

# Impact of increased settlement frequency on the RO: a review for BEIS

02 March 2021

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# About this report

- BEIS have requested Cornwall Insight to review a new approach (Strawman) to settlement for the Renewables Obligation (RO) scheme and its impact on the Renewables Obligation Certificate (ROC) market
- The Strawman, and additional Strawman Variant, look to create a new quarterly cycle for obligation payments (i.e. splitting the obligation into four instalments) within the annual obligation setting and buy-out structure for the scheme. The main aim of this approach is to reduce the ‘moral hazard’ of potential supplier default and non-payment of the RO, which has traditionally been 19-months, down to 10-months in the Strawman or 6-months in the Strawman Variant through the removal of Late Payments
- Cornwall Insight has analysed the potential impacts of these changes in terms of their impacts on ROC trading, market timing and functioning, impacts on participants and their commercial arrangements and wider market change. Analysis has been supplemented by in-depth interviews with a range of market participants (suppliers, traders, auction sellers, generators)
- This report provides Cornwall Insight’s analysis and summary findings

# Executive summary

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# Summary

- Our high-level analysis of the Strawman approaches has shown that in principle both could be implemented without fundamentally undermining scheme design and functionality. However, both approaches would lead to significant changes in typical scheme practices by market participants which we detail here
- These issues are primarily:
  - Supplier payments and associated mutualisation risk
  - Seasonal ROC issue and the impact on supplier portfolios
  - Market liquidity and 'free' ROCs for trade
  - General trading practices
  - ROC issue timings
- Market participants assessed are:
  - Suppliers (**termed S** in our impact categorisation)
  - ROC generators (**termed G** in our impact categorisation)
  - Traders and brokers of ROCs (**termed T** in our impact categorisation)

# Summary

- Our Red, Amber, Green (RAG) status impact details the potential severity of issues for each participant, based on the initial brief of assessing Strawman impacts on supplier compliance, ROC trading, market timing and functioning, commercial arrangements and wider market change
- To inform our views, we also interviewed five different market stakeholders to collect feedback on the BEIS Strawman and Strawman Variant. These market participants included two generators (utility scale and developer), two suppliers (domestic and business) and an auction platform provider
- General feedback from stakeholders was positive, agreeing that the proposal was likely be better positioned to combat problems arising from mutualisation, and that it would be more suitable than the proposals put forward in the recent Mutualisation Consultation
  - Further stakeholder feedback is detailed in the following sections

# Summary - Strawman

ROC market criteria/ issue	RAG Impact	Details
Supplier payments and mutualisation risk	Low – S	Moving to quarterly obligation payments and compliance significantly reduces risks of supplier failure building up over a full compliance period.
Seasonal ROC issue and supplier portfolios	High – S,T	Our analysis shows that suppliers with high proportions of wind or solar ROCs in their portfolios could see periods of significant surplus and shortage of ROCs compared to quarterly obligation levels. A 100% quarterly compliance level would limit a suppliers ability to use ROCs between quarters and could lead to buy-out payments for suppliers typically 100% compliant with the scheme through ROC purchases.
Market liquidity and 'free' ROCs for trade	Medium – S,T	A move to quarterly levelisation would impact typical ROC trading cycles and trading behaviour. Our analysis shows that only a limited number of ROCs (~5% - 15%) are freely available and traded outside of traditional PPA agreements, which could limit market liquidity in quarterly cycles. Although for generators, the certainty of ROC payments through PPAs remains guaranteed.
	Low - G	
General trading practices	Low – S,T,G	With most generators, outside of utility-owned projects, securing ROC value through PPAs, we do not see a material impact to commercial arrangement under either the Strawman or Strawman Variant. As highlighted above, some suppliers may face new trading requirements depending on quarterly obligation setting, but general parameters would be unaffected. This was also reflected in stakeholder feedback.



# Summary – Strawman variant

- Issues highlighted for the Strawman approach were also equally applicable to the Strawman Variant in terms of impact rating and consequences for the market
- Additionally, one further issue is noted from both Cornwall Insight analysis and stakeholder feedback around ROC issue timings and the limited window for submission under the Strawman Variant. This is discussed in more detail in the Strawman Variant section of the report

ROC market criteria/ issue	RAG impact	Details
ROC issue timings	Medium – S,T,G	<p>CI analysis shows that there is a potentially significant volume of ROCs associated with generation in one quarter, but which are not issued by the end of the next quarter (around 2% - 6% on average), i.e. issued after the ROC Issue Schedule set out in the Strawman Variant. This could have the affect of moving ROCs into later quarters, potentially creating oversupply or changing market dynamics.</p> <p>Strict 100% obligation levels in each quarter could also mean these ROCs are “stranded” and not used for other quarters. Alternatively, they could be banked subject to existing ROC banking rules or would have to be sold on to other suppliers or traders which may impact cost.</p> <p>Stakeholder feedback was unanimous in concern around ROC issue timings and the potential impact of ROCs being issued outside the new quarterly compliance windows.</p>

# Next steps

- To address some of these concerns, we have also proposed potential mitigations, informed by stakeholder feedback, to mitigate some of these impacts with potential changes
- We would propose that these mitigations and the general Strawman designs are explored further, including with market participants, to further understand potential issues on the ROC market

