordination

Inter-
connector
cap and
floor
regime

ITPR

North Seas
Countries
Offshore
Grid
Initiative

Electricity
Market
Reform

SO
incentives

Interaction with Offshore coordination project

Jon Parker
26/06/13

Ofgem policy development on coordinated offshore networks

- Joint Ofgem-DECC Coordination Project during 2011/12, looking at:
 - Benefits, costs and risks to coordination
 - Potential barriers where it is efficient, including considering system planning arrangements and OFTO tender process
- Ofgem consultations in March and December 2012 setting out possible changes to the OFTO regime
- We will be publishing a further policy statement shortly, with some further consultation planned later in the year

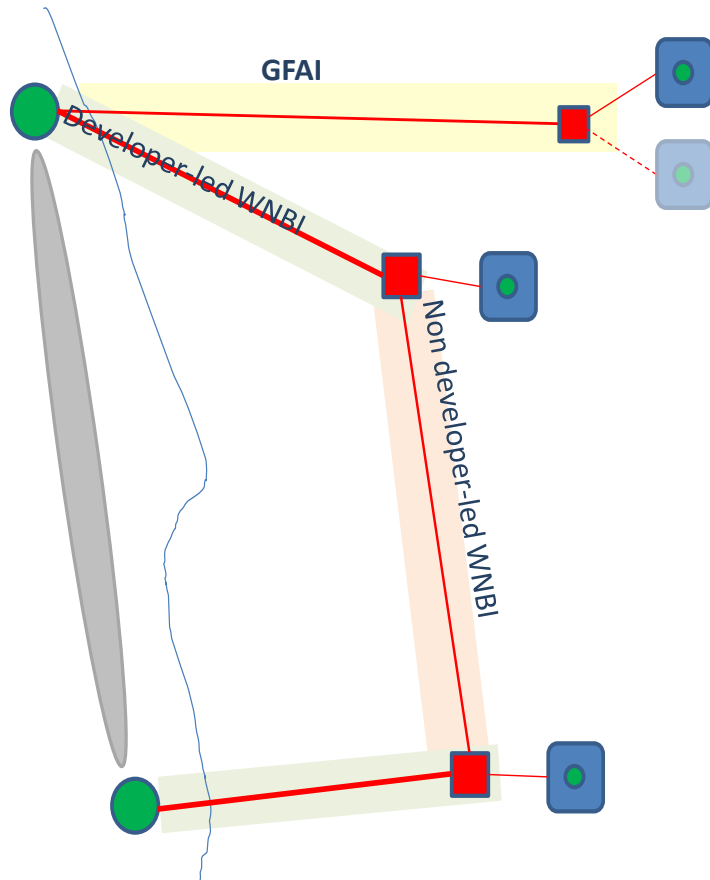


Fit with ITPR

- Coordination work is focused on providing an enabling framework, with an aim of being able to support nearer-term projects
- It builds on existing system planning arrangements and works within the existing OFTO process
- ITPR is taking a more holistic and longer-term view at system planning arrangements and the three separate delivery regimes
- We consider that the emerging thinking contained in the consultation is consistent with the coordination proposals



Ofgem proposals on coordinated offshore networks



Category 1: Generator-Focused Anticipatory Investment (GFAI)

-> changes needed to user commitment rules

Category 2: Developer-led Wider Network Benefit Investment (Developer-led WNBI)

-> Ofgem gateways to provide early view on needs case

Category 3: Non developer-led WNBI

-> potential new route for TOs to bid for pre-construction funding

ITPR: Review of System Planning and Delivery

Drivers for change

Michael Pollitt

**Goran Strbac, Michael Pollitt, David Newberry,
Richard Green, Christos Vasilakos Konstantinidis,
Rodrigo Moreno, Ioannis Konstantelos**

26 June 2013

Context: Scale of future investment

- *Unprecedented scale* of expected investment in on- and offshore transmission and interconnection
- *Significant uncertainty* in level, location and timing of connection of new generation

	Current value (£bn)	Expected Investment (£bn)
Onshore	8.4	6.2 – 12.4
Offshore	2.5	8 - 20
Interconnection	2	8 - 20

- ***Key question: will transmission investment be efficient?***

Project Scope

Planning: Will the current arrangements deliver an optimum level of transmission that will maximise the GB social welfare? And

Delivery: Will this investment be undertaken in an efficient manner and delivered at minimum cost?

Options: If not, what are the options for improvement of the present regimes?

Status Quo unlikely to deliver efficient investment

Lack of efficient market design and network pricing/1

- Market design and network pricing in GB are inherently inefficient due to largely socialized network (balancing and transmission tariffs) pricing. This in turn results to:
 - Inefficient generation dispatch and siting
 - Eliminates network users' incentives to actively engage with the transmission investment process.
 - Inefficient transmission investment, preventing adoption of innovative non-network solutions which elevates consumer costs and leads to significant welfare losses
- Commercial interest of incumbent TOs (based on RAV business model) are potentially aligned with inefficient investment
- Ofgem/DECC as the buyer of network service on behalf of all users and consumers, needs to ensure investment efficiency
 - This requires in-depth scrutiny of investment plans and full understanding of detailed technical and economic aspects of transmission network planning and operation that is clearly beyond the remit of a regulators setup.

Lack of efficient market design and network pricing/2

- Co-existence of merchant and regulated investment (across regimes) cannot be effectively facilitated when efficient transmission pricing is not place:
 - Merchant investments would be viewed as too risky given that their revenues could be eroded if a mandated project (regulated investment) whose costs are to a large degree socialised is built
 - Very high option value to wait for regulated investments to take place (and only pay a fraction of the costs) rather than sponsor merchant projects.
- With efficient transmission pricing the differences across the three regimes (onshore, offshore and interconnector) would be automatically eliminated automatically creating an effective framework for the development of multi-purpose projects (MPPs)
- Given the absence of efficient market design, we identify three key areas of concern with the current transmission investment arrangements:
 - A mis-aligned incentives framework for transmission investment and operation
 - Lack of coordination of investment and operation
 - Conflicts of interest

Incentives framework for transmission investment and operation

- ***Do current incentives ensure that transmission investments are necessary?***
 - Concerns with efficiency of system operation, due to lack of price signals, potentially leading to inefficient transmission investment
 - Bias towards asset heavy solutions; advanced operational measures to enhance the capability of existing network assets not extensively used
 - Present regulatory framework unable to ensure that network delivers good value for money to network users (operation and design standards do not consider/quantify this value); network underutilized, increased constraint costs in the short term leading to inefficient investment in long term
 - Concerns with role of Ofgem / DECC acting as a buyer of transmission services; problematic as the complexity of network solutions will increase significantly

