

P379 Multiple Suppliers Through Meter Splitting:

Cost Benefit Analysis



Industry Workshop

8th December 2020

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Share your thoughts via sli.do



- We will be using sli.do to gather feedback and take your questions.
- Interaction during the workshop:
 - Logistics: Use the 'Teams' chat for logistics/process points. E.g. I can't see the slides/hear the speaker.
 - **Q&A**: You can enter questions and 'vote' for your favourite questions in the Q&A at any time. We have 15 minutes for Q&A at the end of each session and will answer the most voted for questions first.
 - **Sli.do polls**: We have several questions for you, both open questions and 'polls'. We will pause for several minutes on these slides to allow time for participants to submit their responses.

• Follow up:

 If you have any views you would like to share with us following the workshop, please contact me: <u>lewis.heather@cepa.co.uk</u>

Ask questions and participate in polls at https://www.sli.do/

Event code: #379

Question for stakeholders



- Which of the following options best describes you as a stakeholder?
- [Options will be shared via sli.do]

Agenda



Time	Item	Lead
10:00 – 10:30	Open, intros and context	Elexon
10:30 – 10:45	Q&A	Elexon
10:45 – 11:15	High level analytical approach	CEPA
11:15 – 11:30	Q&A	СЕРА
11:30 – 11:45	Brea	k
11:45 – 12:30	Benefits	CEPA
12:30 – 12:45	Q&A	CEPA
12:45 – 13:00	Next steps	Elexon
13:00 – 13:30	Brea	k
13:30 – 14:15	Costs (Optional)	СЕРА
14:15 – 14:30	Q&A	CEPA
14:30 – 15:00	Close and buffer	Elexon

Aims of the workshop



We want to gather feedback and views from the industry on costs and benefits as well as presenting our approach. This is additional to the published consultation which is the main channel for affected parties to share your input.

Aims of the session:

- Present and discuss our high-level analytical approach
- Discuss potential benefits of P379 and gather views from stakeholders
- Discuss financial costs of P379, focussing on supplier costs (*Optional session after lunch*)
- Direct stakeholders towards the consultation on P379 costs and benefits

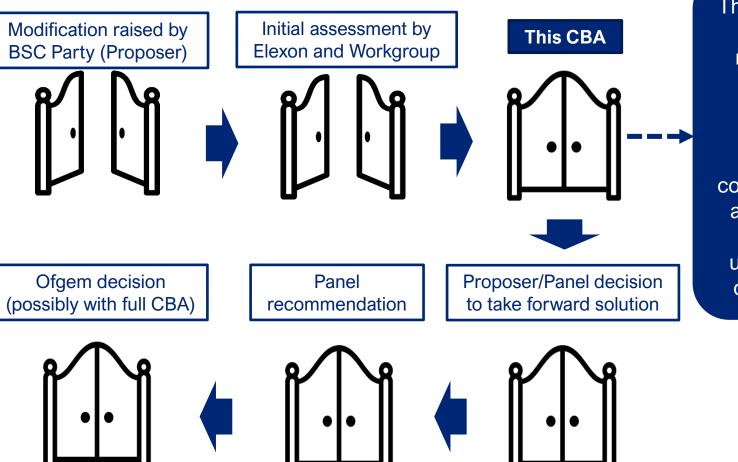
We ask all interested and affected stakeholders to submit a response to the consultation which you can download here: <u>https://www.elexon.co.uk/consultation/p379-cost-benefit-analysis-</u> <u>consultation/</u>

Context: P379 'gateways'



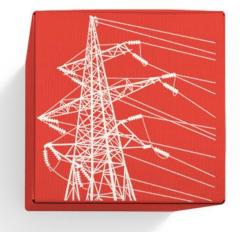
The CBA is taking place at a relatively early stage in the process.

Several of the costs and benefits are subject to a wide range of uncertainty and dependencies.





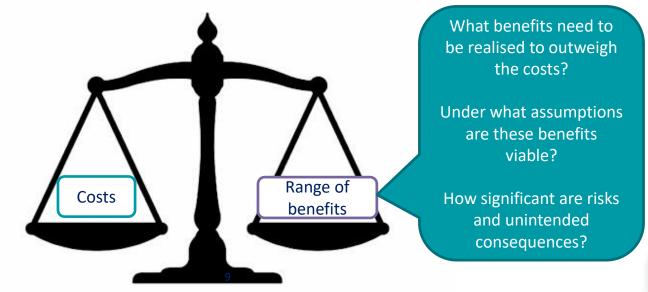
Analytical Approach



Context



- The CBA is intended to feed into a decision for the modification proposer and the BSC Panel regarding whether to take forward P379 for further development; and
- The CBA may also feed into the Panel's view on a recommendation to Ofgem regarding whether to approve P379
- The objective is not to provide a perfect estimate of the costs and benefits...
- But to answer the question 'Is sufficient benefit achievable to warrant developing the solution further?'
- To answer that we should consider whether there are realistic scenarios in which '**benefits > costs**' and under what conditions/assumptions this is the case
- The costs and benefits need to be evaluated in the presence of substantial uncertainty, noting risks and unintended consequences



Scenarios for costs and benefits assessment



- To assess the potential extent of benefit and under what conditions these are observed, our analysis will consider possible *upper estimates* of benefit as a starting point.
- We will inform potential appetite for secondary suppliers through the 'lens' of National Grid's Consumer Transformation scenario
- This achieves 2050 Net Zero targets with significand change in consumer behaviour and technology take-up
- This will inform our thinking on potential benefits, including takeup of consumer technologies



Source: National Grid

Our analysis will cover the period from 2021 to 2030.