# Strawman

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# Summary of Strawman

- Under the BEIS Strawman proposal, the April – March Obligation Period, and the annual obligation that applies to it, would be retained. However, suppliers would be required to discharge the obligation in four instalments:
  - The instalments would relate to electricity supplied during the following periods: April – June; July - September; October – December; January – March
- Following each quarter, each supplier's electricity supply volume would be determined, and the obligation would be applied to that quarter's supply volume
- Existing settlement arrangements would be applied to each quarter (i.e. five months for ROCs/buy-out payments and an additional two months for late payments), and the buy-out/late payment funds would be redistributed annually
  - The shortfall in the buy-out/late payment funds would continue to be determined on an annual basis and mutualisation determined accordingly
- **The issues and impacts outlined in the following sections are relevant to both the Strawman and Strawman Variant options outlined by BEIS**

# Strawman Timeline

Figure 1: Traditional RO Timeline (CP19)

	Generator	Supplier	BEIS / Ofgem
Oct 19			01 Oct - BEIS publish obligation (ROCs/MWh)
Nov 19			
Dec 19	<b>Current RO Timeline CP19 2020-21</b>		
Jan 20			
Feb 20			Ofgem sets buy-out in money of day
Mar 20			
Apr 20	Month of generation - meter readings to be taken at start / end of months Two-month window to submit data to Ofgem. Data must be submitted by the end of the second month ROCs issued by Ofgem (~2.5-months after generation)	Trading of ROCs and collection of RO costs from consumer bills	
May 20			
Jun 20			
Jul 20			
Aug 20			
Sep 20			
Oct 20			
Nov 20			
Dec 20			
Jan 21			
Feb 21			
Mar 21			
Apr 21	Supply Volume Confirmation	≤1 Jun - Report estimated OP supply volumes (MWh) to Ofgem	
May 21			
Jun 21	Compliance Period	≤1 Jul - Report final OP supply volumes (MWh) to Ofgem	>1 Jul - Ofgem confirms total UK RO and publish UK obligation for OP
Jul 21		≤31 Aug - Make buy-out payment	
Aug 21		≤1 Sep - ROCs presented to obligation	>1 Sep - Ofgem confirms compliance / non-compliance
Sep 21	Late Payments	≤31 Oct - late payments to Ofgem	
Oct 21			
Nov 21			<1 Nov - Ofgem redistribute buy-out funds to compliant suppliers
Dec 21			
Jan 22			<1 Jan - Ofgem redistribute late payment funds to compliant suppliers

Source: Cornwall Insight

Figure 2: Strawman RO Timeline (CP19)

	Generator	Supplier	BEIS / Ofgem	
Oct 19			01 Oct - BEIS publish obligation (ROCs/MWh)	
Nov 19				
Dec 19	<b>Strawman RO Timeline</b>			
Jan 20				
Feb 20			Ofgem sets buy-out in money of day	
Mar 20				
Apr 20	Month of generation - meter readings to be taken at start / end of months Two-month window to submit data to Ofgem. Data must be submitted by the end of the second month ROCs issued by Ofgem (~2.5-months after generation)	Q1. Trading of ROCs		
May 20				
Jun 20				
Jul 20				
Aug 20		Q2. Trading of ROCs		
Sep 20				
Oct 20				
Nov 20		Q3. Trading of ROCs		Submit ROCs/buy-out
Dec 20				
Jan 21				
Feb 21	Q4. Trading of ROCs	Late payments		
Mar 21		Submit ROCs/buy-out		
Apr 21	Supply Volume Confirmation			
May 21		Late payments		
Jun 21		Submit ROCs/buy-out		
Jul 21	Compliance Period	Late payments	>1 Jul - Ofgem confirms total UK RO and publish UK obligation for OP	
Aug 21		Submit ROCs/buy-out		
Sep 21			>1 Sep - Ofgem confirms compliance / non-compliance	
Oct 21		Late payments	Assumed reconciliation of annual compliance	
Nov 21	Late Payments		<1 Nov - Ofgem redistribute buy-out funds to compliant suppliers	
Dec 21				
Jan 22			Jan - Q4 Late payments funds redistributed	

Source: Cornwall Insight

19-Month Moral Hazard

10-Month Moral Hazard

# Potential issue: Seasonal ROC issue

Figure 3: ROC issue profiles by quarter as a proportion of total ROC issue by technology during CP18

Technology	Q1 ROC issue Apr – Jun 2019	Q2 ROC issue Jul – Sep 2019	Q3 ROC issue Oct – Dec 2019	Q4 ROC issue Jan – Mar 2020	Overall contribution to ROC Supply
Offshore wind	17%	20%	28%	36%	45,677,223 (40%)
Onshore wind	18%	19%	26%	37%	30,381,392 (27%)
Solar PV	38%	36%	10%	16%	9,807,552 (9%)
Fuelled	22%	23%	27%	27%	25,674,388 (22%)
All ROCs	20%	22%	26%	32%	114,607,359
Feed in Tariff Quarterly Demand (MWh)	58,685,827.88 (22%)	60,936,221.88 (23%)	72,390,456.88 (28%)	70,786,414.88 (27%)	