Lack of co-ordination /1

- **TO/NETSO co-ordination:** lack of co-ordination between TOs leading to increase in network constraint costs in the short term and inefficient investment in long term
- **Co-ordination across regimes:** concerns regarding the ability of multi-parties (onshore and offshore TOs, interconnectors, developers of offshore generation and multiple purpose project developers) to coordinate and deliver efficient investment for GB
 - (1) Capacity allocation
 - (2) Investment cost recovery and charging
 - (3) Risk allocation
 - (4) Business model

Lack of co-ordination /2

- **Coordination in meeting existing and future users needs:** limited anticipatory investment framework
- **Regional coordination of network investment:** concerns that there is limited scope of parties delivering cross-border investment to facilitate:
 - Integration of EU balancing markets
 - Generation outside GB to participate in GB capacity market
 - Efficient implementation of EU Renewable Energy Directive
- **Without appropriate market signals, facilitating and/or scrutinizing co-ordinated investments will be increasingly difficult task for Ofgem**

Conflicts of Interest

- Conflicts involving competitive / incumbent businesses
- Conflicts among TOs
- Conflicts arising from asymmetry in access to information
- EMR contract design and transmission planning conflicts
- Conflicts of interest combined with lack of information and increasing complexity make Ofgem/DECC task, as a buyer of transmission services, increasingly difficult.

ITPR: Review of System Planning and Delivery

Options for Future Development

Goran Strbac

Goran Strbac, Michael Pollitt, David Newberry,
Richard Green, Christos Vasilakos Konstantinidis,
Rodrigo Moreno, Ioannis Konstantelos

26 June 2013

Alternative Transmission Regimes: International Experience

TSO

ISO

**Incumbent
Delivery**

- Europe
- New Zealand

***Onshore
England & Wales***

- PJM
- **Australia:** All states except Victoria

***Onshore
Scotland***

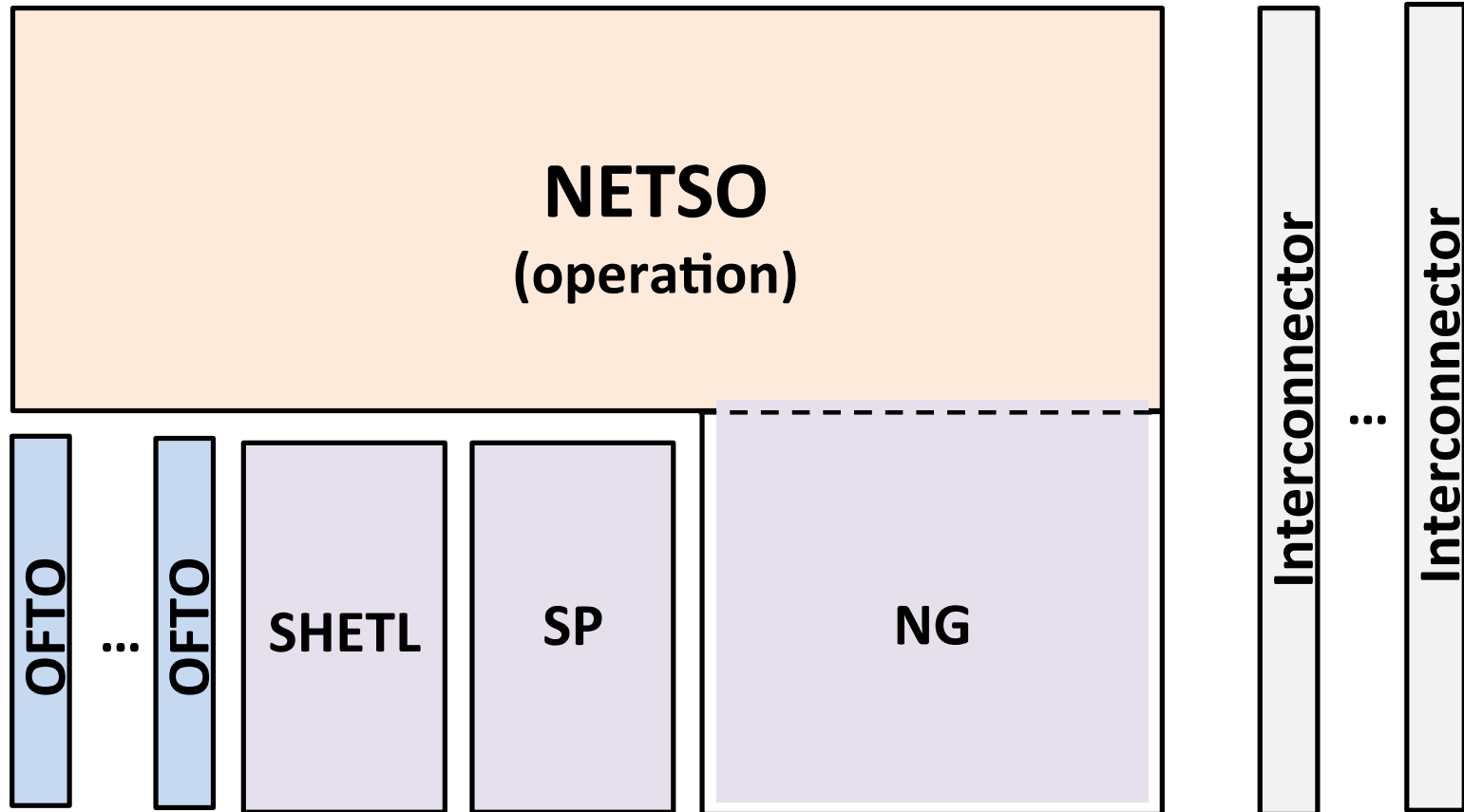
**Competitive
Delivery/Merchant**

N/A

- **Latin America:** Chile, Brazil, Argentina
- **US:** ERCOT CREZ, CAISO, NYISO, MISO
- **Australia:** Victoria

