



Network Charging Significant Code Reviews

An emerging picture

Webinar, 23 January 2020

WELCOME

Poppy Maltby – Senior Project Manager, Regen (Chair)

Madeleine Greenhalgh - Policy and advocacy manager, Regen

Katherine Vinnicombe – solar developer/investor perspective

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Membership co-ordinator
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- The basics – a quick introduction to Network Charging
- **The Targeted Charging Review** – outcomes and implications (Madeleine Greenhalgh)
- **Access and Forward Looking Charges** – emerging themes (Poppy Maltby)
- An industry perspective (Katherine Vinnicombe)

NETWORK CHARGING BASICS

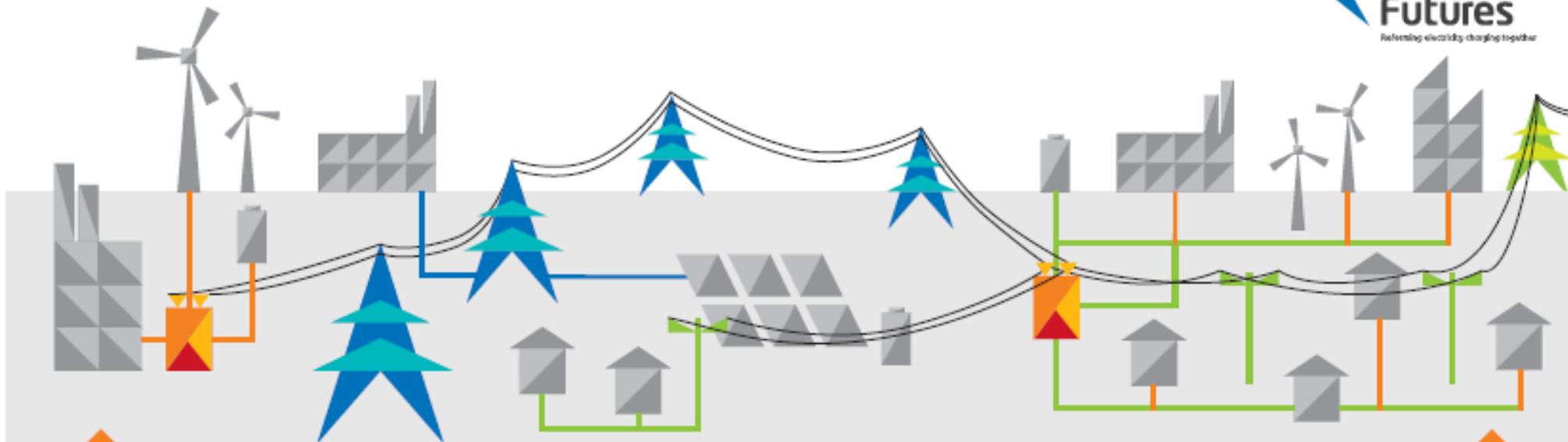
Key question: ***How the electricity network is paid for and who pays what?***

Ofgem: **Fairness** and cost reflectivity

Regen: **Decarbonisation** and affordable network capacity for new distributed renewables

Industry: **Business case** and predictability

Electricity network charges explained



Connection charge

Transmission Network Use of System charge (TNUoS)

This is paid to Transmission Owners (TOs) for the cost of building and maintaining the shared transmission network.

- Your TNUoS charge may depend on:
- > Where you are in GB
 - > When you use the network
 - > How much you consume

3-4% of average dual-fuel bill

Balancing Services Use of System charge (BSUoS)

This is paid to the System Operator for the cost of balancing the system.

It pays for the skills, tools and services the SO needs to balance supply and demand in real time.

1% of average dual-fuel bill

Distribution Use of System charge (DUoS)

This is paid to Distribution Network Operators (DNOs) for the cost of building and maintaining the local distribution network.