Source: *Ofgem Renewables & CHP Register*

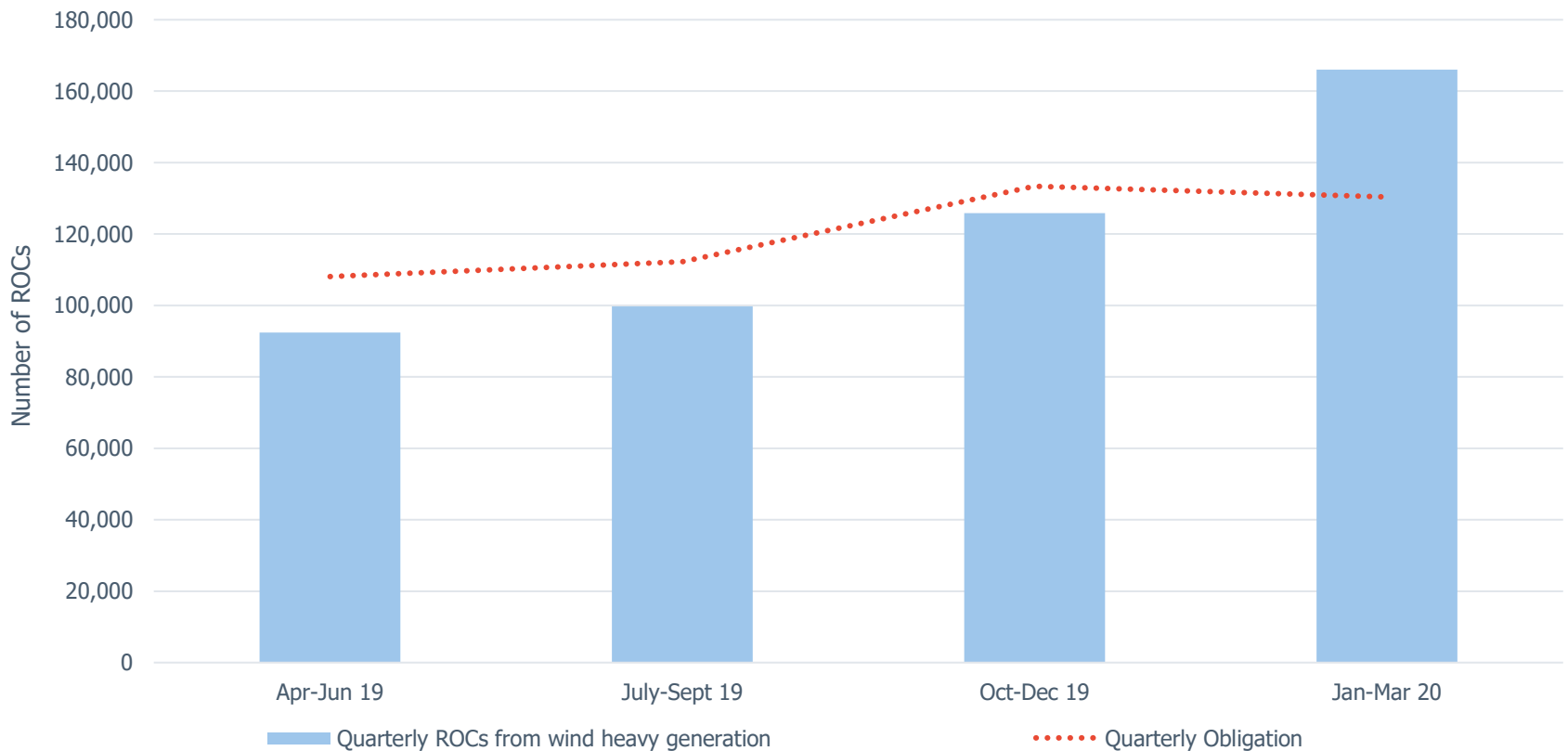
- One issue to be considered for this Strawman approach is the seasonal nature of ROC issue and the fact that month-on-month issue can vary greatly due to technology characteristics
- This is most clearly seen with wind and solar technologies which show a clear seasonal profile to ROC issue compared to other technologies such as fuelled (biomass, energy from waste, landfill gas and sewage gas)
- Figure 3 above shows the seasonal pattern for CP18 with the percentage of ROC issue by quarter against the total ROC issue for that technology