***GB Offshore
GB Interconnection***

Status Quo +



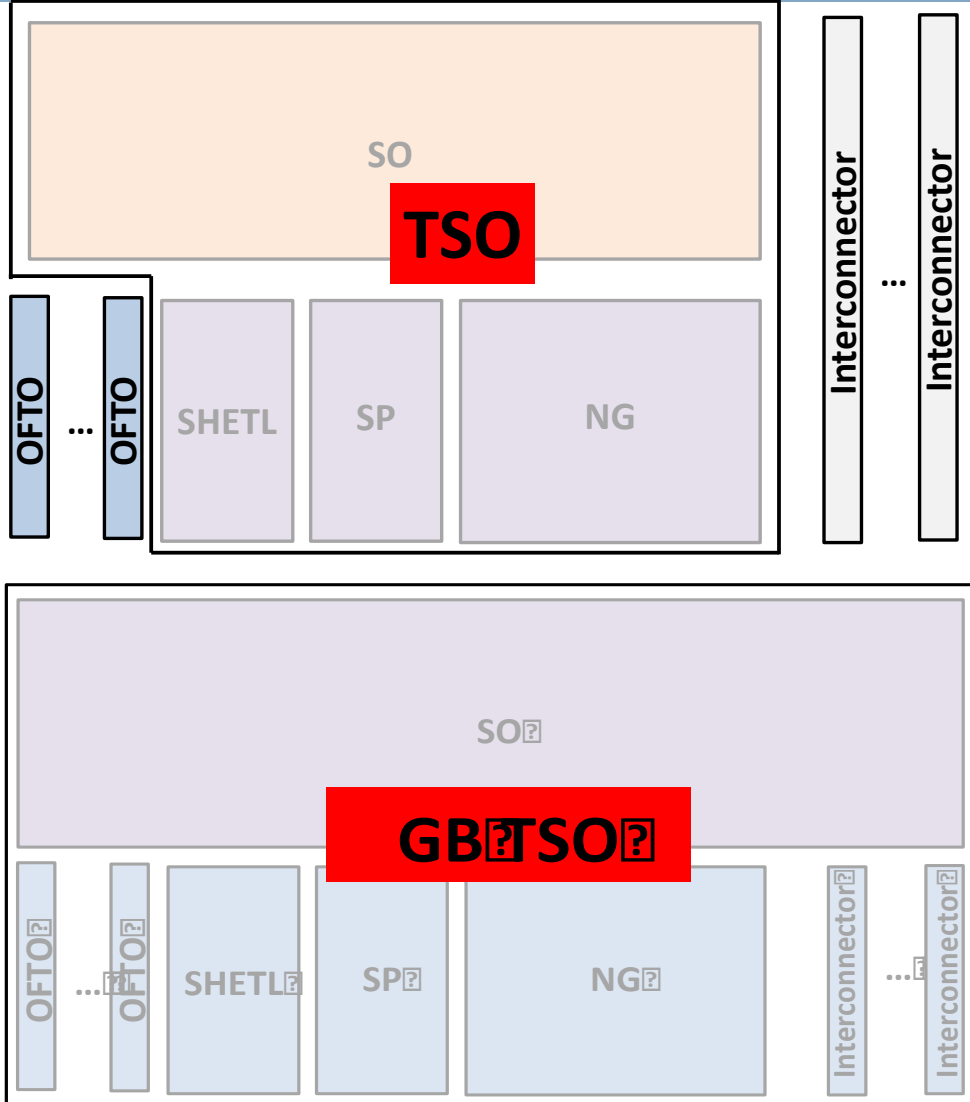
Shadow Independent Planning Authority

Improved Status Quo – Key Characteristics

Establish *shadow* Independent Design Authority:

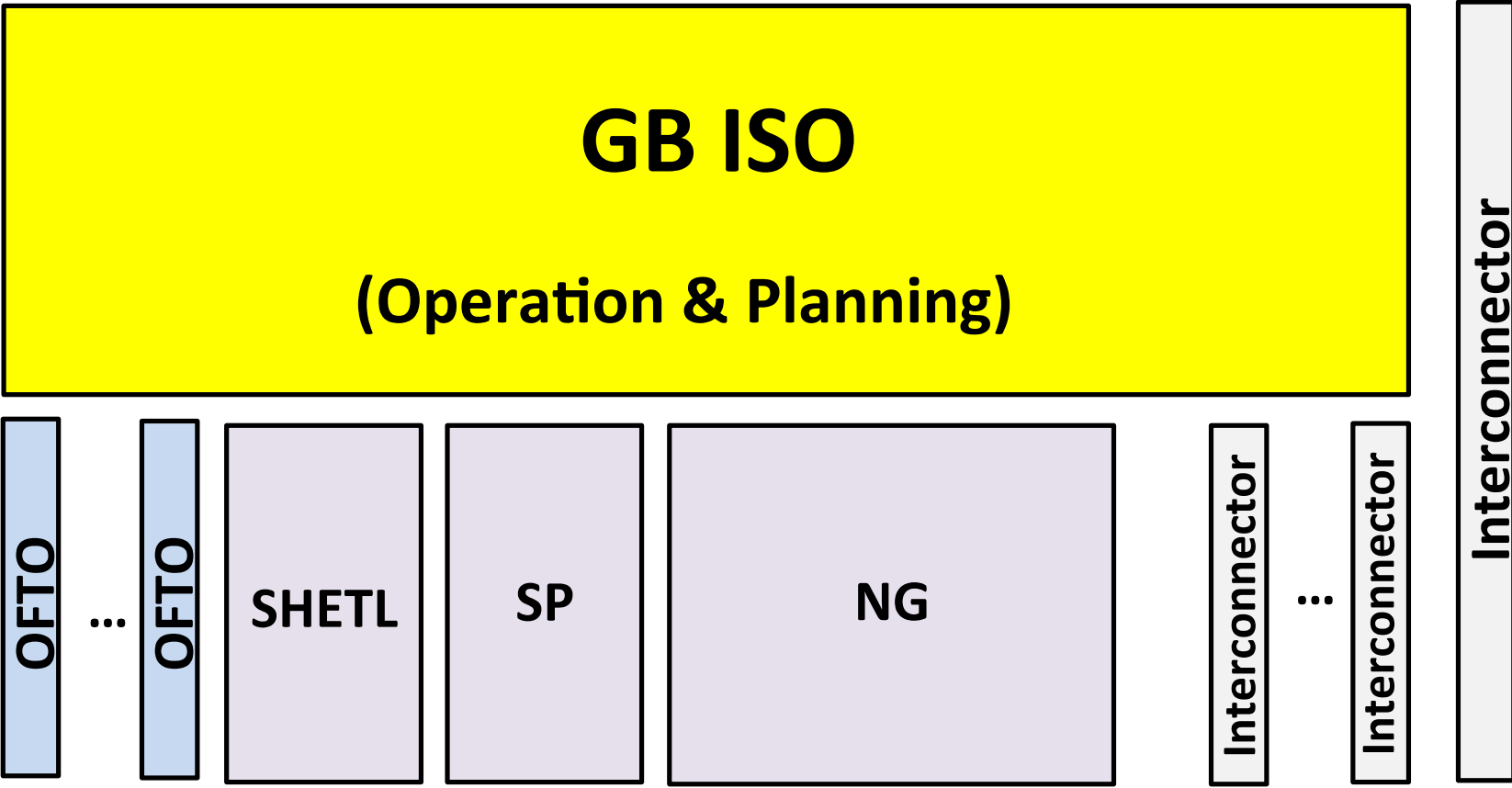
- Scrutinise onshore TOs' RIIO business plans.
- Make proposals for Strategic Wider Works.
- Establish full information transparency .
- Coordinating and preventing barriers to entry in the onshore and offshore regimes
- Administer the “golden rule” cost-benefit check for merchant interconnectors.
- Determining efficient capacity for regulated interconnectors.
- Support Ofgem in administering auctions for regulated interconnectors and offshore assets.
- Facilitating multi-purpose projects (MPP) planning process through a transparent CBA and supporting auctions for design and delivery