Scenarios for cost and benefit assessment

- We will consider costs and benefits under three 2030 take-up scenarios
- This will allow us to consider economies of scale in cost estimates and compare this against the magnitude of benefits at various levels of scale.
- Context:
 - Considering EVs as a business model for secondary suppliers
 - In 2018 there were 28.4 million residential electricity meters.
 - Under the Consumer Transformation scenarios, there are 11.1 million battery electric vehicles on the road by 2030

Medium take-up Low take-up High take-up **Primary suppliers**: **Primary suppliers**: **Primary suppliers**: 1% of an existing 10% of an existing 0.1% of an existing supplier's customer supplier's customer supplier's customer base base base **Secondary Secondary Secondary suppliers**: <10,000 **suppliers**: 10,000 – **suppliers**: >100,000 100,000 customers customers customers





Benefits assessment



Benefits channels The overarching change in outcomes Example channel: Community energy scheme uptake



Benefits mechanisms The mechanism through which consumers benefit Example mechanism: Additional opportunities for renewable generation



Benefits The end benefits for consumers Example benefit: Reduced carbon emissions

Question: What is the absolute magnitude of potential benefit from the intended outcomes?

Example analysis: What evidence is available on the magnitude of potential benefit from community energy schemes?

Question: For the benefits channel, what barriers will P379 remove/alleviate? **Example analysis**: How will P379 address existing barriers to suppliers/consumers undertaking community energy schemes?

Questions: How significant is the barrier to achievement of the desired outcomes? **Example analysis**: To what extent is this barrier preventing community energy scheme uptake? What alternatives to P379 could have a similar impact on this barrier?

Break-even analysis



- Problem: Asymmetric ability to quantify costs and benefits
 - Can get a reasonable sense of direct financial costs of implementation/operation, albeit noting uncertainty and challenges in assessing cost submission. Take-up uncertainty will be addressed by using three 'take-up scenarios'.
 - But many of the benefits are abstract and difficult to quantify with accuracy
 - Risks and unintended consequences also need to be taken into account in assessing potential extent of benefit
- Solution: Combination of 'break-even analysis' and 'multi-criteria analysis'

Step 1: Develop estimate of costs

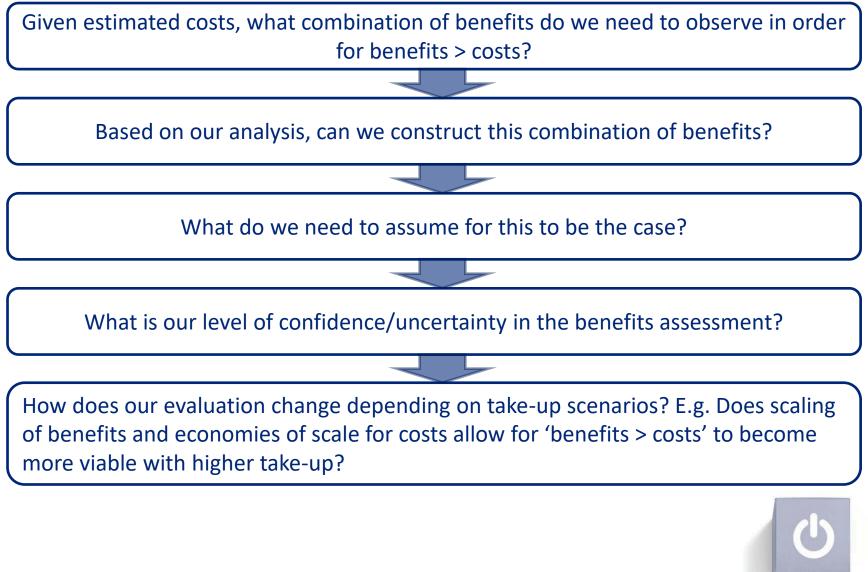
Step 2: Score benefits (e.g. 1-5 potential) based on quantitative/qualitative analysis

Step 3: Identify under what conditions the combination of benefits could balance the estimated costs, considering risks and unintended consequences



Break-even analysis: Analytical Questions





Benefit scoring:monetised benefits



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Based on our analysis of benefits, we will score each 'benefits channel'. We will separate benefits into 'monetised' and 'non-monetised' benefits *Example scoring of monetised benefits:*

1	 No/negligible benefit <£1 million consumer savings (Net Present Value (NPV)) 	
2	 Small benefit £1-5 million consumer savings per year (NPV) 	
3	 Medium benefit £1-10 million consumer savings per year (NPV) 	
4	 Large benefit >£10-25 million per year (NPV) 	
5	 Very large benefit >£25 million per year (NPV) 	

Benefit scoring: non-monetised benefits



Based on our analysis of benefits, we will score each 'benefits channel'. We will separate benefits into 'monetised' and 'non-monetised' benefits *Example scoring of non-monetised benefits:*

1	 No/negligible benefit Insignificant increase in decarbonisation and/or customer satisfaction
2	 Small benefit Small increase in decarbonisation and/or customer satisfaction for a few customers
3	 Medium benefit Notable increase in decarbonisation and/or customer satisfaction for some customers
4	 Large benefit Significant increase in decarbonisation and/or customer satisfaction for many customers
5	 Very large benefit Large increase in decarbonisation and/or customer satisfaction for many customers



Using NPV estimates or equivalent scores where £ estimates are not available: What combination of these benefits is needed to 'break-even' against costs?

