



Developments in electricity network charging & access

19 February 2018



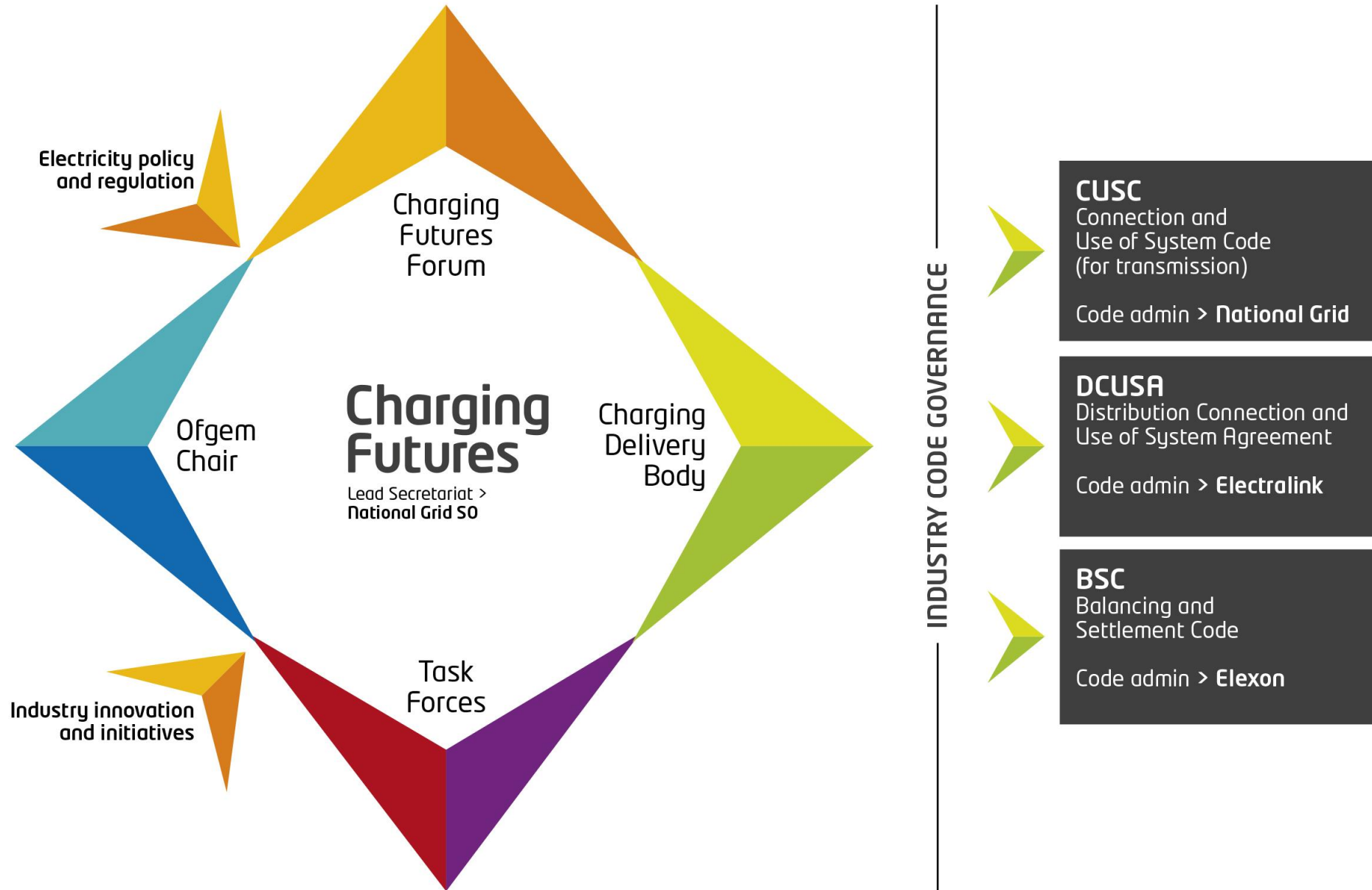


➤ Today

- Charging Futures quick overview
- Programme of reform in charging and access
 - Access and Forward Looking Charges
 - Targeted Charging Review
 - Next steps
- Q & A through webex chat