- Your DUoS charge may depend on:
- > Where on the local network you are
 - > What voltage connection you need
 - > When in the day you use the network
 - > How much you consume

8% of average dual-fuel bill

Connection charge

A charge for new assets or reinforcements needed to connect you to the network.

Each connection will have its own cost that is agreed with the TO or DNO you are connecting to.

Payment arranged with your network.

Significant Code Reviews – fundamental review of the methodology on who is charged what.

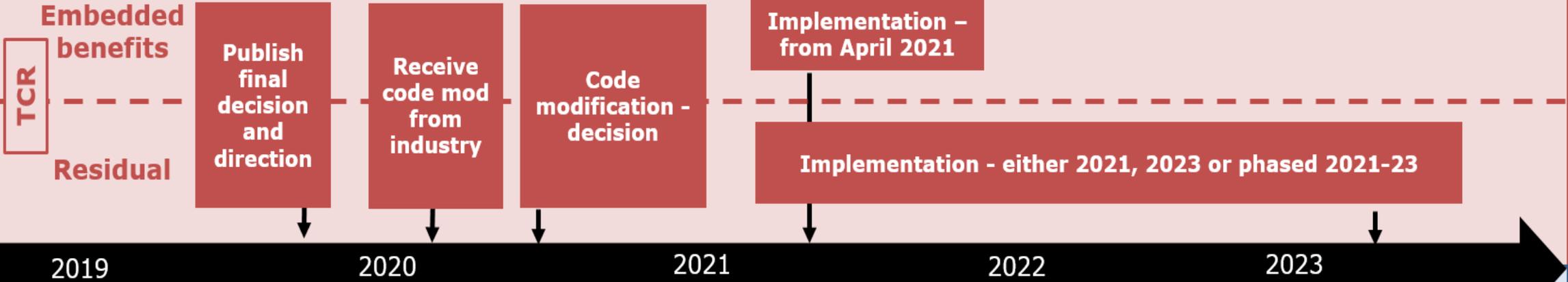
1. Fixed or residual costs - Targeted Charging Review.