Benefit channel	Benefit	1 (<£1m or equivalent)	2 (£1-5m or equivalent)	3 (£1-10m or equivalent)	4 (£10-25m or equivalent)	5 (>£25m or equivalent)
Benefit channel A	Lower bills					
Benefit channel B	Reduced carbon emissions					
Benefit channel C	Consumer satisfaction					

NB: How many boxes remain highlighted indicates our range of uncertainty over the potential extent of benefit



Example: Under medium take-up scenario, cost estimates suggest costs of £30 million NPV (assume only three benefits channels)

Benefit channel	Benefit	1 (<£1m or equivalent)	2 (£1-5m or equivalent)	3 (£1-10m or equivalent)	4 (£10-25m or equivalent)	5 (>£25m or equivalent)
Benefit channel A	Lower bills					
Benefit channel B	Reduced carbon emissions					
Benefit channel C	Consumer satisfaction					



Example: Under medium take-up scenario, cost estimates suggest costs of £30 million NPV. Can we identify potential benefits that 'break-even' against these cost estimates?

Benefit channel	Benefit	1 (<£1m or equivalent)	2 (£1-5m or equivalent)	3 (£1-10m or equivalent)	4 (£10-25m or equivalent)	5 (>£25m or equivalent)
Benefit channel A	Lower bills					
Benefit channel B	Reduced carbon emissions					
Benefit channel C	Consumer satisfaction					

No. In this case, our benefits assessment suggests benefits <£25m or equivalent qualitative benefits



Example: Under medium take-up scenario, cost estimates suggest costs of £30 million NPV. Can we identify potential benefits that 'break-even' against these cost estimates?

Benefit channel	Benefit	1 (<£1m or equivalent)	2 (£1-5m or equivalent)	3 (£1-10m or equivalent)	4 (£10-25m or equivalent)	5 (>£25m or equivalent)
Benefit channel A	Lower bills					
Benefit channel B	Reduced carbon emissions					
Benefit channel C	Consumer satisfaction					

Yes. In this case, our benefits assessment suggests potential benefits could be greater than £75m or equivalent qualitative benefits However, note the broad range of uncertainty for some benefits

Questions for stakeholders



Do you have any views on our analytical approach?



Break

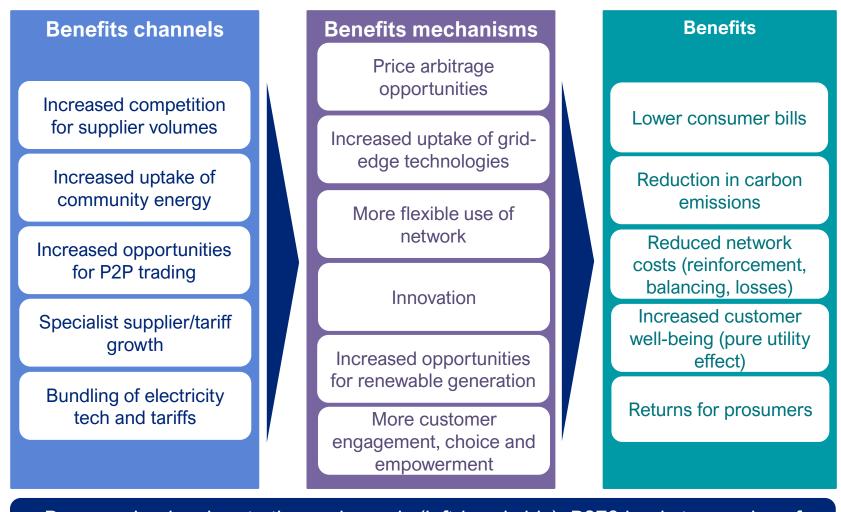


Assessment of benefits



End consumer benefits





By removing barriers to these channels (left-hand side), P379 leads to a series of consumer benefits (right-hand side)

Increased competition for supplier volumes: Barriers alleviated by P379



Theory: Currently, a supplier has a 'monopoly' on all energy volumes behind the meter.