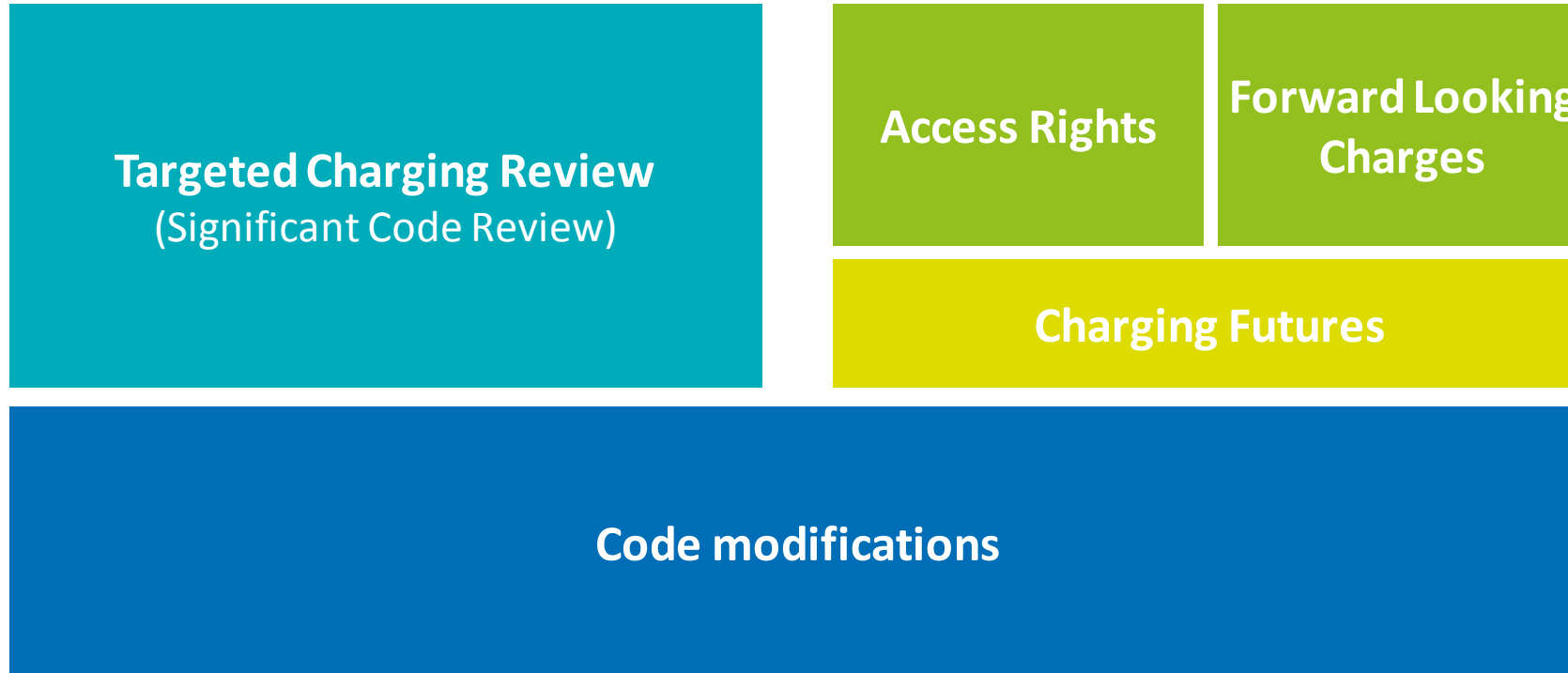


What is Charging Futures?





Current Change



Quick poll

Today's webinar hosts:

**Stephen Perry
& Andrew Self**

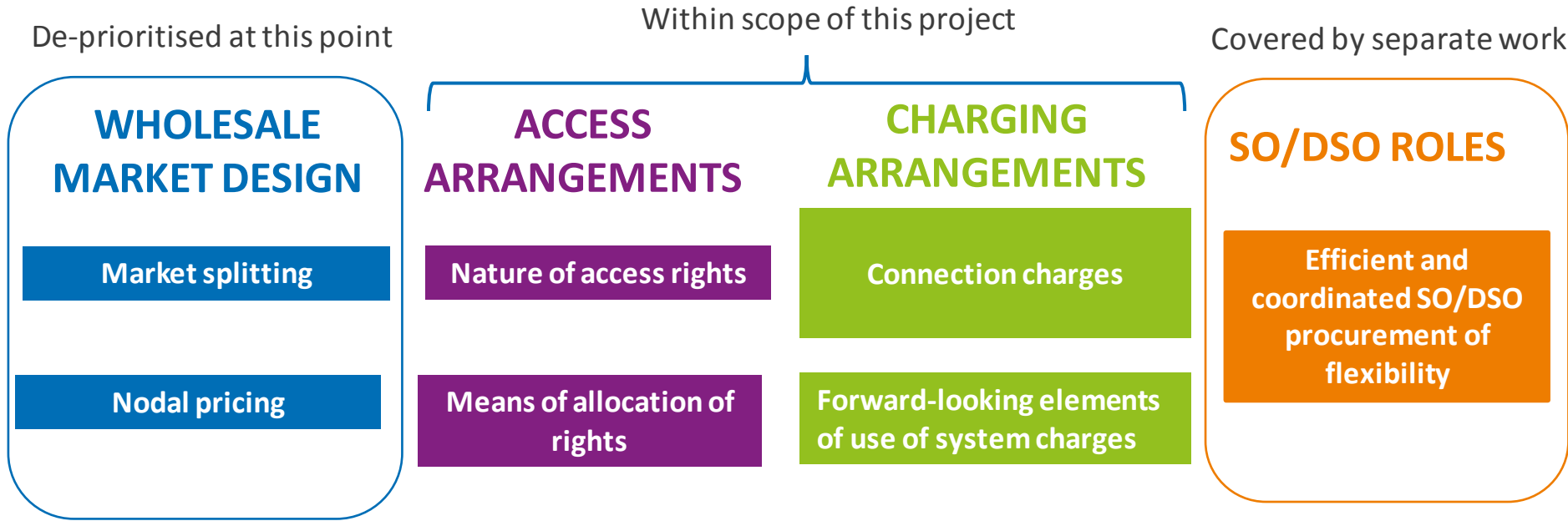
Ofgem



Access Rights & Forward Looking Charges Stephen Perry



Charging Futures Task Forces



The two main objectives of the project are to consider:

- > The nature of network access rights and whether different ways of constructing and allocating them could have value
- > The appropriate forward-looking charges for access and use of networks. This covers what changes might be merited both with and without changes to access arrangements

What are Access Rights & Forward Looking Charges?

Some introductory concepts

Network access rights

- The network capacity a user has allocated to them in order to import or export electricity from their target market
- Requires a connection from the user's equipment to the wider network, and then **allocated capacity on that wider network**