2. Variable or flexible costs - Access and forward looking charges SCR

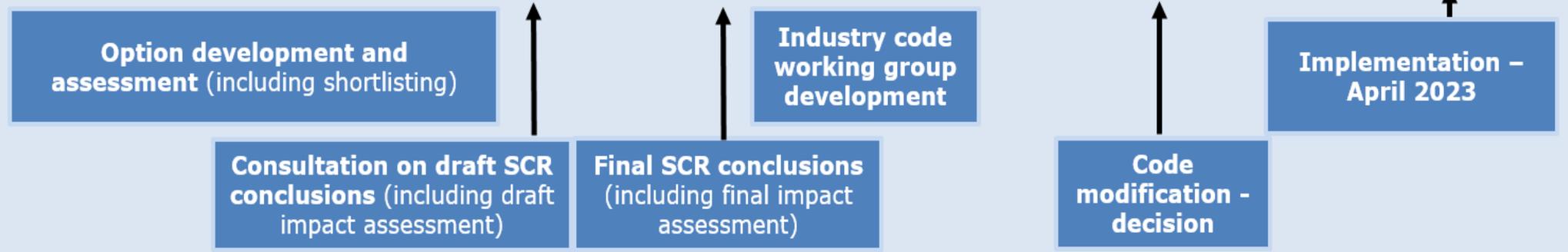
BSUoS

Balancing Service Charges Taskforce report – May 2019

Next steps on BSUoS



Access SCR

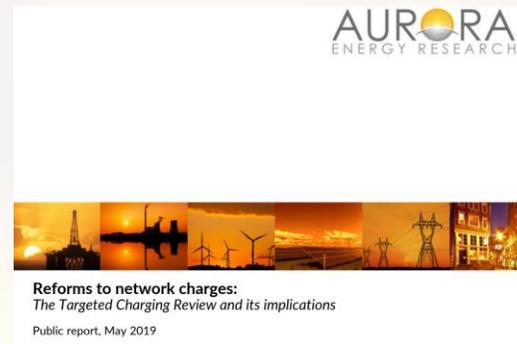
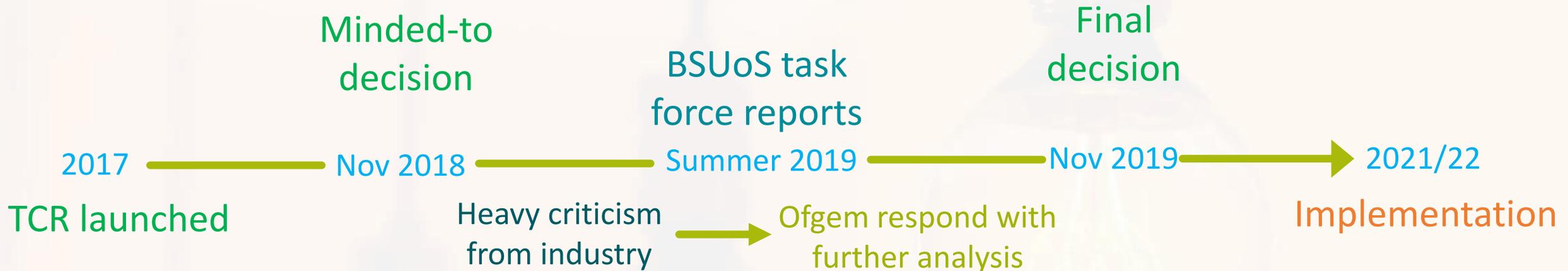


RIIO2



TARGETED CHARGING REVIEW

Targeted charging review - background



Ofgem respond with further analysis

- ↳ Capacity Market and system costs analysis
- ↳ How to apply the fixed residual charge
- ↳ Further modelling for renewables

Targeted charging review - decision

Final decision – Nov 2019

Fixed charges on demand users

→ **domestic customers:** single fixed charging band

→ **non-domestic customers:** banded approach based on

- voltage level and agreed capacity for large consumers
- voltage level and net consumption volume for small consumers

Tx reforms in 2021, Dx reforms in 2022

Targeted charging review - decision

Final decision – Nov 2019

Embedded benefits



TGR set to zero (in compliance with EU regs)



BSUoS embedded benefit will be removed (£2.50/MWh)

2021 implementation



Another taskforce will be set up to decide how BSUoS will be charged

It is not feasible to charge any of the components of BSUoS in a more cost-reflective and forward-looking manner that would effectively influence user behaviour that would help the system and/or lower costs to customers. Therefore, the costs included within BSUoS should all be treated on a cost-recovery basis.