TSO Onshore / GB TSO



TSO Option – Key Characteristics

- **Establish GB TSO(s) responsible for planning, delivery and operation subject to Performance Based Regulation**
 - Single onshore TSO or GB TSO, coordinates GB planning and delivery + regional co-ordination
- **Ofgem to establish effective incentives framework (key challenge)**
 - *Efficient short and long term network pricing regimes to be established*
- **Supporting MPPs**
 - In case of single regime, GB TSO would be responsible for planning and delivering MPPs, while in case of three regimes, MPPs would be driven by efficient locational pricing and TSO incentives



ISO Option – Key Characteristics

- Establish a clear set of rules and grid codes and updated network standards;
- Facilitating transmission planning process through a transparent Cost Benefit Analysis (CBA), with stakeholder engagement regarding future scenarios
- Scheduling and co-ordinating transmission system outages;
- Offering connection agreements to market participants;
- Administering competitive tenders for the delivery of certain assets;
- Mandating incumbent TOs to undertake transmission investment;
- Co-ordinating with merchant offshore and cross-border project developers, ensuring that these investments are $NPV > 0$;
- Administering BSUoS and TNUoS cost recovery and payments;
- Co-ordinating development of MPPs and EU regional development
- Administering Network Innovation Competitions (NIC);
- Supporting Ofgem/DECC with market design and regulation;
- Administering EMR and in particular the design of CfD contracts and capacity market.

Addressing Current Regime Concerns

	Status Quo+	GB ISO	GB TSO
Incentives framework <ul style="list-style-type: none"> efficient transmission investment and operation 			
Lack of co-ordination <ul style="list-style-type: none"> TO/NETSO Across regimes Meeting existing and future users needs Regional coordination of network investment 			
Conflicts of Interest <ul style="list-style-type: none"> Competitive / incumbent businesses Asymmetry in access to information Planning and operation EMR 			

Key Strengths and Weaknesses

	Status Quo+	GB TSO	GB ISO
Key Strengths	<ul style="list-style-type: none"> • Minimum change focused on improving current regimes • Optionality to reconsider as more evidence emerges 	<ul style="list-style-type: none"> • Theoretically optimum option • Synergies from combining SO and TO functions, particularly in asset operability and flexibility assessment • Integrated design delivery and operation • Low transaction costs • Preferred practice in Europe 	<ul style="list-style-type: none"> • Resolves most current concerns: implements efficient system operation, removes conflicts of interest, provides effective coordination across regimes and within the region • ISO can promote future market design improvements • Could facilitate efficient planning and delivery and lead more active stakeholder engagement
Key Weaknesses	<ul style="list-style-type: none"> • Regulation heavy • Key concerns unresolved 	<ul style="list-style-type: none"> • Concepts about the development of PBR • Asset divestments required • Efficient transmission pricing is a pre-requisite • Over-reliance on a single entity 	<ul style="list-style-type: none"> • In the case of a deep ISO, single worldview • Effective governance, grid codes and rules need to guide ISO • SO to TO contracts potentially difficult to define

Recommendations

- Given the very strong assumptions under which the **GB TSO** option would work in practice we consider that this option **could not be implemented in the short to medium term**
- **ISO option resolves** effectively the majority of the **current regime concerns**
- Most of the **criticisms of the ISO structure can be addressed with appropriate grid codes, rules and processes** and there is **significant international experience** to draw upon
- **Under the Status Quo+** a number of the identified **concerns would remain largely unresolved** - could be considered to be a **viable interim solution** for the ISO option
- Deciding between the Status Quo+ and ISO options would require a detailed impact assessment

Session Two

Charlotte Ramsay, Project Director, ITPR
26/06/13

ofgem

Analysis and emerging thinking on system planning and delivery of transmission assets

Laura Edwards & Pete Wightman
26/06/13

System Planning

Laura Edwards
26/06/13

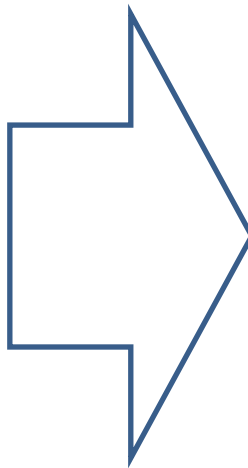
System planning - current arrangements and potential future challenges