Forward-looking charges

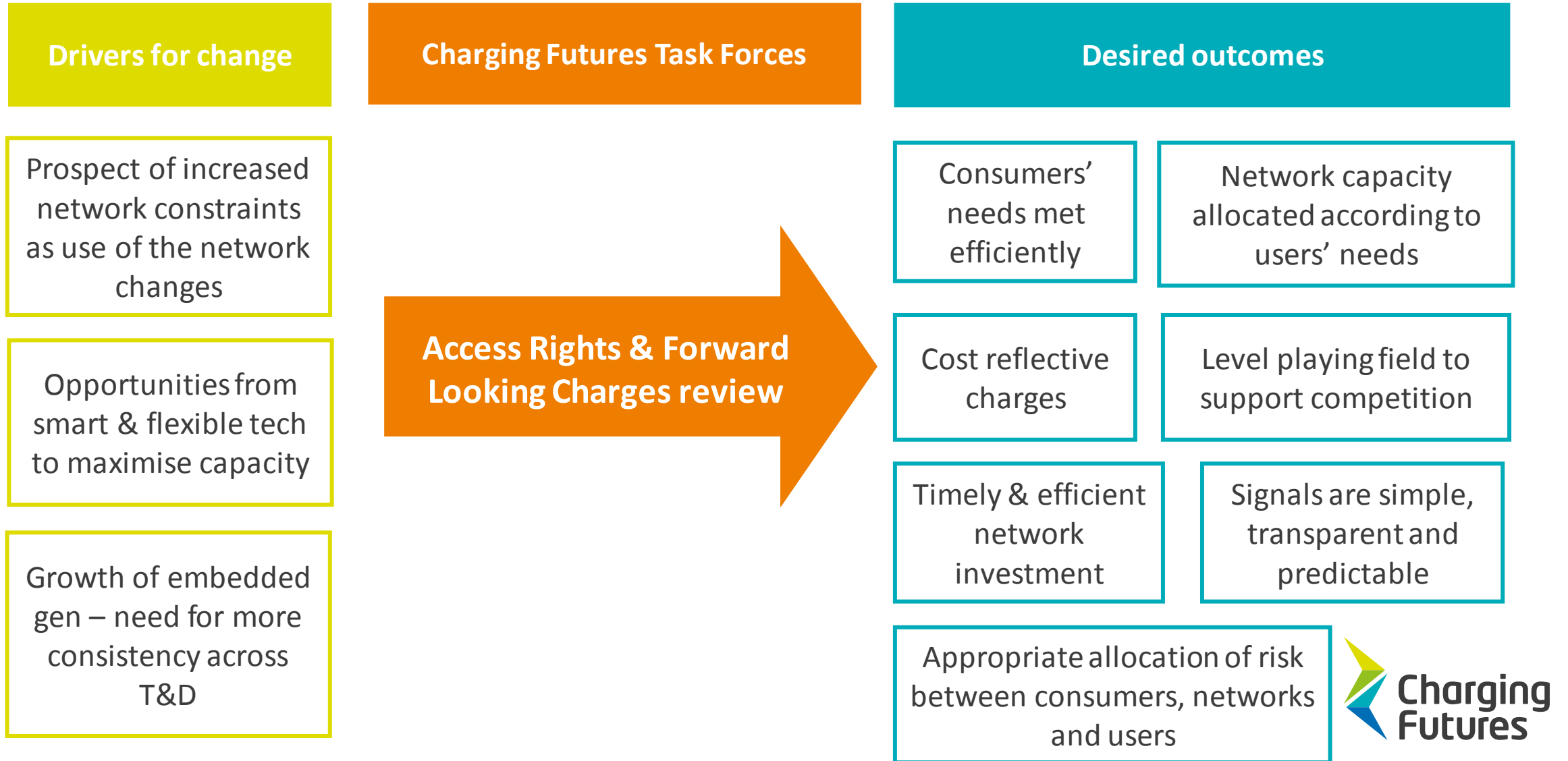
- The elements of network charges that look to provide signals to users about how their behaviours can increase or reduce future (ie incremental) costs on the network
- Includes connection charges and elements of use of system charges

Access vs usage charges

- Access charges reflect the cost/value of providing a user with a certain amount of network access, regardless of whether the user actually ends up using it or not
- Usage charges aim to reflect the cost/value conferred on the network by the user's actual usage. May be used where less emphasis on access rights.