Targeted charging review - impact

Fixed charge

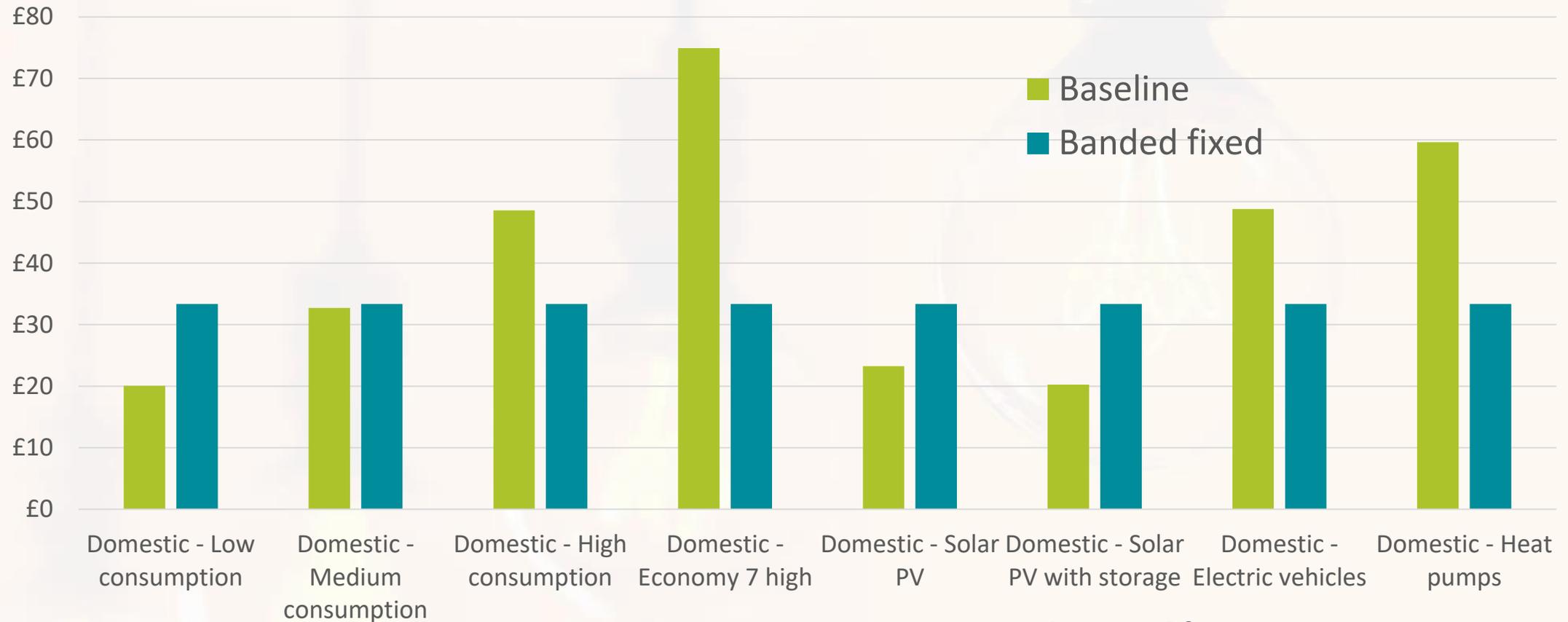
- ↳ removes incentive to change behaviour
- ↳ penalises those who use less and rewards those who use more
- ↳ penalises those with on-site generation

Embedded benefit changes

- ↳ Could result in £2.50-5/MWh loss for renewables
- ↳ Could delay subsidy-free renewables by 2 years

