

CMP308 – Minded-to decision and draft impact assessment

Sembcorp Energy UK's response

19th January 2022

Context

Sembcorp Energy UK (SEUK) is headquartered at Wilton International (Wilton), with our 2,000 acre industrial site at the heart of the Teesside industrial cluster. At Wilton, SEUK pays BSUoS as a supplier to large industrial customers, including a number of Energy Intensive Industries. Wilton also has nearly 200MW of on-site generation (Combined Heat and Power) for steam production, which pays BSUoS when exporting excess power onto the grid. SEUK also operates a fleet of fast-acting decentralised power stations and storage, which do not pay BSUoS as a result of the CMP333 and the Targeted Charging Review.

We are exposed to the risk of volatile BSUoS prices both as a generator in the wholesale market, but also managing customers' exposure. We agree with the findings of the Balancing Services Taskforce that BSUoS is not forecasted efficiently in the wholesale market, therefore creating inefficiencies and 'risk premia', the costs of which are passed on to end consumers and/or absorbed by suppliers, depending on the nature of their contract.

We also believe security of supply and Net Zero would be improved by a greater use of existing domestic generation, rather than imports over interconnectors from connected markets. Interconnectors are classified as carbon neutral and not charged BSUoS. The generators in interconnected markets are generally not charged an equivalent network charge to BSUoS¹. The extra costs in the form of BSUoS and Carbon Price Support puts GB generators at a competitive disadvantage, creating a financial distortion between interconnected markets and encouraging carbon leakage.

We agree with Ofgem's Impact Assessment and believe that CMP308 should be implemented in April 2023, in line with industry's expectations.

Kind regards,

Grace March

Regulatory Affairs Manager

Sembcorp Energy UK

Questions

1. Do you agree with our assessment that CMP308 better facilitates the Applicable CUSC Objectives?

Yes, we believe this modification facilitates ACO a), b) and e). It is positive against ACO a) as it facilitates competition between transmission-connected and embedded generation in GB and between generation in GB and European markets, as interconnected markets do not charge similar fees to generation. By removing charging distortions, it creates a levelling playing field for generation. It facilitates ACO b) by removing 'noise' from the wholesale market. This will increase the visibility of genuinely cost-reflective

¹ Please see evidence in CMP308 Workgroup report

signals, so encourage suitable investment and allow for more efficient dispatch as the wholesale prices will be based more on Short Run Marginal Cost of generation technologies and not commercial decisions about potential BSUoS costs. As BSUoS is cost recovery, recovering the revenue in the least distortive way will improve overall cost-reflectivity of the charging methodology. It facilitates ACO e) in that it aligns the methodologies of cost recovery for BSUoS and the Transmission Demand Residual, by placing them both on Final Demand.

2. Do you agree that charging BSUoS charges only to Final Demand reduces distortions between Large Generators and other forms of generation? Please explain why.

Currently Large generators in GB face a highly unpredictable network charge that other forms of generation, such as distribution-connected generators or interconnectors do not face. Those parties interact in shared market spaces, such as the Balancing Mechanism, ancillary services and the capacity market. By making Final Demand liable for BSUoS (rather than removing generators from the charging base), existing distortions in ancillary services market will be removed.

3. Do you have any views on the impact of this proposal on Behind The Meter Generation and its competitiveness?

Behind the Meter Generation will offset a greater value of BSUoS than under the baseline, but this same advantage will apply to other methods of lowering demand, such as increased energy efficient or smart technologies to actively manage demand (load shifting). For the industry as a whole, this is therefore a small distortion compared to defect in the baseline that CMP308 wishes to address.

4. Do you have any views on our reasoning on this proposal's effect on price signals or generation dispatch?

Evidence from the Second Balancing Services Task force suggested BSUoS was not forecast on a half-hourly basis within the industry, despite being a half hourly charge. We believe there will be improvements to efficiency of dispatch as there is less uncertainty in the market and dispatch will be based more accurately marginal cost.

With regards to price signals, this modification has been through significant amounts of industry discussion, was broadly approved by the Workgroup and the CUSC Panel. We do not believe there will be any negative impact on price signals with an April 2023 implementation date.

5. Do you have any views on our reasoning on this proposal's effect on competition between different generator types?

We agree with Ofgem's assessment.