This may limit consumer choice and supplier innovation. For example,:

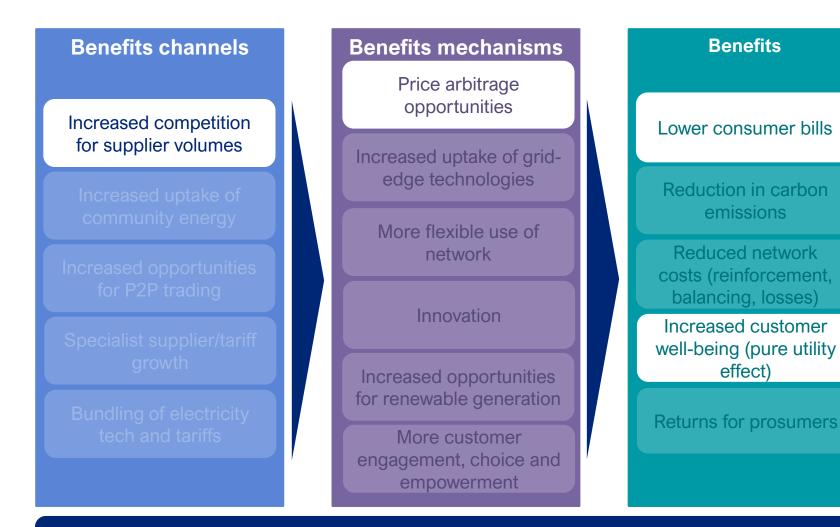
- Consumers seeking dynamic price for load that they can actively manage (e.g. energy storage, EVs, heat pumps), but traditional tariff for nondiscretionary load.
- Specialist suppliers wanting to supply controllable loads, but who have to take on the full consumer volume.

Challenges to theory: How many consumers want multiple suppliers or more dynamic and interactive tariff offers?

Other solutions exist, involving additional boundary metering or device metering. New or existing suppliers can already design tariffs for EV households; specialist technology companies can provide behind-the-meter optimisation services. As part of the counterfactual, we will consider the extent to which these kind of offers may be taken up in the absence of P379.

End consumer benefits





We are seeking your feedback on the likelihood and potential magnitude of benefit associated with P379 and the removal of barriers for this 'benefit channel'

Increased competition for supplier volumes: Analytical approach

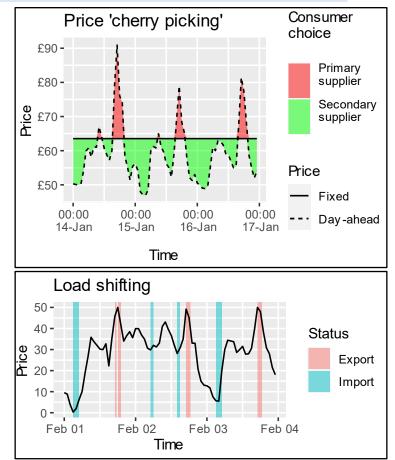


This is the main source of benefit that we will seek to quantify. Our aim is to develop an upper estimate, then consider where assumptions may suggest moving back from this.

Premise: Secondary suppliers will provide access to wholesale prices, opening arbitrage opportunities for consumers with dynamic loads.

There are three interacting benefits:

- Price 'cherry picking' consumer switches between the day ahead and fixed price. This is a *distributional impact* where benefits to secondary supplier customers may push up prices for other primary supply customers (and themselves).
- 2. Risk premium avoidance consumers accepting wholesale prices are taking on risk from primary supplier. There could be *genuine welfare benefits* from changing risk allocation.
- Load shifting using dynamic technologies to shift load in response to wholesale prices. *Consumer and system benefit* from peak shaving leading to lower wholesale prices and reduced network stress.



Questions for stakeholders



What level of savings do you think residential consumers using a secondary supplier could make from price arbitrage?

- 1. Negligible (£0 to £1 customer saving per year)
- 2. Small (£1 to £5 customer saving per year)
- 3. Medium (£5 to £15 customer saving per year)
- 4. Large (£15 to £50 customer saving per year)
- 5. Very large (>£50 customer saving per year)

How certain are you of your response?

- 1. Very uncertain
- 2. Uncertain
- 3. Somewhat certain
- 4. Quite certain
- 5. Certain

What are your reasons for your responses?

Questions for stakeholders



Do you have any views on our analytical approach?

Specialist suppliers, tariffs, and bundling: Barriers alleviated by P379



Theory: Third party suppliers wanting to offer bespoke or specialist services, or only looking to serve part of a consumer's load, can only do so by:

- Agreeing a customer volume splitting arrangement with the existing supplier; OR
- Putting in place a second boundary meter

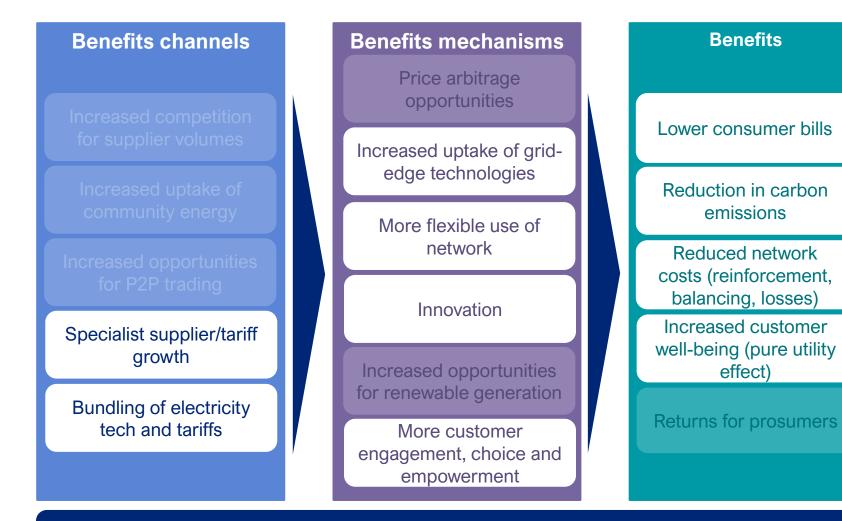
Both of these options entail an administrative or financial cost that acts as a barrier to entry, and reduces the incentive of new suppliers to enter the market and trial innovative customer propositions.