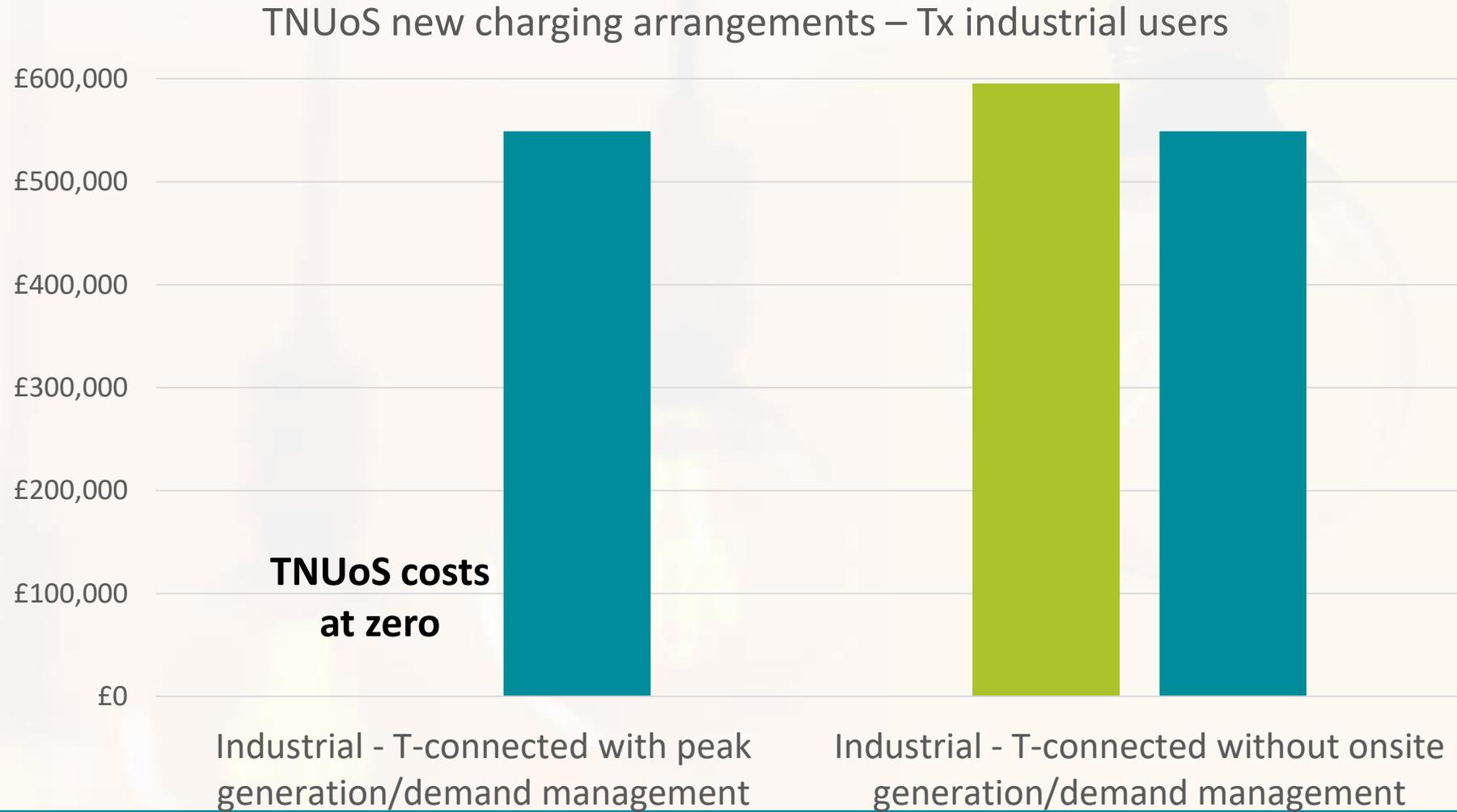
Targeted charging review - impact

Annual residual bill of domestic customers - Northeast (CDCM charges)



Source: Ofgem Impact Assessment, Nov 2019

Targeted charging review - impact



Targeted charging review - impact

Fixed charge

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Embedded benefit changes

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Targeted charging review - impact

£1 - 4bn

Ofgem's estimated additional cost to renewables through to 2040

They expect this to be made up through government subsidy – CfD contracts

*“Importantly, the modelling assumed that **successive governments will act over time to ensure they meet decarbonisation targets.** This is in line with normal practice for impact assessments by government departments.”*

TCR decision document, Ofgem, November 2019

ACCESS AND FORWARD LOOKING

Distribution connection boundary is **shallow-ish**
Connectees pay – **upfront** - for proportion of
upgrades triggered on voltage level and one level
above.

Regulatory barriers on strategic upgrades to
relieve generation constraints = rarely happens.

Cost for connection in
constrained areas is regularly
prohibitive.