# Potential issue: Seasonal ROC issue

- The seasonality of ROC issue could create problems for quarterly compliance, especially if a full 100% level of obligation was set at the end of each quarter. This would be more pronounced under the Strawman Variant option without the buffer time of a late payments period
- Suppliers who would typically meet 100% of their obligation through ROCs (generally seen as good practice and a key incentive of the scheme design) could be in a position of significant shortage or surplus in certain quarters, whereas under the current annual obligation they would have the ability to collate the seasonal ROC issue into an annual amount
- We have created two example portfolios (discussed in Figures 4, 5 and 6) for how suppliers who meet 100% of their obligation through ROCs may source them in the market:
  - Figures 4 and 5 shows an onshore wind weighted profile with 80% of ROCs sourced through onshore wind and 20% coming from a mix of 'other technologies'
  - Figure 6 shows a solar PV weighted profile with 80% of ROCs sourced through solar PV and 20% from 'other'
- For each of the scenarios, the theoretical supplier has an annual demand of 1,000,000kWh, which would equate to a ROC demand of 484,000 ROCs in CP18 (based on an RO Obligation of 0.484ROCs/kWh). As they sourced 80% of their generation from onshore wind or solar, this gives an onshore wind or solar obligation of 387,200 ROCs, and 96,800 to be sourced from 'other technologies'
- A monthly ROC output figure was then determined for the onshore wind or solar, based on the percentage of the total number of ROCs produced for that technology type which were produced for each calendar month, multiplied by the 387,200 figure
  - These percentage figures were then used to determine the number of ROCs of the 387,200 requirement which would be produced on a quarterly and monthly basis
  - ROCs from 'other technologies' are assumed to be equally split each month for CP18
- We see these as appropriate examples, with our PPA market research finding that many suppliers will focus on certain technologies due to expertise or competitive advantage. This focus will naturally translate into the ROC technology mix that a supplier will hold too

# Potential issue: Seasonal ROC issue

Figure 4: Quarterly ROC settlement for a wind heavy (80%) supplier



Source: Cornwall Insight



# Potential issue: Seasonal ROC issue

- As highlighted in Figure 4 on the previous slide, there is the potential for suppliers to be short of ROCs in quarterly submission periods under the Strawman depending on their portfolio. Figure 5 shows a theoretical supplier whose portfolio is wind heavy, comprising 80% wind generated ROCs and 20% 'other technologies'.
- As our calculations are for a supplier who would source 100% of their obligation through ROCs, then they remain 100% compliant in our scenario. However, the Strawman still means that across the year, 79,447 ROCs (~16%) would need to be moved between quarters. This would rely heavily on prompt ROC issue and good planning from the supplier. Further, it also results in increased pressure on the final quarter to produce ROCs and make up for previous shortfalls. However, this is an issue which is seen to a certain extent in current auctions, with suppliers purchasing ROCs in the final months of the obligation period if they have a shortfall in their portfolio. The impact on this from the Strawman would depend on supplier trading approaches. Additionally, if ROC production is lower than expected, or there is delays in ROC issue, then there could be a problem for the supplier who may need to pay the buy-out price
- Applying this to the Strawman Variant, there would be a limited ability for suppliers to use ROCs from different quarters due to the shorter submission window. This would be a significant issue for suppliers and would be exacerbated by later ROC issue or by unplanned outages
- It should also be noted that in the reverse situation of too many ROCs in the final quarter, banking these isn't considered to be 'free' for suppliers who would have to account for deferred income and uncertain recycle values in the next CP

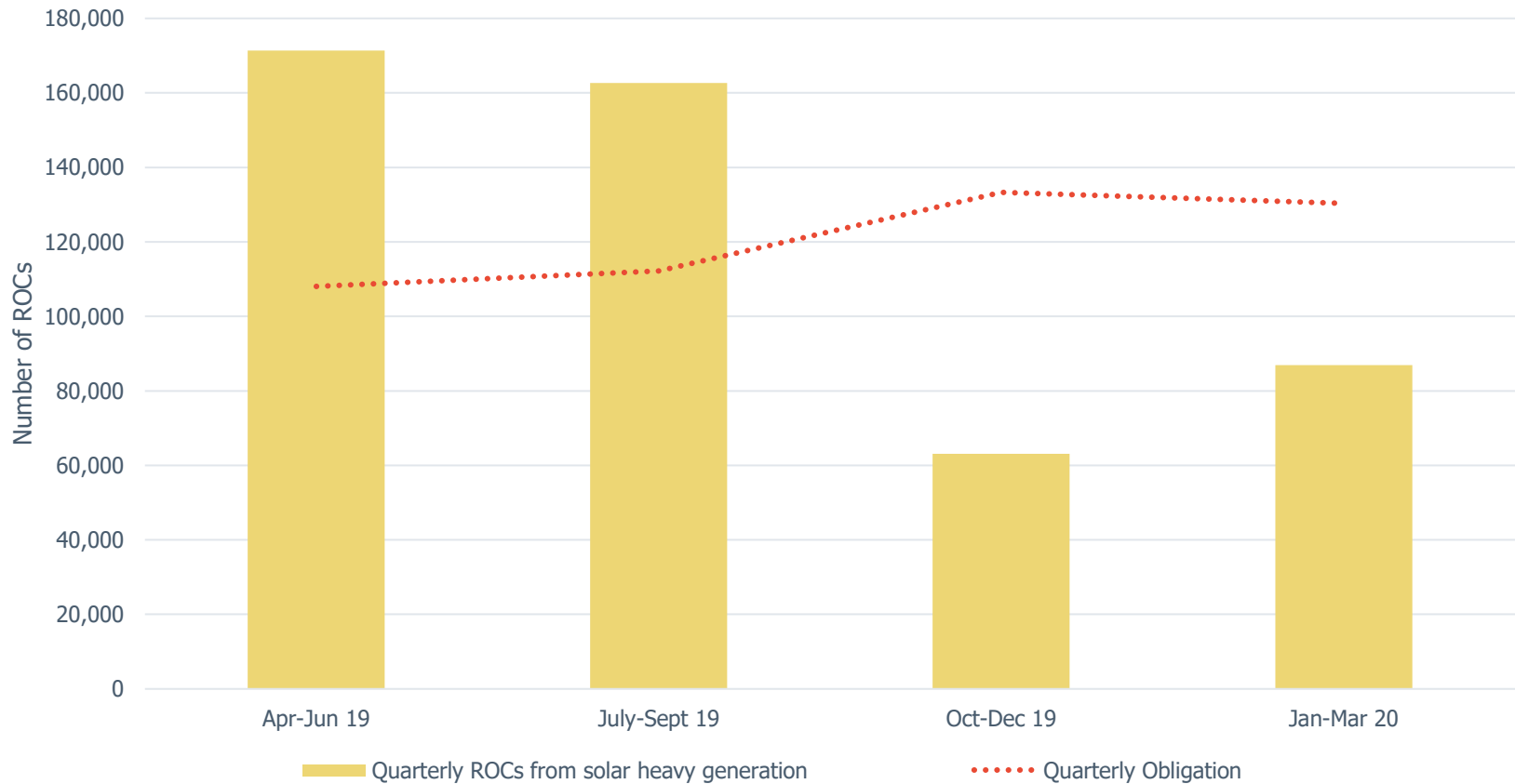
**Figure 5: Quarterly ROC settlement for a wind heavy (80%) supplier**