Access Rights & Forward Looking Charges reform



➤ Why action is needed

Signals for efficient use of the network in a changing world

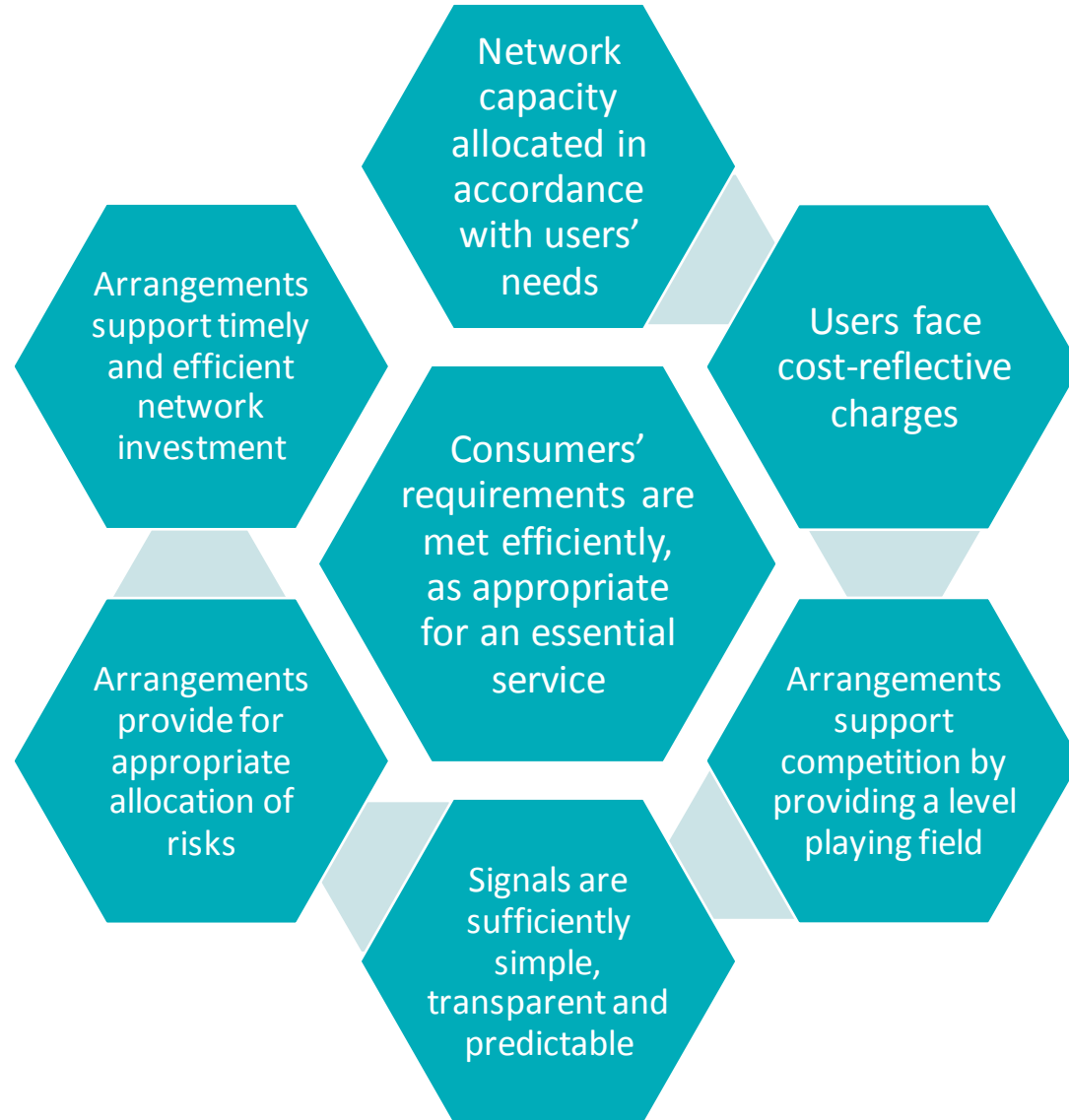
- > Prospect of increased network constraints as use of the network changes. Building more network capacity rather than using distributed flexibility likely to be very inefficient.
- > Congestion could hinder ability for system to accommodate new techs (eg EG, EVs, heat pumps) and new network capacity will add significant costs to consumers
- > New smart and flexible technologies offer opportunity to accommodate new usages through making much better use of existing network capacity, alleviating the need for new capacity. Currently little participation of DSR, and onsite generation.
- > Better access arrangements enables price control to incentivise more efficient investment in networks.

Sending coherent signals across transmission and distribution

- > Current access and charging arrangements designed when very limited EG and so little focus on ensuring consistent signals across T & D. This no longer holds - EG capacity has doubled over the last 5 years.
- > Need to ensure that different approaches are not distorting investment and dispatch decisions.



Desirable features of network access and forward-looking charging arrangements





What are the options for change?

Network access arrangements		Forward looking network charges	
Nature of access rights	Time aspects	Structure of the charge	Types of costs
	Firmness		Types of charge
	Geographical nature		Basis of charge
Timing of payment and degree of user commitment			
Associated conditions	Level of granularity	Locational granularity	
Initial allocation		Types of locational signal	
Reallocation and trading		Temporal granularity	



Next steps for Access and Forward Looking Charges project

Industry engagement events:

1. 28 Feb 2018 - Charging Futures Forum, London
2. 6 March 2018 – Workshop at University of Strathclyde, Glasgow

April 2018

CFF Network Access and Forward Looking Charging Task Forces publish their reports on their view of preferred future reforms