P379 reduces these barriers by standardising arrangements for splitting volumes.

Challenge to theory: No evidence to suggest that such specialist services are in demand, or couldn't be offered by primary suppliers.

End consumer benefits





We are seeking your feedback on the likelihood and potential magnitude of benefit associated with P379 and the removal of barriers for this 'benefit channel'

Questions for stakeholders



Context: In 2018 there were 28.4 million residential electricity meters. Under the Consumer Transformation scenarios, there are 11.1 million battery electric vehicles on the road by 2030

By 2030, how many residential customers might choose specialist suppliers and/or bundled products using secondary suppliers if P379 is implemented?

- 1. Negligible (<10,000 customers)
- 2. Small (10,000 100,000 customers)
- 3. Medium (100,000 250,000 customers)
- 4. Large (250,000 1m customers)
- 5. Very large (>1m customers)

How certain are you of your response?

- 1. Very uncertain
- 2. Uncertain
- 3. Somewhat certain
- 4. Quite certain
- 5. Certain

What are your reasons for your responses?

Community energy: Barriers alleviated by P379



Theory: Without P379, those wishing to be involved in a community energy scheme involving shared generation, storage or flexibility assets, need to either:

- Agree on a single supplier between them, OR
- Get a shared supplier to enter into individual agreements with every primary supplier

The first of these options creates substantial market power concerns, and both options introduce a substantial administrative burden on consumers and suppliers.

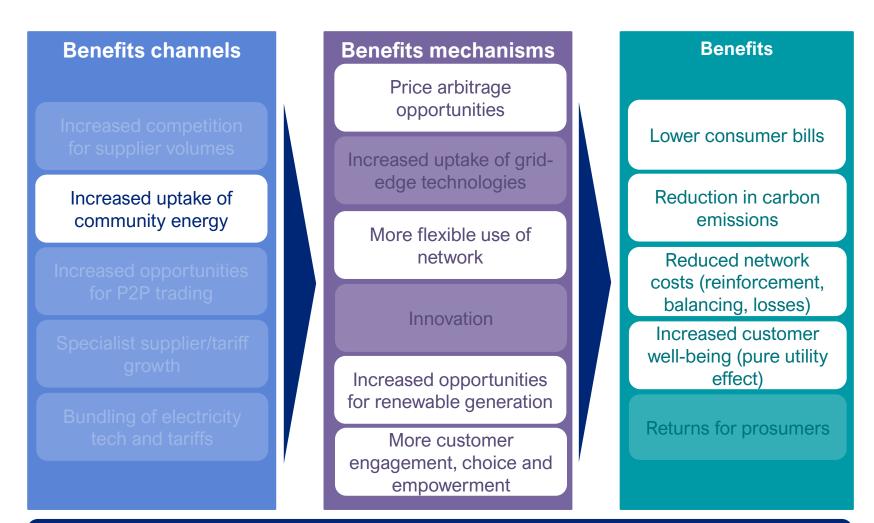
P379 allows consumers to continue with their existing primary supplier, while contracting with a secondary supplier for the purposes of the community energy scheme.

Challenge to theory: Many countries (e.g. Denmark and Germany) have successful community energy landscapes without a multiple-supplier model. Consumers almost take as given that being involved in a community energy project involves a shared supplier.

What evidence is there that the absence of a multiple supplier model acts as a barrier to the growth of community energy?

End consumer benefits





We are seeking your feedback on the likelihood and potential magnitude of benefit associated with P379 and the removal of barriers for this 'benefit channel'

Questions for stakeholders



As of 2018, there was an estimated 250 MW installed capacity of community energy scheme projects. What increase in the percentage of customers who take up community energy do you think P379 could drive?

- 1. Negligible (0% to 10% increase in community energy uptake)
- 2. Small (10% 25% increase in community energy uptake)
- 3. Medium (25% 50% increase in community energy uptake)
- 4. Large (50% 150% increase in community energy uptake)
- 5. Very large (>150% increase in community energy uptake)

How certain are you of your response?

- 1. Very uncertain
- 2. Uncertain
- 3. Somewhat certain
- 4. Quite certain
- 5. Certain

What are your reasons for your responses?