	% of total CP18 Onshore Wind ROCs each month	ROCs from Onshore Wind	ROCs from 'Other technologies'	Quarterly Obligation	Quarterly ROC Total	Missing ROCs	Quarterly Submission
Apr	7.2%	27,962	8,067				
May	4.6%	17,753	8,067				
Jun	5.8%	22,530	8,067	108,082	92,445	-15,637	Use from Q2 15,637
Jul	5.1%	19,751	8,067				
Aug	7.4%	28,466	8,067				
Sep	7.0%	27,281	8,067	112,227	84,061	-28,166	Use from Q3 28,166
Oct	8.4%	32,369	8,067				
Nov	7.0%	27,011	8,067				
Dec	10.9%	42,264	8,067	133,322	97,678	-35,644	Use from Q4 35,644
Jan	12.7%	49,208	8,067				
Feb	13.5%	52,449	8,067				
Mar	10.4%	40,155	8,067	130,368	130,368	-	
<b>Total</b>	<b>100%</b>	<b>387,200</b>	<b>96,800</b>	<b>484,000</b>			<b>79,447</b>

Source: Cornwall Insight analysis from Ofgem's Renewables & CHP Register

# Potential issue: Seasonal ROC issue

Figure 6: Quarterly ROC settlement for a solar heavy (80%) supplier



Source: Cornwall Insight

# Potential issue: Seasonal ROC issue

- Using CP18 as an example, the profiles show how the supplier could be significantly short or long on ROCs under quarterly obligation processes
- There are some mitigating measures that the supplier could use including:
  - **Buying or selling excess ROCs through auction platforms or bilateral trades with other suppliers.** However, this relies on 'free' ROCs being available in the market and the extent of market liquidity in each period. Additionally, many suppliers will likely be short at the same time due to ROC issue trends for wind and solar technologies, potentially pushing up ROC prices in “short” quarters and reducing them in “long” quarters
  - **Changing their purchasing mix of ROCs to ensure a smoother quarterly profile.** An issue here is the longer-term nature of ROC purchasing through PPAs, meaning suppliers could take many obligation periods to change their portfolio structure and therefore be exposed to impacts in the short to medium term. Offtakers may also see certain technologies as less attractive to their portfolio of ROC PPAs, potentially dampening competition in the ROC PPA market. This potentially has a knock-on impact in regard to a supplier's Fuel Mix Disclosure (FMD) and Renewable Energy Guarantee of Origin (REGO) trading strategy. As a result, this could impact supplier marketing approaches in relation to types of renewables in their fuel mix
  - **Paying the buy-out price for any ROCs not sourced against their obligation.** This would go against many supplier practices and incentives in the scheme to purchase ROCs to ensure a discount against buy-out and gain access to recycle values
- Mitigations would also entail extra cost for suppliers – likely passed through as greater percentage ROC discounts for generators or factored into supply contracts

# Alternative options to address seasonality issue

- To address this potential issue we have considered a number of minor modifications that may help lessen the impact of changes on market participants
  - **A rising scale approach:** Suppliers could be given a fractional obligation percentage by the end of the quarter – at perhaps 80% - of which to meet obligation levels. With the remaining quarters utilised to true up this value to 100% for all quarters across the whole compliance period. This would give suppliers with seasonal ROC profiles some ability to mitigate and manage these flows in the year
  - **Good supplier or proof of contract principle:** Suppliers who meet their obligation with a high or 100% degree of ROCs but may be short or long for particular quarters would be given discretion on their seasonal profiles. Evidence could be provided to show contracts or “expected ROCs” that they will acquire in the market, helping them limit exposure to buy-out payments they would not otherwise pay for under current market conditions
  - **Buy-back or credit mechanism:** Suppliers who have to pay the buy-out in certain quarters but would otherwise submit 100% ROCs for compliance could be given a “buy-back” option under an annual reconciliation approach to allow them to be refunded buy-out payments once ROCs were finally submitted outside of the permitted quarterly windows. An alternative could be payment delayed in the case of a supplier waiting for ROCs
- To note – alternatives such as a weighted quarterly or quarterly specific obligation level have not been considered to their complexity and material change on ROC scheme functioning (e.g. quarterly headroom setting changes)