Summer 2018

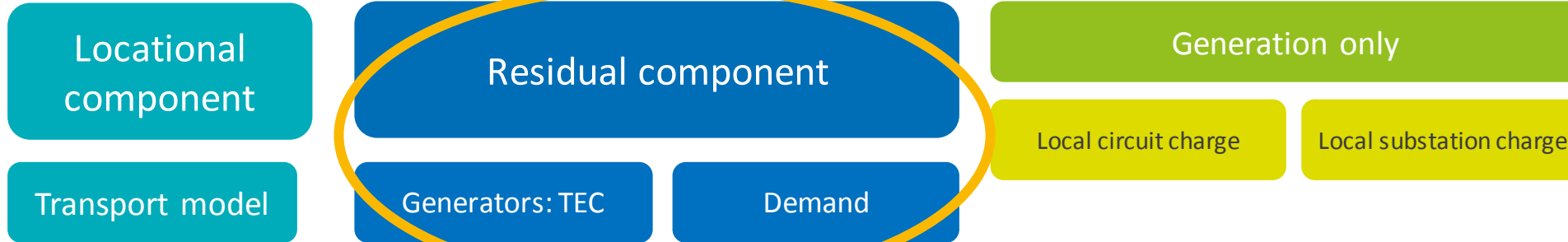
Publication of a consultancy document on future reforms of network access and forward looking charges

Targeted Charging Review

Andrew Self

➤ What is the demand residual and scaling factor?

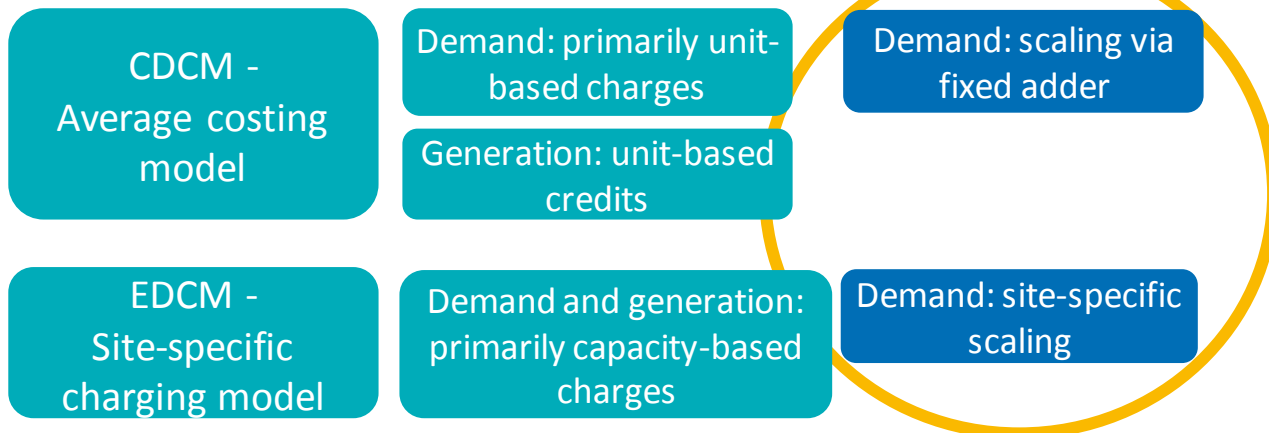
Transmission Network Use of System Charge (TNUoS)