P2P trading: Barriers alleviated by P379



Theory: Without P379, peer-to-peer trading either requires:

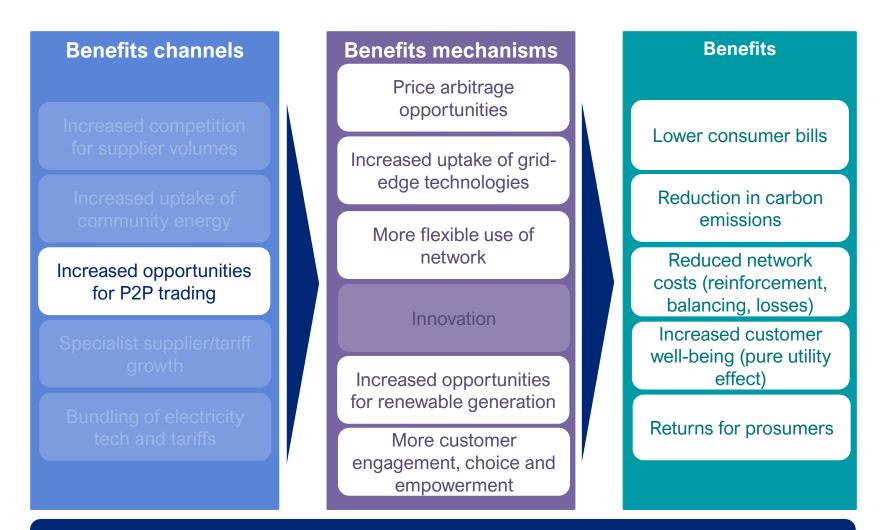
- A separate boundary meter to cover volumes that are traded;
- Active facilitation by a single supplier; or
- An agreement between an agent facilitating P2P trading and various suppliers

All of the models we are currently aware of involve a single supplier actively facilitating P2P trading.

Challenge to theory: Unclear to what extent consumers view this as a barrier, or whether those wishing to trade with peers see switching suppliers as a necessary step they are willing to undertake.

End consumer benefits





We are seeking your feedback on the likelihood and potential magnitude of benefit associated with P379 and the removal of barriers for this 'benefit channel'

Questions for stakeholders



Assume that 1m customers would consume some of their energy through P2P trading by 2030 without P379 being implemented. How many additional customers might take up P2P if P379 is introduced?

- 1. Negligible (<10,000 additional consumers consuming through P2P)
- 2. Small (10,000 100,000 additional consumers consuming through P2P)
- 3. Medium (100,000 250,000 additional consumers consuming through P2P)
- 4. Large (250,000 1m additional consumers consuming through P2P)
- 5. Very large (>1m additional consumers consuming through P2P)

How likely do you think it is that P379 will deliver these benefits?

- 1. Very unlikely
- 2. Unlikely
- 3. Possibly
- 4. More likely than not
- 5. Almost certain

What are your reasons for the answers given?

Questions for stakeholders



• Are there any other benefits of P379 that we have not captured?

Risks and unintended consequences



• We note that implementation of P379 and the introduction of secondary suppliers could also introduce several risks and unintended consequences. For example:

Free-riding	 Primary and secondary suppliers may have different cost bases Secondary suppliers could pick and choose certain customers Could this distort competition and/or lead to exit from the market by primary suppliers?
Complexity	 More business models and tariff options may confuse customers There may be a poor level of understanding of secondary suppliers and what they can provide Would business models (including price comparison websites) evolve to deal with this?
Supplier disputes	 Is there potential for dispute between primary and secondary suppliers in relation to switching, disconnections, etc? How might consumers be caught up in this?
Bundling	 Bundling/after-sales can have negative as well as positive competition impacts Competition and regulatory policy would need to be live to new business models that could enter

Questions for stakeholders



• Are there other unintended consequences/risks that P379 and secondary supply could introduce for consumers?







Assessment of costs



Cost estimate assessment



We are basing our cost analysis on 'best endeavours' estimates submitted by industry parties in response to a consultation that was published on 23 November.

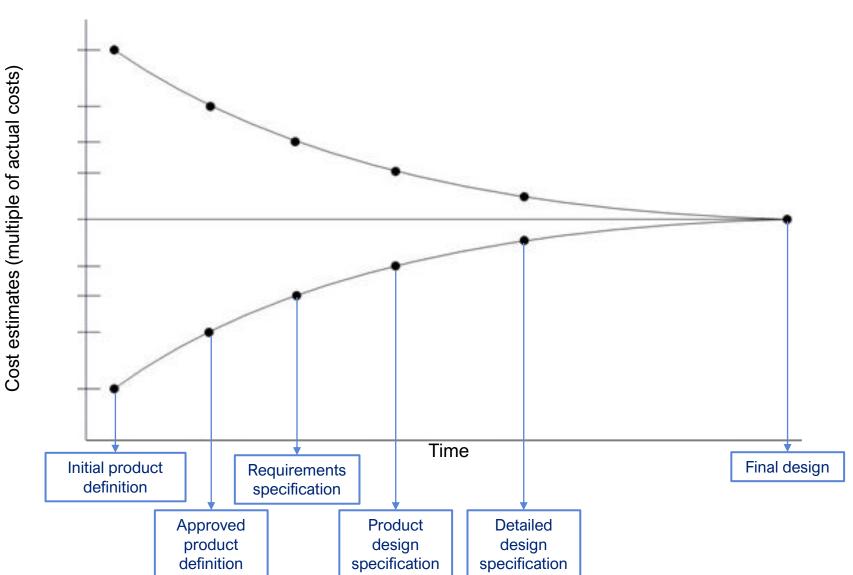
We note the inherent uncertainty in providing cost submissions at this stage of the process.