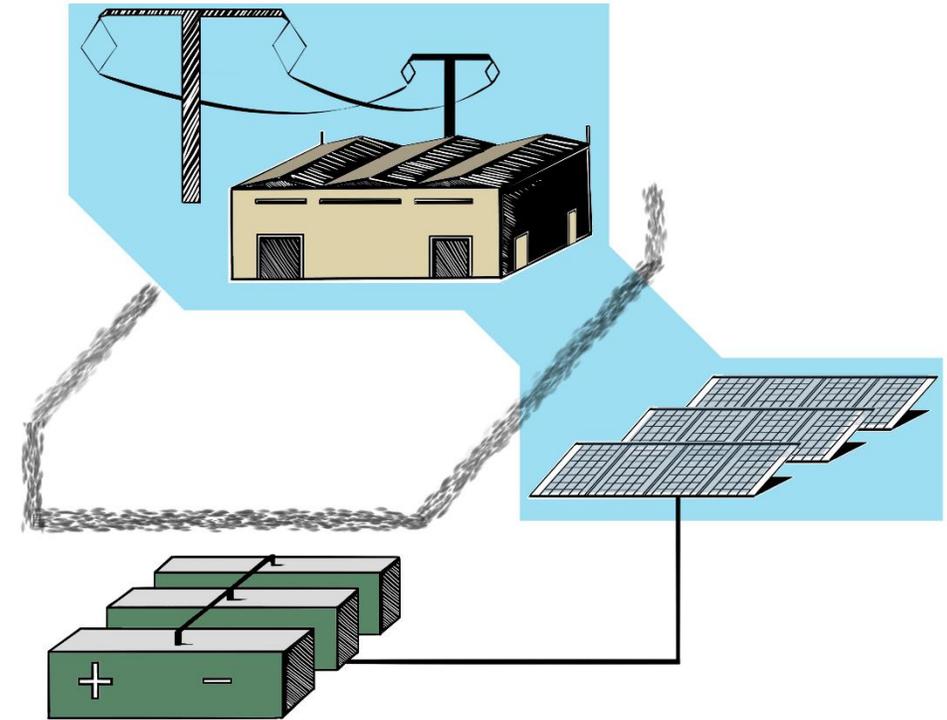
20MW Battery storage located adjacent to primary substation.

Connection costs to POC - £983,441

Reinforcement works - £3,201,295

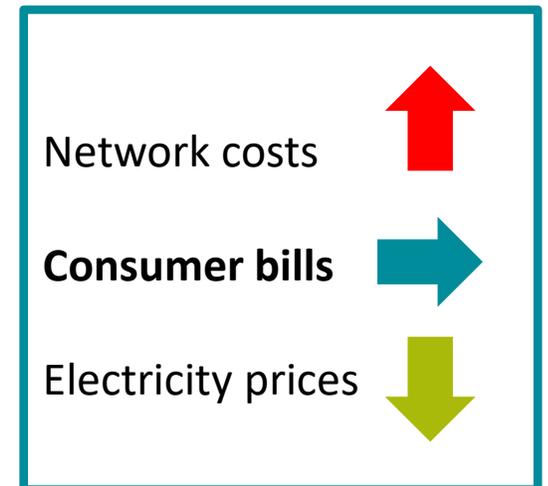
Connection time – 4 years

This cost would apply to all similar sized generation schemes on the Island due to breach of thermal rating on interconnectors.



Our views

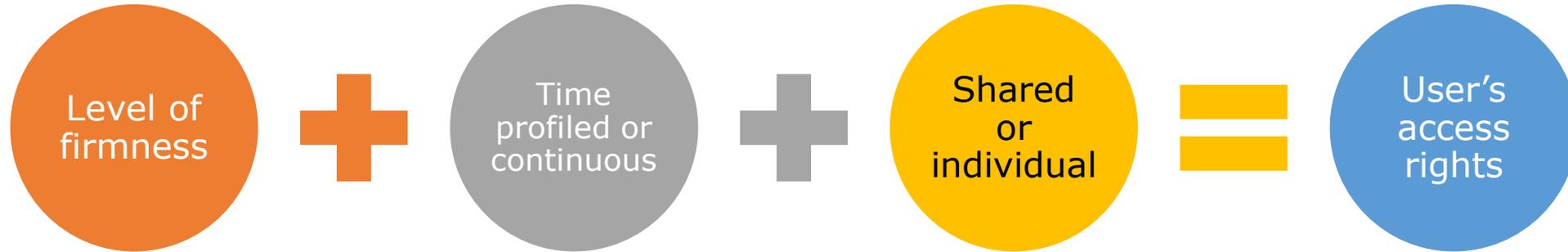
- Current distribution 'shallow-ish' system is unfair on future network users
- Economically sub-optimal network investment
- Needs to consider full market impact