6. Do you have views on our assessment of the decarbonisation impacts of this proposal, both in respect of emissions from the GB energy system and of overall emissions?

Importing power over interconnectors is less efficient due to losses. Reduced import by GB would suggest a more efficient system overall. There would be a small increase in GB emissions but the extra cost associated would also be buy increased system security, as GB becomes less reliant on international markets.

7. Do you have views on whether and the extent to which the changes proposed in this modification have already been incorporated into supplier decisions?

We have no evidence to submit, although we note that this modification has been under intense scrutiny by suppliers from the beginning, has had two Workgroup consultations (rather than the standard one), the Code Admin Consultation and now Ofgem's consultation on their Mindset-To decision. Previously

Ofgem have indicated that modifications with less industry discussion could be considered 'sign-posted' and therefore market participants should be aware. We also note that suppliers are under intense pressure, squeezed between high wholesale prices, pressure to keep bills for domestic consumers down and higher than expected, volatile network charges. We therefore understand, and agree with, some suppliers' concerns that implementation of this modification should be linked with implementation of CMP361/2.

8. Do you have views on the impact of this proposal on existing supply contracts, including the possibility of costs or delayed benefits to consumers stemming from windfall gains to industry parties, or double payments?

There is a lot of scrutiny of the supply market at the moment and competition is fierce. In the light of supplier exits last year, it is clear suppliers are operating at very tight margins. We therefore consider the risk of double payments to customers very unlikely.

9. Do you have views on this proposal's impacts on generator and supplier risks, including on exposure to volatile charges?

CMP308 by itself removes the risk from generators but obviously increases the risks for suppliers, especially those that provide long-term fixed contracts for consumers (e.g. agreed total unit rate for multiple years), as BSUoS is increasingly variable and difficult to forecast. This increased risk can be mitigated by considering CMP308 along with CMP361/2.

10. Do you have views on the interactions between this proposal and other changes in the sector, including other BSUoS charging reform proposals?

There has been a lot of discussion around BSUoS as this modification was proposed in October 2018 and put on hold for while the Targeted Charging Review (TCR) was ongoing. It is important that Ofgem are active and engaged in industry discussions to avoid the need for duplication of effort and waste of resources, both for industry participants and Ofgem. Extra rounds of consultation through separate processes delay the solution and thus delay the benefit to consumers. There has been extensive analysis of BSUoS through this Modification, the TCR/CMP333, CMP373, CMP345. It is our hope that future changes to BSUoS, such as CMP361/2, can use the information gathered from previous discussions to bring about effective change to allow consumers to appreciate the benefits as soon as possible. We therefore believe it should be possible for CMP308 and CMP361/2 to be implemented together, which will give a solution that is in the consumers' best interests, rather than a period with CMP308 alone.

11. Do you have views on the modelled assessment of consumer and energy system benefits? Please provide quantitative analysis and any further information.

We agree with the modelled assessment and it illustrates that this change is beneficial for consumers in both the short and long-term.

12. Is our assessment of non-monetised costs and benefits reasonable? Are there any other factors we should consider?

There are significant levels of investment in new types of generation technology required in order to meet Net Zero. Placing BSUoS on Final Demand only will remove this element of risk from projects which will provide services or generation and so support the system moving to a lower carbon basis.

13. Do you consider the consumer and system benefits identified in our consultants' modelling to represent a reasonable view of the potential effects of this modification?

Yes, the change has been under discussion in industry for some time now and the modelled results are in line with industry consensus. Without CMP361/2 implemented at the same time, there may be increased

risk to suppliers, which could delay or reduce the consumer benefits. We would therefore ask Ofgem to move quickly with CMP361/2 once the CUSC Panel has made their decision at the end of January. We believe the wholesale and retail markets will be able to respond quickly enough to an April 2023 implementation to achieve the benefits described in the modelling.

14. Do you consider that Ofgem has duly considered all relevant consumer and system benefits? Are there any areas which could benefit from further analysis?

We agree the analysis covers all relevant and consumer benefits but would ask that Ofgem hold in mind the analysis done for CMP361/2, which looks at the different exposure risks to different types of supplier due to the differing length of fixed term contract. We do not believe this will change the outcome of the modelling and any short term distortion to competition will be outweighed by the ongoing benefit.