Planning frameworks under each regime have been successful to date

Onshore
TO-led

Offshore
Generators drive planning
of connections

Interconnection
Interconnector developers
lead planning

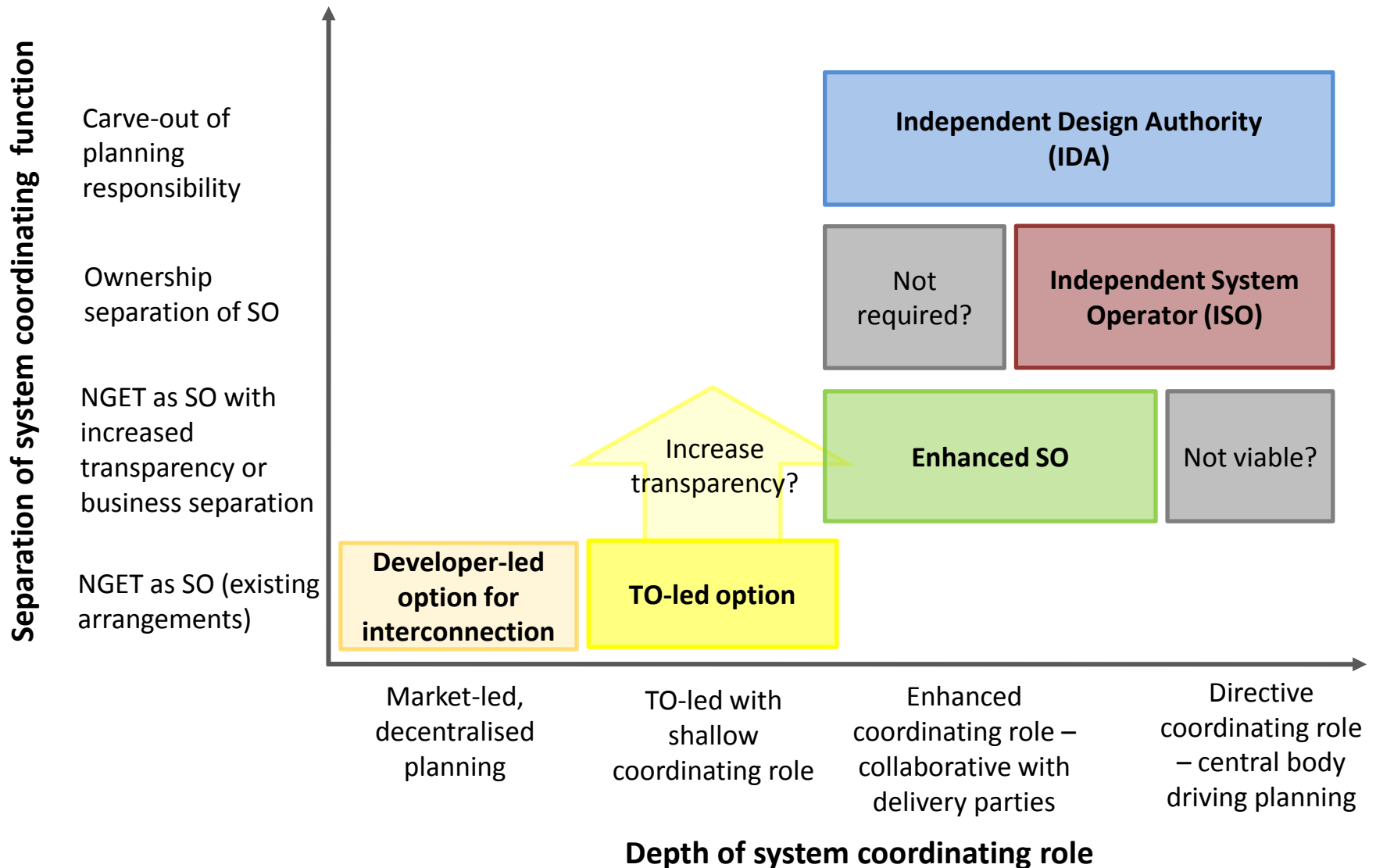


Future challenges

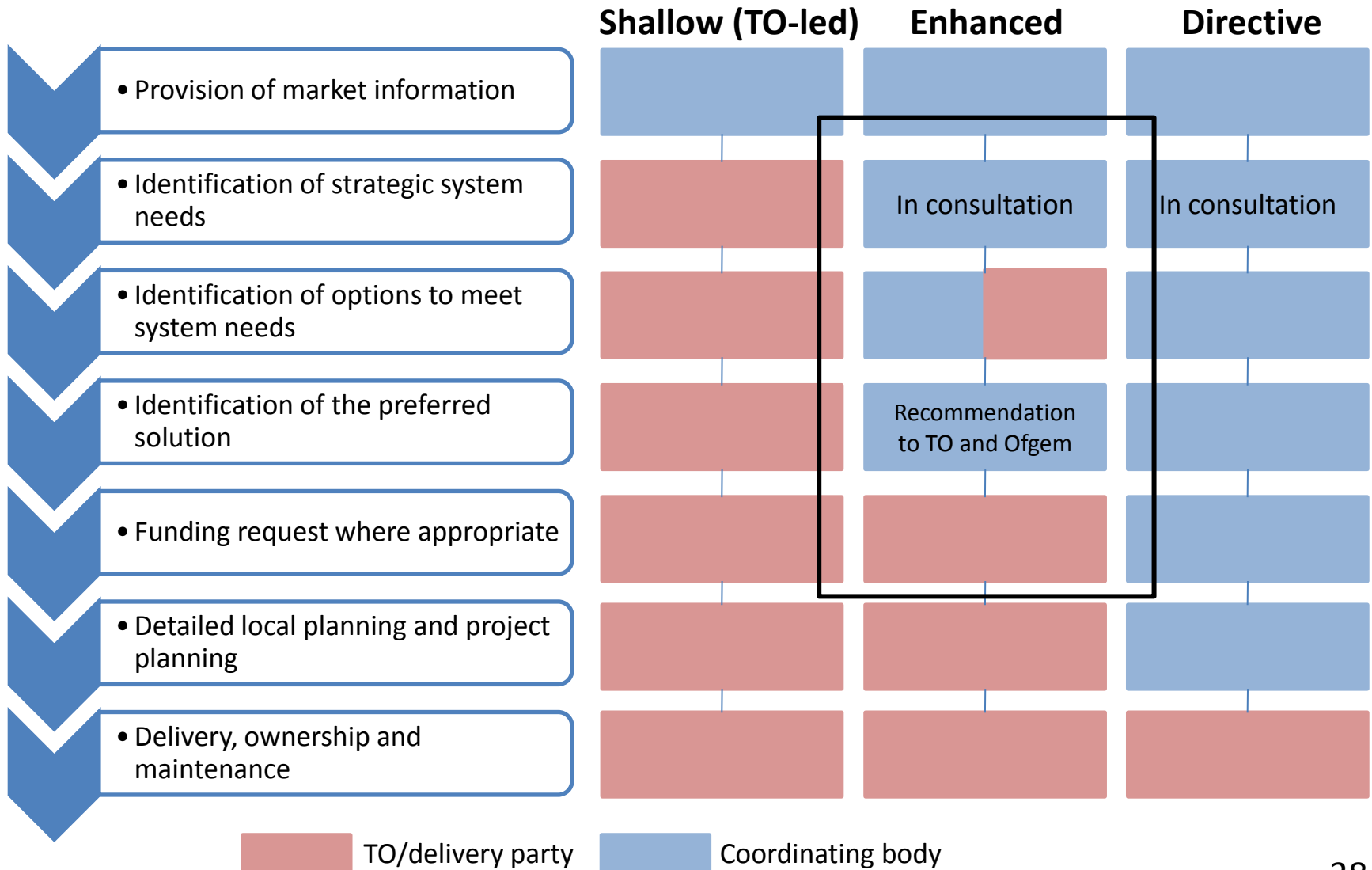
- Significant new investment required
- Potential efficient network solutions may be increasingly multiple-purpose, interdependent and anticipatory (with uncertain drivers)
- There is a separate planning framework under each regime
- The regulatory framework requires case by case consideration by the Authority

We consider these characteristics of the current system planning framework may not be fully aligned to support the potential scale, timing and technical complexity of investment required in the longer-term