Ofgem shortlisting ‘shallower’ options but notes it is: “An effective locational signal”

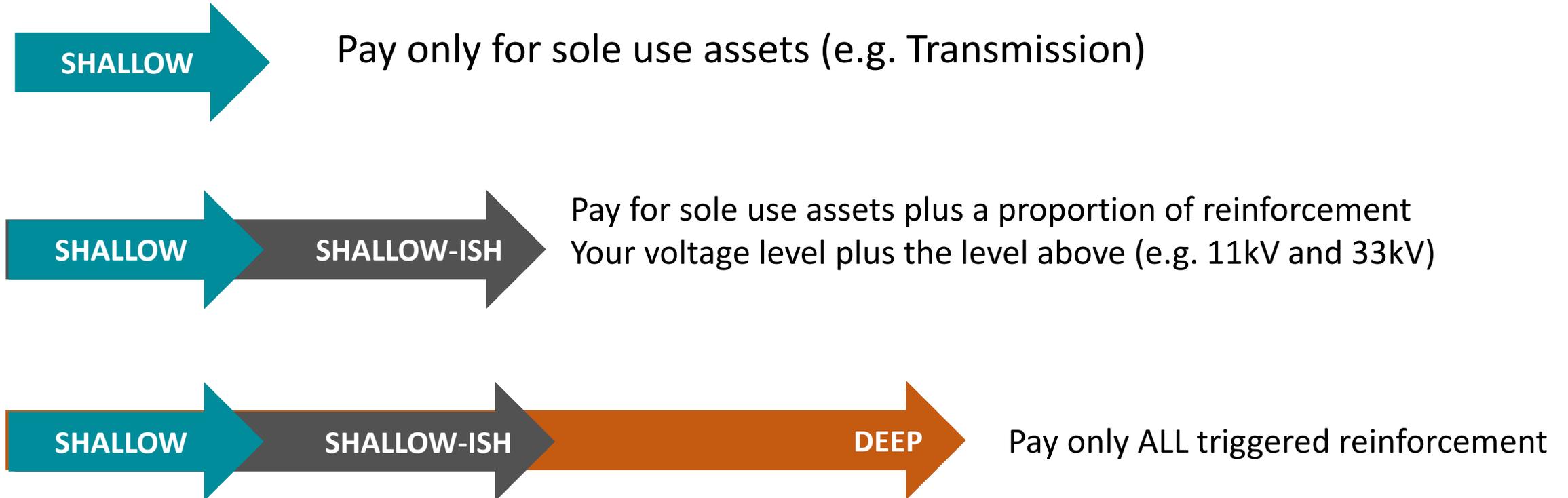
“While we think there may be some evidence to suggest upfront cost might be a barrier to some, we have not yet seen compelling evidence to support more fundamental change. We would welcome any further insights being sent to FutureChargingandAccess@ofgem.gov.uk. “

Request for more evidence that upfront cost is a barrier.



- Will the discounts be enough to encourage take-up?
- How will these options work with local flexibility markets?
- Will they be levied as volumetric or agreed capacity?

INDUSTRY PERSPECTIVE



- Is shallow charging better? Are there any concerns with it?
- Do you have tangible evidence of projects refused financial investment, or discarded at the early development phase, due to prohibitive upfront grid connection costs?

Regen will respond to Ofgem by 24th January (tomorrow) to advise additional evidence is expected.

See source material here:

<https://www.ofgem.gov.uk/publications-and-updates/access-and-forward-looking-charges-significant-code-review-winter-2019-working-paper>

- Engineering standards and reasonable costs
- Differentiating Projects: Small vs Large scale, Dispatchable vs Non-Dispatchable
- TNUoS levies

- Raise your hand
- Who you are
- Your question / comment
- Keep trying!



- Please give any feedback using the survey:
<https://www.surveymonkey.co.uk/r/J9BS256>
- If you have any comments or evidence to send to Regen or Ofgem (or both), please send to:

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