15. Our modelling assumes that CfD adjustment payments designed to compensate contract holders for the BSUoS charges they face will no longer be paid in the event generation is not liable for BSUoS charges. Do you agree with this assumption, and do you have views on our assessment of the risks associated with existing CfD contracts?

We agree with this assumption and it is clear that a decision on this Modification, and CMP361/2, should be made before AR4 if at all possible.

16. Do you have views on the impacts of this proposal on end consumers, including large users and vulnerable users?

Large users are more likely to be on a pass-through arrangement for BSUoS, so may experience a 'shock' increase, but we believe lower wholesale prices will make that unlikely. Given the amount of discussion around the structure of BSUoS and the charging base, we would also expect the largest end users, such as Energy Intensive Industries, to be aware and prepared for this.

17. Do you agree with our assessment that reduced costs to generators are likely to feed through into lower wholesale prices?

We agree that there will be feed through into wholesale prices and most likely other markets, such as the Balancing Mechanism and ancillary services, where there is significant activity from large generators.

18. Do you agree with our assessment that this policy will not have any significant material impacts on vulnerable users?

Vulnerable users will receive the same benefits as wider consumers, through lower green levies and reduced risk premia in both the wholesale market and their domestic tariff.

19. Do you agree with our assessment that this modification is unlikely to lead to any significant impacts on essential services or supply chains?

We agree.

20. We would note that increases in demand costs will need to be incorporated into the Price Cap methodology. Do you have any views on this area?

The Price Cap will need to take into account the increase BSUoS rate on suppliers. If CMP308 is implemented at the same time as CMP361/2, there will be significantly less uncertainty in forecasting a figure to be built into the cap.

21. Do you agree with our proposed implementation date of 1 April 2023? Please provide your reasoning.

Yes, we do. This aligns with the Transmission Demand Residual (another cost-recovery mechanism) moving onto Final Demand, it is the date that has been included in most levels of industry discussion and



does allow enough time, if Ofgem's decision is made with appropriate speed, for industry to prepare and appropriate mitigations against unwanted consequences, such as the Price Cap, to be taken.

22. Do you have any other information which is relevant to this consultation?

No.

Response to the consultation questions

Question 1

Without government financial incentives, would you transition away from natural gas or other fossil fuels to a low carbon alternative? Please give details.

- Strongly agree

Globally, Sembcorp is committed to move to a fully decarbonised future by 2050 with significant renewables and carbon intensity reduction target by 2025 and 2030. However, we will only invest in such technologies with the appropriate market framework and support mechanisms in place.

Question 2

In order to meet our net zero carbon emissions targets, what steps would be beneficial to reform the current Good Quality CHP criteria in response to ongoing grid decarbonisation?

Good Quality CHP ensures that the benefits of CHP are actualised and it is a more efficient process than generating heat and power separately. The scheme may need to be adjusted to ensure the efficiencies of new fuel sources and processes are recognised correctly, and the comparison to non-CHP generation remains up to date as decarbonisation of the wider energy system increases. Building heat distribution systems requires greater initial investment and CHP support schemes provide the necessary return on the higher capital required. CHP support schemes should also give consideration to waste heat recovery systems that would result in greater efficiencies but may only be marginally economic without support. The size of the Wilton Industrial Estate means recovering waste heat streams may lead to viable improvements, thus increasing efficiency and lowering costs for consumers.

The more efficient CHP process should result in lower carbon emissions than separate heat and power generation, due to the lower amounts of fuel needed, but this comparison methodology needs to be updated to remain in line with developing non-CHP technologies

Question 3

Over what timescale should any changes be made (subject to constraints of legislative timing)? Please give details to explain your response.

The capital investment required to improve industrial heat is significant and therefore changes that will affect CHP providers materially should be clearly signposted at least 2 years ahead. Changes that will not result in immediate impacts to CHP providers but 'future-proof' the scheme can and should be made sooner, to encourage decarbonisation as soon as possible.

Remaining asset lifetime depends heavily on running hours, but our projects indicate the need to repower or replace some major CHP assets by 2032. In order to make the capital investment decision, support would need to be provided and committed to approximately 3 years before this. Delaying past this date is likely to create interruptions to business, delaying decarbonisation and limiting the benefits for customers.

For assets that a long remaining operational life, schemes should consider grandfathering sites that are already operational and accredited to realise the full benefits of existing CHP.