System planning – policy options

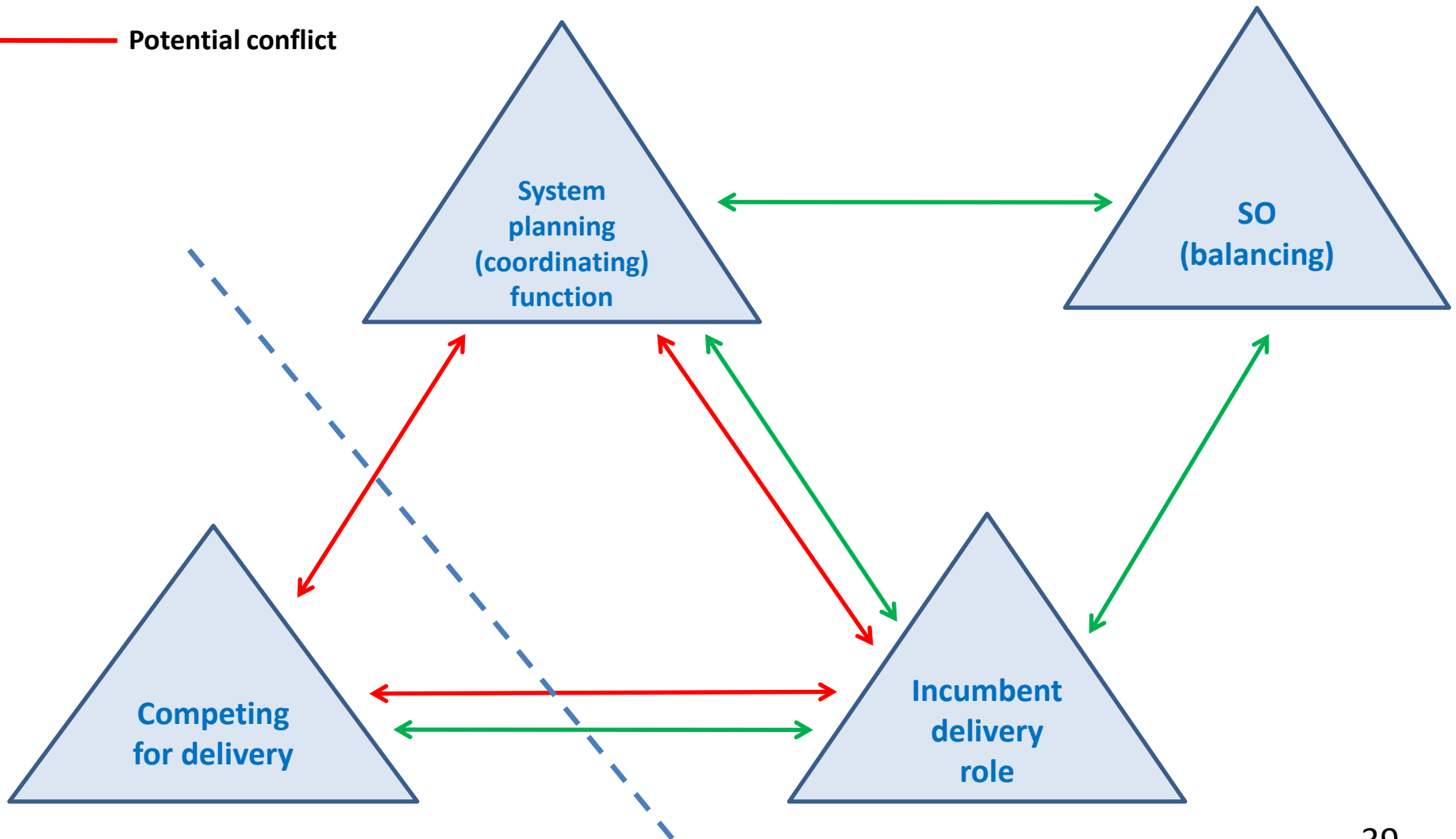


Analysis of 'depth' options – illustrative process for strategic investments

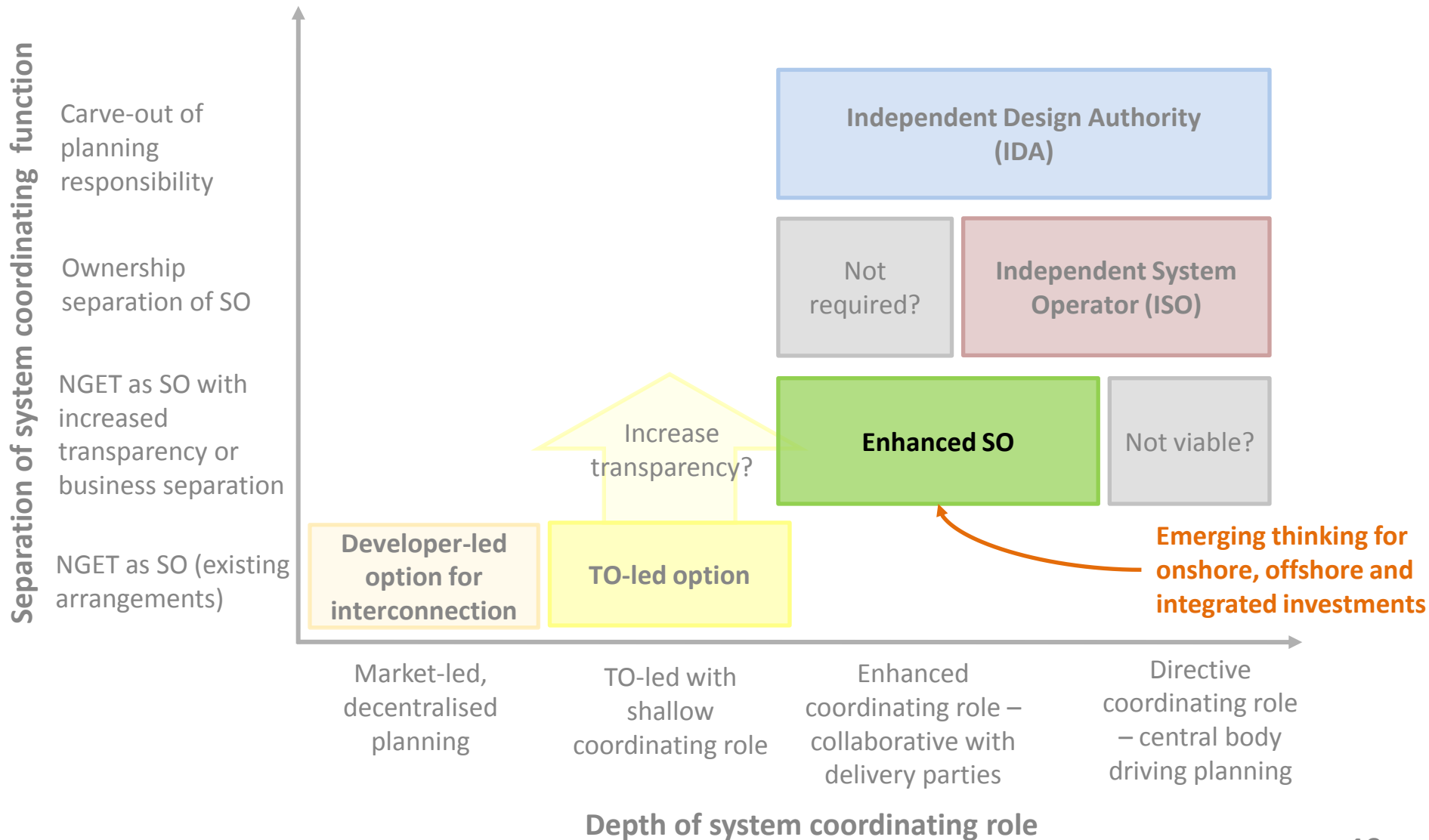


— Synergy

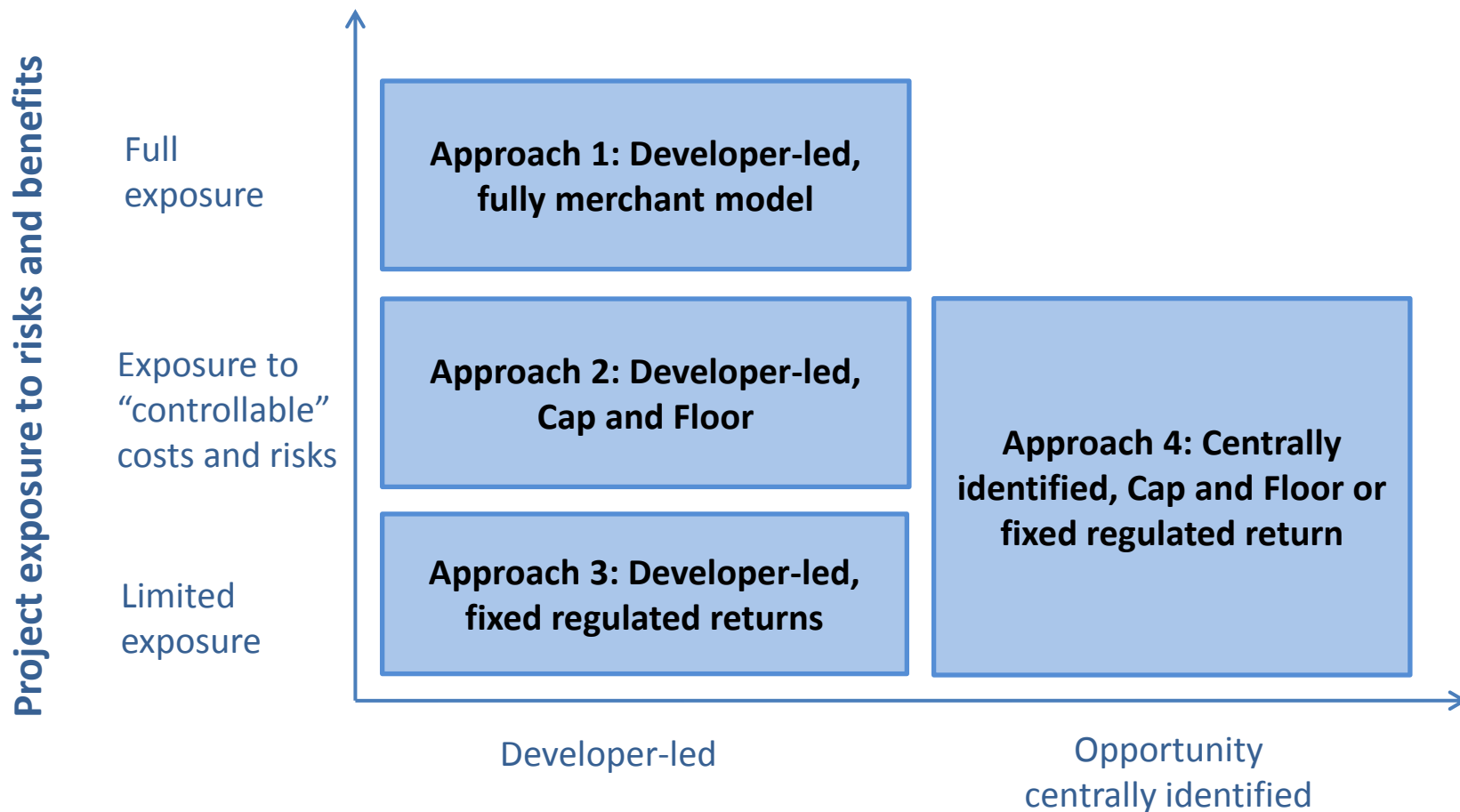
— Potential conflict



System planning – emerging thinking



Application to future interconnection?



Planning framework

Asset Delivery

Pete Wightman
26/06/13

- ITPR delivery is reviewing the development, regulation, and ownership of GB and cross border transmission assets
- The current onshore, offshore and interconnection regimes have been successful to date, and include ongoing improvements