We ask industry parties to use best endeavours to provide cost estimates which are as well justified as possible – estimates will be kept confidential and only used for the purpose of this 'gateway' CBA. You will not be held to them!

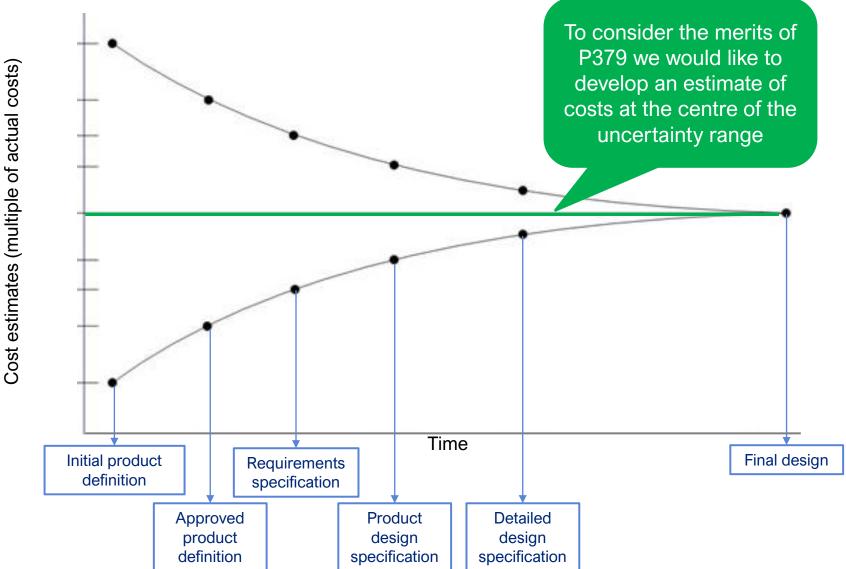
A key area of uncertainty is the level of take up of secondary supply. We will consider costs and benefits under three take-up scenarios.

Low take-up	Medium take-up	High take-up
Primary suppliers:	Primary suppliers:	Primary suppliers:
0.1% of existing	1% of existing	10% of existing
supplier customer	supplier customer	supplier customer
base	base	base
Secondary	Secondary	Secondary
suppliers: <10,000	suppliers: 10,000 –	suppliers : >100,000
customers	100,000 customers	customers

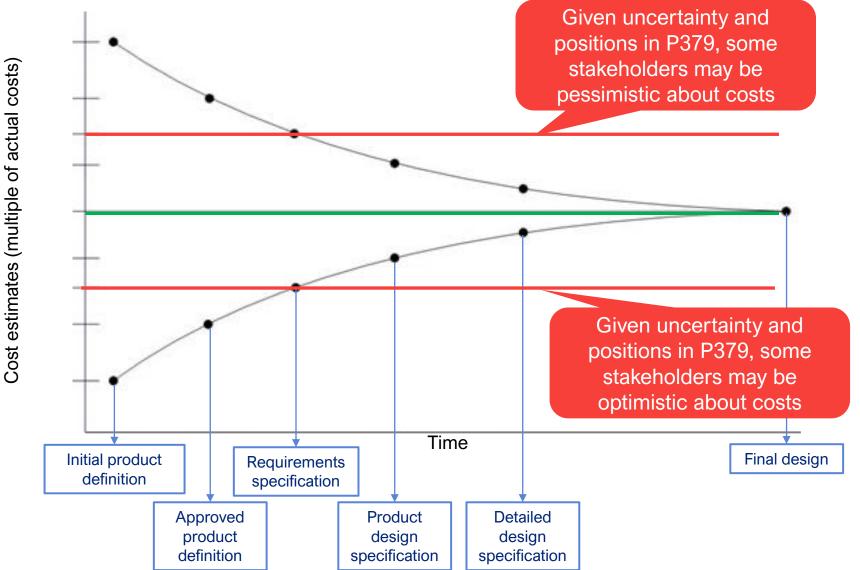




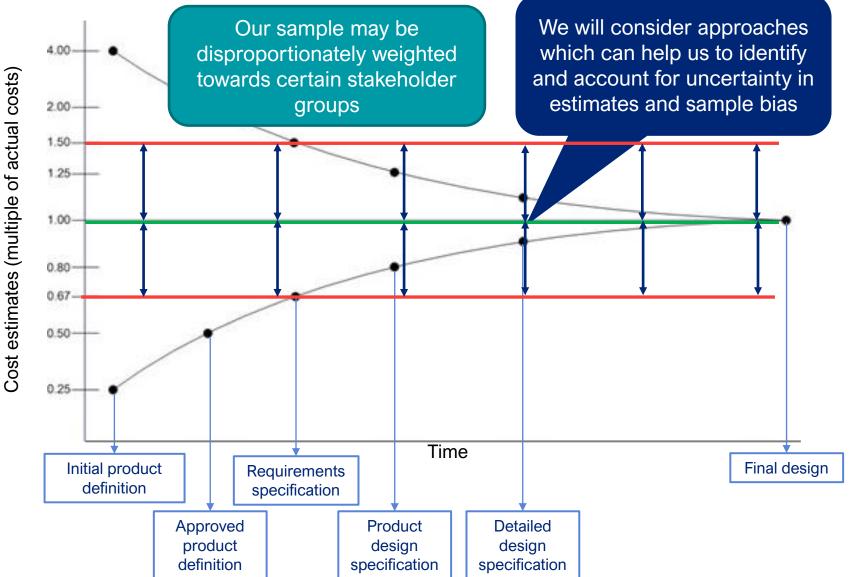












Example approaches that we will adopt



We have asked for cost estimates to be well justified and evidenced wherever possible.