We would also note our points above about enabling the transition of biomass CHP to BECCS. We believe that the work on this should be prioritised to prevent the loss of biomass supply chains and the likelihood of falling investment in plants with only a limited remaining economic life.

Question 4

How soon are you planning to replace or retrofit your current CHP scheme? Please give details.

- Less than 5 years

But this will depend on our decarbonisation study that is underway and, again, Government support may be key if we are to achieve this nearer term target.

Question 5

What is the total capacity of the CHP system you are currently operating?

- Over 20MW

Wilton is one of the largest CHP installations in the UK, with over 200MW capacity, producing up to 460 tonnes/h of HP steam.

Question 6

What is the primary function of your installation?

- Heat

CHP at Wilton operates solely to provide heat and power to third parties – meeting customer demand is the primary function. However, most customers have specific industrial heat requirements which only sites like Wilton can provide whereas power could be imported directly from the grid.

Question 7

Do you use all generation (both heat or power) solely for on-site purposes or do you export the surplus?

- Export excess power to grid

Wilton carefully manages the CHP assets to meet customers' demand in both heat and power as closely as possible, however, we can and do export to the grid when demand for power or ancillary services to support national grid stability is high.

Question 8

Please give details of the nature and percentage split between on-site use and export of both heat and power.

Wilton generates power and heat for third parties, rather than for external processes with excess being sold. Therefore, all heat produced by Wilton is delivered to customers via our network of high pressure steam pipelines 'on-site', but is not used by SEUK. Approximately 41% of Wilton's energy production is in the form of electrical power, with 59% of energy as heat.

With regards to power, SEUK usage represents a very small parasitic load as we do not own or operate any industrial processes on site. Between January and November 2021, Wilton generated 776GWh of electrical power using CHP², of which 529GWh (68%) of power was used by our industrial customers onsite³ and 247GWh (32%) was exported on the National Grid as and when markets indicated it was needed by the system. For 2020, there was 967GWh electrical power generated onsite, of which 742GWh (77%) was used onsite by third parties and 228GWh (23%) was exported to the Grid. This means industrial customers on Wilton used equivalent of 1% of total UK wind power (offshore and onshore) in 2020⁴, just for electrical power.

Question 9

Do you use any certification to demonstrate that your generation meets any standards or to verify environmental claims e.g. Renewable Energy Guarantees of Origin (REGOs) or CHP Guarantees of Origin (GOOs)? Please give details.

Wilton is CHPQA accredited and so provides Qualifying Power Output to customers.

Question 10

If part of a heat network, do you intend to expand the scheme using your currently installed equipment?

• No

Our current network is of sufficient size with spare capacity that it already allows room for a significant increase in steam production.

Question 11

When planning a route to decarbonisation, a variety of issues may be encountered, please give details of any particular concerns you have identified that are specific to your sector or site?

As noted in the paragraphs above, there are challenges around all major decarbonisation routes. Electrification costs, CCUS viability, green hydrogen volumes and we are seeking clarity over the support for biomass CHP as a transition to “carbon negative” technology. We are also seeking clarification on how our CHP assets (gas and EfW) will be kept and utilised by the system as transition assets with lower carbon intensities than the UK average.

Question 12

² This power was generated by gas and steam turbines, Biomass CHP and EfW CHP

³ This figure represents power that was used onsite by third parties with a negligible parasitic load. Wilton also imports power from the National Grid to supplement CHP electrical power. Between January and November 2021, Wilton Energy Limited (the licensed Supplier to Wilton) supplied 19GWh (2% of all power used on-site).

⁴ Data from the Office of National Statistics gives total wind production in the UK for 2020 as 75,610GWh <https://www.ons.gov.uk/economy/environmentalaccounts/articles/windenergyintheuk/june2021>

Which of the following do you feel offers the best decarbonisation solution for your situation over the next 10 years?

- Undecided

Our ongoing decarbonisation study is looking at all options with “techno-economic” analysis and we are as yet undecided.

Question 13

When are you considering switching to a low carbon solution?

- 3-7 years

Question 14

If the technology was available and financial support for a transition from natural gas to a low carbon alternative was adequate, is there any reason you would choose not to switch?

- No

Sembcorp is committed to decarbonise. If support was available for a viable technology, we would switch.

Question 15

Which one decarbonisation measure are you most likely to consider?