- Two key drivers are leading us towards this review:

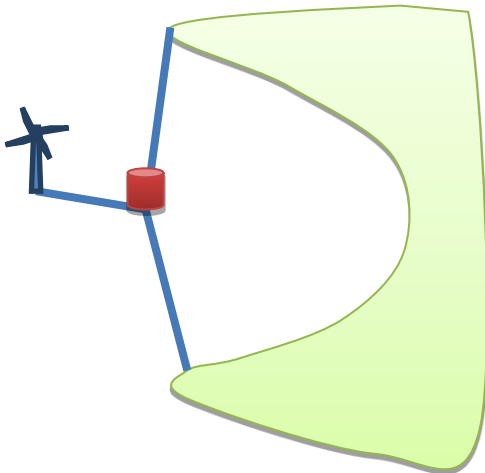
Opportunity to review whether the most suitable delivery practices (e.g. incumbent or competitive delivery) are applied in different circumstances

Future economic and efficient networks may include integrated transmission developments, such as multiple purpose projects

Regulatory Challenges of Integrated Projects

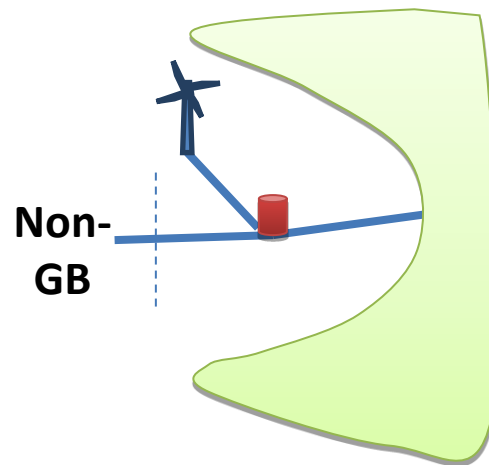
Scenario 1

Asset providing wider reinforcements to the network, while transmitting offshore generation