# Alternative options to address seasonality issue

Alternative option to address seasonality issue	RAG Impact for supplier compliance	Additional comments
<b>Rising scale approach</b>	Low – implemented into strategies – but increased risk of non compliance	<ul style="list-style-type: none"> <li>• More flexibility for suppliers to adjust trading positions and portfolios to ensure ROC seasonality can be managed across the year</li> <li>• But limits the impact of quarterly compliance and reduces supplier payments from 100% level which is the stated aim of the Strawman change</li> </ul>
<b>“Good supplier” approach</b>	Medium – additional complexity and administration	<ul style="list-style-type: none"> <li>• Helps preserve the current approach of many suppliers who respond to ROC market incentives and buy/trade ROCs to meet obligation levels, therefore ensuring generator payments</li> <li>• Visibility, transparency and proof would be an issue for many to show ROC issue in future quarters against current quarter obligations</li> <li>• Complex and potentially more costly for Ofgem to administer and police, and potentially causes cash flow concerns for the administrator</li> </ul>
<b>Buy-back and annual reconciliation approach</b>	Medium – credit requirements and cost	<ul style="list-style-type: none"> <li>• Helps preserve the current approach of many suppliers who respond to ROC market incentives and buy/trade ROCs to meet obligation levels, therefore ensuring generator payments</li> <li>• Would lead to double payment for some suppliers in purchasing ROCs that might not be used for a specific quarter but also paying buy-out in “short” quarters</li> </ul>

# Potential issue: Trading Practices

- A further factor for quarterly compliance – which comes as a further consequence of the seasonal nature of ROC issue – would be the ability of ROCs to be traded and secondary traded to ensure compliance across the market
  - For instance from a supplier “long” on wind ROCs to one who’s “short” due to having a more solar based ROC portfolio
- ROCs can be secondary traded in the market to allow for these issues to mitigated. But not all ROCs will be available to support this owing to typical contractual practices. Typically, ROCs are traded:
  - **Directly through PPAs on a “pay as produce” deal:** where a supplier will pay a set fee or percentage discount against the buy-out price for all power and ROCs produced
  - **Fixed price PPA/ ROC deal:** where a certain fixed volume of ROCs will be passed through to allow a supplier to hedge their ROC position
  - **Brokered/traded ROCs:** where ROCs are traded separately, or secondary traded on from an initial PPA deal, to other traders or suppliers
  - **Auctioned:** where ROCs are traded separately, or secondary traded on from an initial PPA deal, through an auction platform to create competitive bidding processes

# Potential issue: Trading Practices

- Analysis from Cornwall Insight indicates most ROCs will be traded directly with power in a PPA to a third-party or through an “internal PPA” in the case of a vertically integrated utility
  - Most of these deals are also long-term (10-15 years in nature) and support suppliers in their ROC positions and meeting obligations
- The availability of ‘free’ ROCs openly traded on the market is therefore restricted and could have an impact on the ability of suppliers to trade and meet quarterly obligations
- Stakeholder feedback supported this concern
- The ability of ‘free’ ROCs in the market could also impact traders and brokers of ROCs who in some quarters may see higher or lower activity. They could also be left in a situation of having stranded ROCs between quarterly periods

**Figure 7: % ROCs under different trading strategies deployed in the market**

ROC trading option	% of ROCs in this arrangement (CI estimates and analysis)
Third-party / internal pay as produced PPA	~80% - ~90%
Fixed ROC deal / PPA	~1% - ~3%
Traded / brokered	~5% - ~15%
Auction platforms	1% - 2% (1.0mn - 1.5mn)

Source: Cornwall Insight

# Stakeholder feedback (1)

- Cornwall Insight interviewed five different market stakeholders to collect feedback on the BEIS Strawman and Strawman Variant. These market participants included:
  - Two generators (utility scale and developer)
  - Two suppliers (domestic and business)
  - One auction platform provider
- General feedback from stakeholders was positive, agreeing that the proposal was likely better positioned to combat problems arising from mutualisation, and that it would be more suitable than the proposals put forward in the recent Mutualisation Consultation
- Positive feedback included:
  - One stakeholder had submitted a proposal for quarterly payments in their consultancy response
  - “Switching to quarterly payments would flush out suppliers who aren’t committing”
    - i.e. accelerate “inevitable supplier failures”
  - Stakeholders did not believe it would materially impact how ROCs are traded via PPAs
    - They noted the general process around monthly/quarterly payment around ROC issue within PPAs would be maintained and quarterly compliance would not change processes or payments here



# Stakeholder feedback (2)

However, concerns were raised, and these included:

- Delays to ROC issue was reported as a concern by multiple stakeholders.
  - Issues such as metering faults causing data inaccuracies can cause delays in ROCs being issued. It is understandable that these issues need to be resolved, but this was flagged as a potential barrier by multiple stakeholders, as delays could potentially impact generator revenue if they can't find a buyer, or if prices fluctuate significantly between the periods in which ROC issue was supposed to happen and when it actually happened
    - One generator thought that ROC issue delays could worsen with a move to quarterly compliance, compounding the delays normally seen once a year at the end of a CP
- Either Strawman change could create “punishment” for typical “good suppliers” who have previously been 100% compliant on an annual basis
  - Stakeholders interviewed where those who sourced 100% of their obligation through ROCs, incentivised into doing so as a cost saving against paying the buy-out
  - Quarterly compliance and seasonality in ROC issue could be commercially disadvantageous for some of these suppliers if they had to instead pay the buy-out fee

# Stakeholder feedback (3)

- Stakeholders also suggested alternative opportunities for improvements to the RO scheme through the implementation of quarterly obligations:
  - Suppliers could put forward credit/collateral or pay the buy-out, and then reclaim after submitting ROCs
    - This could mean that for suppliers with wind heavy ROC portfolios, they are able to benefit from meeting their obligation for Q1 and Q2 of the obligation period through paying the buy-out price when they are short on ROCs, and then in Q3 and Q4 when they are long on ROCs, they would be able to submit these and recover the buy-out payments previously made
    - However, this would potentially lead to double payment from suppliers which could further tie up revenues and result in higher costs for consumers
  - A stakeholder wondered if ROC issue could be reduced to similar timescales of REGOs
  - A ‘Good supplier’ principle could be solved through offering a grace period for those with a good track record of submitting ROCs on time
    - One participant suggested that a payment matrix similar to that used in the Distribution Use of System (DUoS) charges could be afforded based on a company’s record
  - All stakeholders interviewed suggested that any changes should be linked to the move to fixed-price ROCs from 2027 if that is to go ahead
    - However, one stakeholder raised the concern that moving to a fixed-price ROC could remove the need for auction platforms and the benefits of market liquidity these provide

# Strawman Variant

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# Summary of Strawman Variant

- The Strawman Variant is a similar proposition, but is a more ambitious variant which would look to further reduce the ‘moral hazard’, from 19 months to 6 months
- Suppliers would be required to provide electricity supply volume data to Ofgem by the first day of the third month following each quarter (i.e. for Q1 April – June, submission is required by 1 September)
- They would then be required to meet each quarter’s obligation with ROCs and/or buy-out payments on/or before the last day of the 3rd month following each quarter (i.e. Q1 obligation must be settled on or before 30 September)
  - BEIS note that under Ofgem’s ROC issuance schedule, ROCs are issued to generators ~2.5 months after the month in which the electricity to which they relate was generated. Therefore, in this example, June ROCs would have been issued just a couple of weeks before the April – June settlement deadline (although they could still be redeemed in subsequent quarters, or the following year, subject to existing ‘ROC banking’ rules)
- The Strawman Variant would see late payments abolished
- **As noted in the previous section, the issues and impacts outlined for the original Strawman are also relevant to this variant. Here, we touch on one key impact that would have more consequence for the variant option**

# Strawman Variant Timeline

Figure 8: Traditional RO Timeline (CP19)

	Generator	Supplier	BEIS / Ofgem
Oct 19			01 Oct - BEIS publish obligation (ROCs/MWh)
Nov 19			
Dec 19	<b>Current RO Timeline CP19 2020-21</b>		
Jan 20			
Feb 20			Ofgem sets buy-out in money of day
Mar 20			
Apr 20	Month of generation - meter readings to be taken at start / end of months Two-month window to submit data to Ofgem. Data must be submitted by the end of the second month ROCs issued by Ofgem (~2.5-months after generation)	Trading of ROCs and collection of RO costs from consumer bills	
May 20			
Jun 20			
Jul 20			
Aug 20			
Sep 20			
Oct 20			
Nov 20			
Dec 20			
Jan 21			
Feb 21			
Mar 21			
Apr 21			
May 21	Supply Volume Confirmation		
Jun 21		≤1 Jun - Report estimated OP supply volumes (MWh) to Ofgem	
Jul 21		≤1 Jul - Report final OP supply volumes (MWh) to Ofgem	>1 Jul - Ofgem confirms total UK RO and publish UK obligation for OP
Aug 21	Compliance Period	≤31 Aug - Make buy-out payment	
Sep 21		≤1 Sep - ROCs presented to obligation	>1 Sep - Ofgem confirms compliance / non-compliance
Oct 21		≤31 Oct - late payments to Ofgem	
Nov 21	Late Payments		<1 Nov - Ofgem redistribute buy-out funds to compliant suppliers
Dec 21			
Jan 22			<1 Jan - Ofgem redistribute late payment funds to compliant suppliers

19-Month Moral Hazard

Source: Cornwall Insight

Figure 9: Strawman Variant RO Timeline (CP19)