- Switching to alternative fuel CHP
- Low carbon hydrogen /blended gas CHP
- Adding CCUS to your CHP
- BECCS
- Heat pump
- Low carbon grid power
- No suitable technology currently available
- Other

Our ongoing decarbonisation study is looking at all of these options and we are as yet undecided. We are pursuing BECCS at our site but this would not be used as an alternative to CHP.

Question 16

The package of financial support available is the most important factor in making decisions to switch to a low carbon solution? Please give details.

- Strongly agree

As we have outlined above in our response there are a number of options available for fuel switching but all are currently economically challenging. Government support for a given technology to make it

economically viable would be a game changer.

Question 17

What are the top three barriers you perceive to retrofitting or upgrading to low carbon solutions?

Cost

Technological viability

Reliability of upgraded assets – at our industrial site we need a very high degree of reliability for steam production for our customers that must be available 24 hours a day.

Question 18

Do you agree that the introduction of a carbon measurement as part of the wider CHPQA would be beneficial to achieving Net Zero goals? Please give details.

- Agree

Measurement is key to ensuring targeted action where the biggest difference to carbon emissions can be made.

Question 19

Do you agree with a phased reduction of natural gas CHP support leading to full cessation rather than ending all support on a specified date? Please give details.

- Strongly agree

We need the transition to be economically viable and we need to ensure that the technologies we switch to are viable and reliable. At a site like ours where we need to provide a constant steam supply for our customers we will need to keep gas back-up as we trial new decarbonised assets and a phased support reduction supports such a trial and transition period.

Question 20

If necessary, over what period should any taper of support be considered?

- Over 10 years

As noted above gas will be needed as a back-up support as we trial new technologies and make them reliable. First-of-a-kind technologies are by their nature less reliable and we need to ensure we can provide steam at all times, we need to gas units to back up our transition plans.

Question 21

Should any taper system offer differentiation on the following elements?

- Location in industrial cluster/dispersed site

As we have explained above there must be a differentiation made between larger industrial CHP sites and smaller units. Larger sites have relevant considerations like international competitiveness, national security through regional and national supply chains, large numbers of job retention and creation. It is very important to treat larger industrial sites carefully and to allow a slower transition period for heavy energy intensive industry that utilises steam constantly.

Question 22

What are your views on proposals to close CHPQA certification to new applications for unabated natural gas CHP plant in the short term? What date would you propose and why?

Investments in new gas units are unlikely to be forthcoming given the challenges for unabated gas units going forward and support for such investments would not seem economical. Maintaining support to existing units would seem like the strongest option for the consumer (due to the investment already having been made), whilst de-incentivising new unabated gas investment.

Question 23

What form should any future support take?

- Continue existing support/exemptions
- Grants/loans to facilitate replacement, retrofit or modification

Question 24

Would you change your dispatch/run time to reduce displacing lower carbon generation if incentives were available? Please give details.

- Strongly agree

Our assets produce power and steams for our own customers on our own private power and heat networks so we would be unlikely to displace other generation. However, Sembcorp are committed to decarbonisation and through our Whitetail Clean energy project we are discussing a “dispatchable power agreement” with BEIS that would ensure our CCUS connected facility would only displace non-abated assets and not renewables. We would be very open to agreeing to the same dispatch hierarchy for CHP if the right incentives were in place and lower carbon alternatives were available.

Question 25

What effect will this have on your run times?

- Decrease

Question 26

Will switching to a low carbon solution allow and encourage you to increase run time and export to the grid?

Again, our primary focus is supplying our industrial customers through our CHP assets rather than exporting to the grid. However, this can only be answered with a detailed economic assessment of options. If a low or zero carbon solution is economically viable then it is possible that this would increase run time through exports to grid but this would be a function of market prices, competition from other low carbon or unabated carbon and the system stability needs of the grid

Question 27

If you are considering changes to your site, do you know what support is available for your proposed new set up? Please give details.

We would appreciate further information on what support is available – especially since we have a wide range of generation options to decarbonise: gas, EfW and biomass.

Question 28

Do you feel the CHPQA certification would remain beneficial for your situation if one or more of the reform options mentioned were implemented?

- Agree

We need to signal the great importance of CHP to our industrial cluster.

Question 29

What incentives are preferable?

- New support/exemptions for low carbon fuels
- Grants/loans to facilitate upgrades and modification
- Incentives linked to a direct carbon measurement