We will apply more weight to responses that are better justified. E.g. for primary supplier estimates, we would expect:

- Where estimates are based on previous industry changes of similar magnitude;
- Where estimates have been developed on a bottom-up basis; and/or
- Where estimates have been set in the context of existing costs in the relevant business area

We are also working with Elexon to encourage a sample of responses that includes both those who are likely to support and are likely not to support P379. We will consider the potential for optimism/conservatism bias when assessing responses.

Finally, we are using experience in our team and with the support of Elexon to challenge the basis of cost estimates where insufficient justification is provided.



Questions for stakeholders



- 1. Where are we on the time horizon of the cone of uncertainty?
- 2. How significant is change under P379 in comparison to previous industry changes?



Direct financial costs

P379 could lead to additional financial costs for multiple stakeholders across the industry. This includes:

- Primary suppliers
- Secondary suppliers
- Half-Hourly Operator Agents
- Half-hourly Data Aggregators
- Half-hourly Data Collectors
- The Smart Data Communications Company (Smart DCC)
- Licensed Distribution Network Operators
- RECCo
- Other parties



Direct financial cost items
Cost to serve
Billing systems
Settlement systems
Other IT systems costs
Volume risk
Compliance costs
Additional supplier failures
Other costs

We are seeking to assess all costs as part of the CBA. However, we are focussing on the costs falling on suppliers in this workshop.



Hypothetical suppliers



- In the following slides we will be working through each of the financial cost items of suppliers that may be impacted by P379.
- In each case, we will ask you to provide your best estimate of the extent to which these cost areas might be impacted for two hypothetical primary suppliers:

Supplier A	Supplier B
	Mid tier supplier
Large supplier	C. 1 million customers
C. 5 million customers	Newer IT systems but now
Legacy IT systems	at scale
No interest in becoming a secondary supplier	Adapting systems to become a secondary supplier



Costs to serve



Hypothesis

- Costs to serve of primary suppliers may increase in the following ways:
 - Providing Terms and Conditions
 - Customer service and responding to queries
 - Development and operation of new tariff structures
 - Complexity of supply arrangements

- With 1 being no/negligible increase in costs and 5 being major costs driven by potential overhaul of the supply business, how significant would you expect the increase in costs to serve to be for:
 - Primary Supplier A
 - Primary Supplier B
- Please provide reasons



Billing systems



Hypothesis

 Primary supplier billing systems may need to be updated to provide accurate bills for customers with more than one supplier. They will need to ensure that customer bills can be adjusted based on the volumes provided by the secondary supplier.

- With 1 being no/negligible increase in costs and 5 being major costs driven by potential overhaul of business, how significant would you expect the increase in costs of billing systems to be for:
 - Primary Supplier A
 - Primary Supplier B
- Please provide reasons



Settlement systems



Hypothesis

• Under P379 Option 1, meter readings must be provided daily to the entity performing the splitting calculations for customers with more than one Supplier.

- With 1 being no/negligible increase in costs and 5 being major costs driven by potential overhaul of business, how significant would you expect the increase in costs of settlement systems to be for:
 - Primary Supplier A
 - Primary Supplier B
- Please provide reasons



Other IT systems costs



Your views

• Other than those already identified, are there any other potentially significant IT systems costs that P379 may introduce?



Volume risk



Hypothesis

 Primary Suppliers may be exposed to the cost of managing additional risks in respect of customers with more than one supplier. Suppliers will no longer be able to rely on supplying 100% of a customer's energy volumes in any given Settlement Period.

- What impact would it have on volume risk if the customer of a primary supplier chose to take up secondary supply?
- What costs would you expect to incur to manage this risk?



Compliance costs



Hypothesis

 Certain customer obligations may be more challenging to fulfil if the customer has more than one Supplier (for example provision of information, Guaranteed Standards of Service). Both the Primary and Secondary supplier would need to ensure that they continue to meet obligations they have in respect of that customer.

Your views

• What areas of compliance would be impacted by the take-up of a secondary supplier?



Additional supplier failures



- It is possible that an increase in participation from secondary suppliers, including potential new entrants, could increase the risk of supplier failures. This could impose costs of supplier failure on the rest of the industry.
- On a score of 1-5 with 1 indicating little to no change in risk of supplier failure and 5 indicating an increase in supplier failure risk of the order of 100%, please state how significant you consider the increase in risk to be.
- Please give your reasons.



Other direct financial costs



• Would you expect there to be any other direct financial costs to suppliers that we have not captured?



Submitting a consultation response



- Acknowledging the presence of uncertainty, how easy do you expect it to be to submit an informed cost estimate based on the understanding you have of P379 (e.g. from the Draft Business Requirements)?
- Further to the Draft Business Requirements and Interim Assessment Report, is there anything you would like us/Elexon to provide to help you submit a response?









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