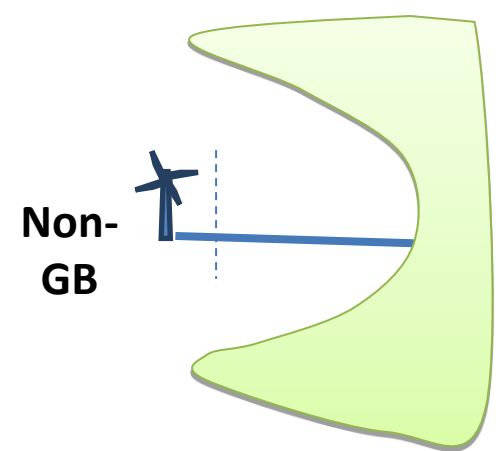
Scenario 2

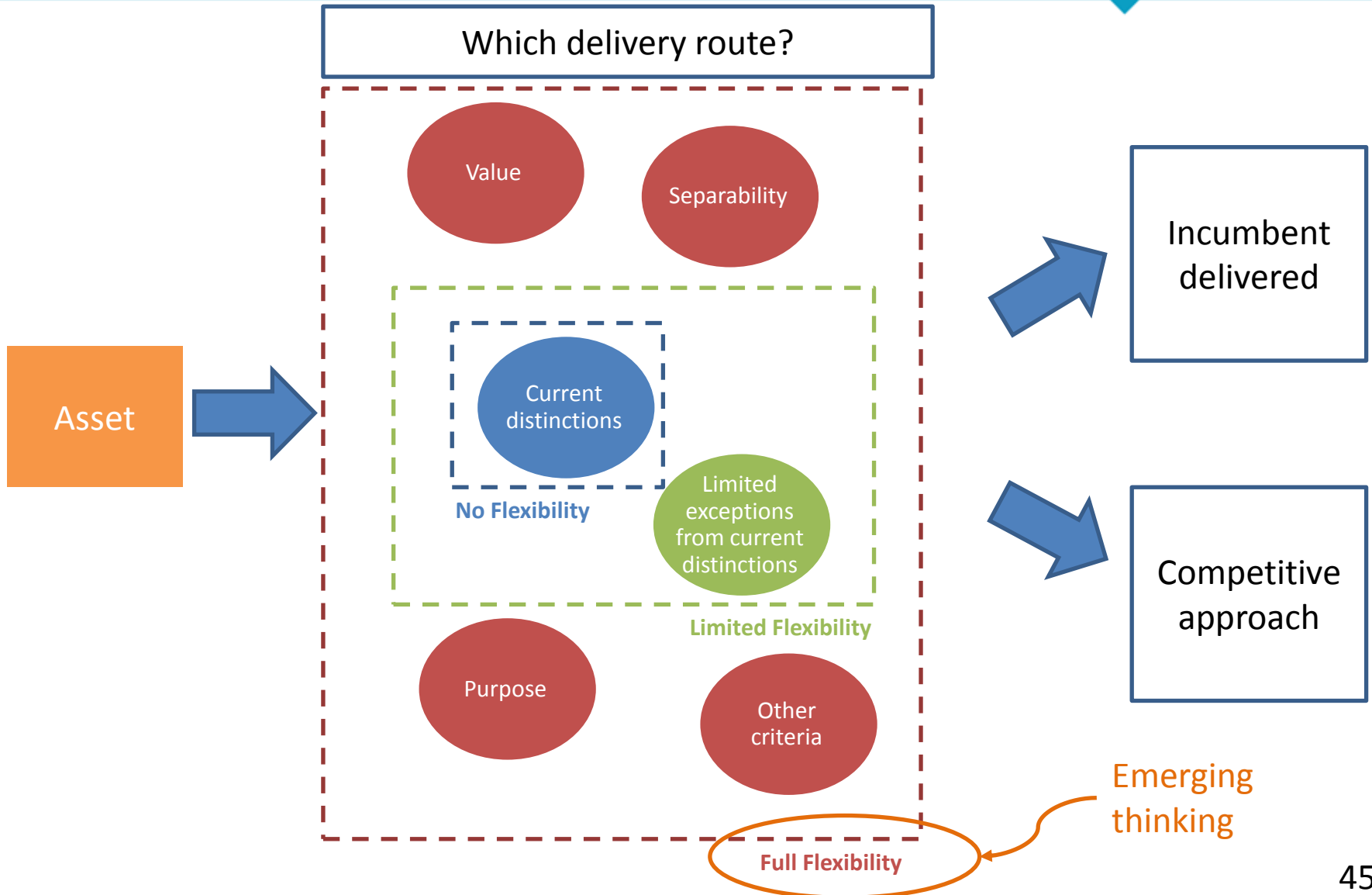
Asset used for transmitting offshore generation and interconnection



Scenario 3

Asset used to directly connect generators located outside GB





- Adding flexibility in delivery route is likely to provide benefit
- Full flexibility in delivery route may provide greatest scope to achieve benefits for consumers and clarity for industry
 - Potential new delivery routes where currently unclear, and potential change where could lead to more economic and efficient delivery
 - Keeping drivers under review
- Believe that current regimes are largely right, but that change at the margins could create value
- Legislative change may be needed to implement

Table discussions

Siobhán Carty, Project Manager, ITPR

26/06/13

System Planning – 20 mins

Asset Delivery – 20 mins

1. What are your views on the shallow, enhanced, and directive coordinating body models?

How could the enhanced coordinating body model apply across the onshore, offshore and interconnector regimes?

2. What are your views on the conflicts and synergies between transmission functions?

Based on this, what institutional options would you support- SO (NGET), ISO or IDA?

1. What are your views on the options for delivery of transmission assets?

Are there others Ofgem should consider?

Is there a case for change?

2. What are your views on introducing additional flexibility in delivery route?

Conclusions and next steps

Siobhán Carty, Project Manager, ITPR
26/06/13

Emerging thinking consultation

- Consultation on Emerging Thinking – Open until 2 August
- Industry workshop – 26 June

Development of proposals

- Consideration of stakeholder views
- Impact assessment
- Consultation on initial proposals early 2014

GB-Ireland transmission

- Parallel work to consider treatment under renewables trading
- Subject to Government decisions
- Could require proposals ahead of wider ITPR project conclusions

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Our priority is to protect and to make a positive difference for all energy consumers. We work to promote value for money, security of supply and sustainability for present and future generations. We do this through the supervision and development of markets, regulation and the delivery of government schemes.

We work effectively with, but independently of, government, the energy industry and other stakeholders. We do so within a legal framework determined by the UK government and the European Union.