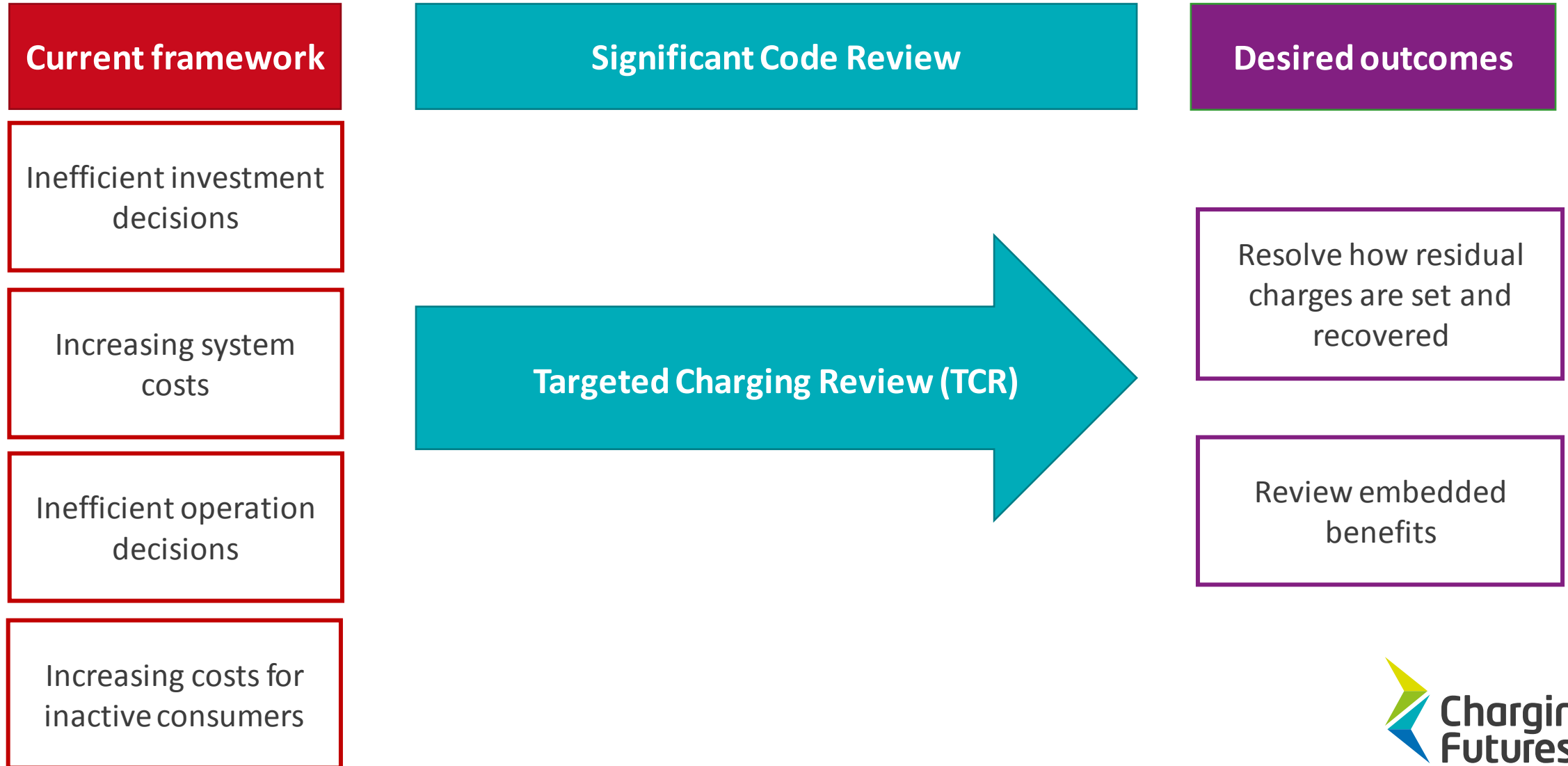
Total TNUoS split in 2018/19:



Distribution Use of System Charge (DUoS)



Targeted Charging Review overview



Current framework

The current levels of network and SO charges are c£10 B per year, of which about 50% is connection/forward-looking (designed to send signals) and 50% is residual/cost recovery charges (to ensure total revenue is recovered)

2016/17 charges		Transmission	Distribution	Balancing
Connection		£0.2 B	£0.2 B	
Use of system	Forward-looking	£0.5 B (both gen and demand)	£ 4.0 B (almost all on demand)	
	Residual/cost recovery	£2.1 B (all on demand)	£1.4 B (more than 99% on demand)	£1.3 B (half on demand and half on gen)
Total charges		£2.8 B	£ 5.6 B	£1.3 B



Current approach to residuals

Inefficient investment and operation decisions

- > Residuals may drive unintended and inefficient user actions by dampening or amplifying signals
- > 'Active' network users are increasingly able to vary their interaction with the networks, reducing residual exposure
- > Overall system costs may be increased by these actions to avoid residual charges

Adverse impacts on consumers

- > Residuals increasingly fall on users who aren't active or don't have onsite generation
- > Residential and small business consumers more likely to be affected, particularly more vulnerable consumers
 - > Level of distortion will depend on incentives and scale and speed of technology adoption (such as Evs)
- > Costs likely be passed through to PPM customers - current price cap provides allowance for the network

19 companies' published charges



Principles of the Targeted Charging Review

Reducing harmful
distortions

Fairness

Proportionality and
practical considerations

Who should pay the demand residual and how?

Who should pay?

Demand

Generation

Our shortlist for further analysis

Fixed charges

- Based on a range of implementation options

Capacity demand charges

- Ex post
- Ex ante

Gross consumption charges

- For business consumers

Baseline arrangements

- For T and D charging

Next steps for the Significant Code Review

Now that we have developed a short-list of options, we are ready to move on to the next phase of the SCR which will mean further analytical work.

Three levels of analysis:

- What are the residual charges and associated incentives faced by individual users due to the existing arrangements, and how are they affected by a change in the method by which residual charges are collected?
- What aggregate (whole system) changes might be expected from a change to residual charges.
- Costs of change

Overview of change

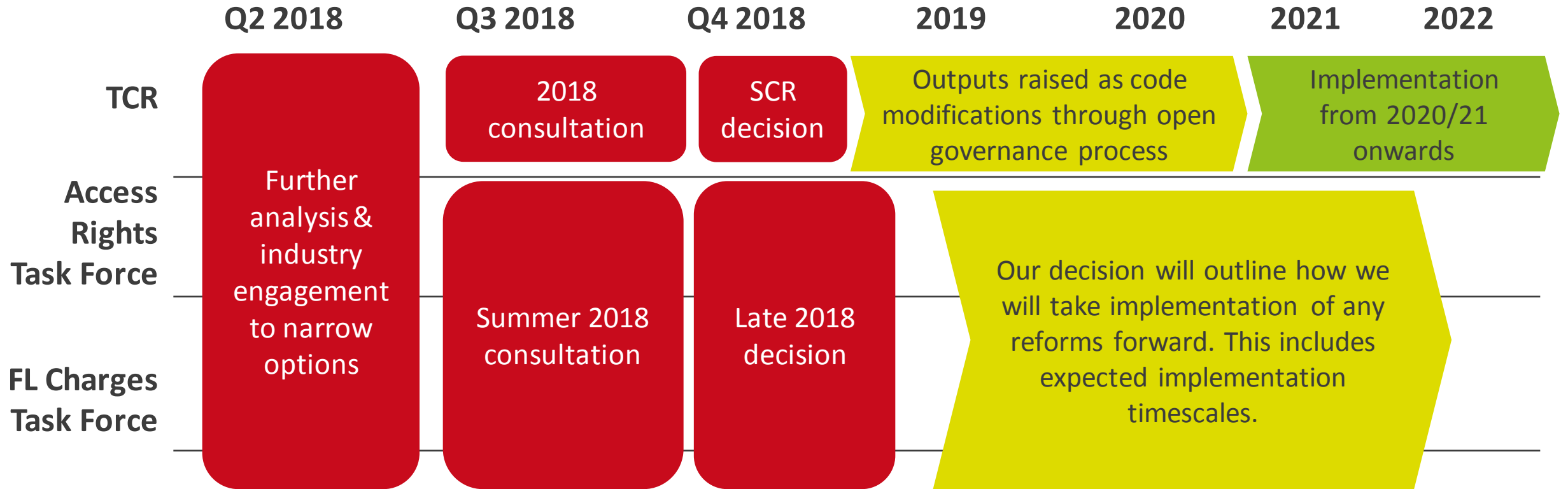
➤ How do these changes fit together?

**Targeted Charging
Review
(Demand Residual)**

+

**Access and
Forward Looking
Charges**

Timeline for change



Your involvement



Learn



Ask



Contribute



More info

Visit the Charging Futures website for

- Introductory webinars on how transmission and distribution charges work
- Learn more about Charging Futures
- Summary notes on the progression of charging reform
 - Targeted Charging Review
 - Access and Forward Looking Charges Task Forces
 - Storage
 - BSUoS
- Sign up to the Charging Futures distribution list

www.chargingfutures.com

Quick poll

Q & A

Please use the chat box to ask your questions

Website:

www.chargingfutures.com

Contact:

Chargingfutures@nationalgrid.com