	Generator	Supplier	BEIS / Ofgem	
Oct 19			01 Oct - BEIS publish obligation (ROCs/MWh)	
Nov 19				
Dec 19	<b>Strawman Variant RO Timeline</b>			
Jan 20				
Feb 20			Ofgem sets buy-out in money of day	
Mar 20				
Apr 20	Month of generation - meter readings to be taken at start / end of months Two-month window to submit data to Ofgem. Data must be submitted by the end of the second month ROCs issued by Ofgem (~2.5-months after generation)	Q1. Trading of ROCs		
May 20		Q2. Trading of ROCs	1 <sup>st</sup> - Submit volumes 30 <sup>th</sup> - Meet Obligation	
Jun 20				
Jul 20		Q3. Trading of ROCs	1 <sup>st</sup> - Submit volumes 31 <sup>st</sup> - Meet Obligation	
Aug 20				
Sep 20		Q4. Trading of ROCs	1 <sup>st</sup> - Submit volumes 31 <sup>st</sup> - Meet Obligation	
Oct 20				
Nov 20				
Dec 20				
Jan 21				
Feb 21				
Mar 21	Supply Volume Confirmation	1 <sup>st</sup> - Submit volumes 31 <sup>st</sup> - Meet Obligation		
Apr 21				
May 21				
Jun 21		1 <sup>st</sup> - Submit volumes 30 <sup>th</sup> - Meet Obligation		
Jul 21	Compliance Period		>1 Jul - Ofgem confirms total UK RO and publish UK obligation for OP	
Aug 21			>1 Sep - Ofgem confirms compliance / non-compliance	
Sep 21			Assumed reconciliation of annual compliance	
Oct 21				

6-Month Moral Hazard

Source: Cornwall Insight

# Potential issue: ROC issue timings

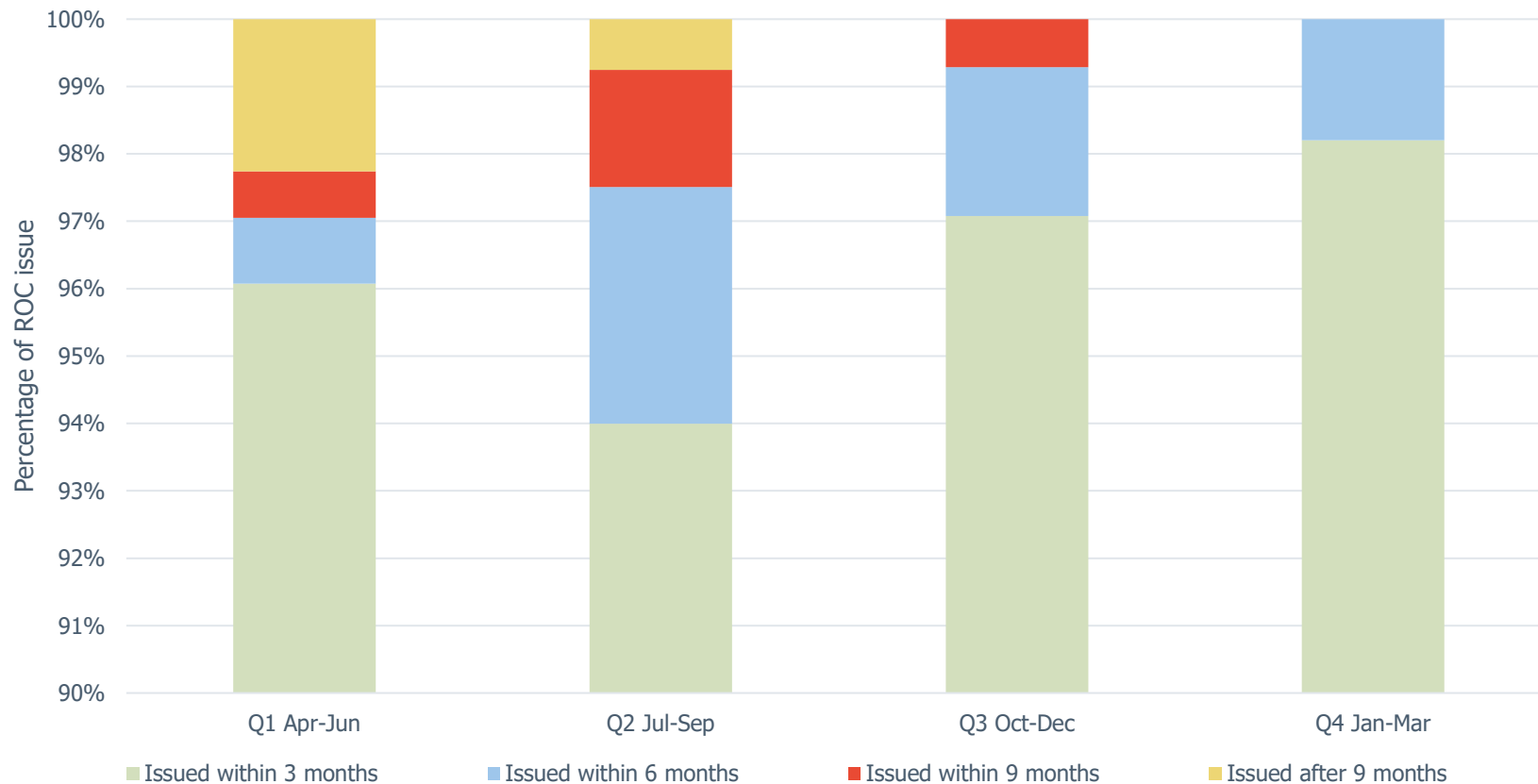
- Under the current RO scheme, for each month of generation, generators take meter readings at the start and end of the month. There is then a two-month window to submit this data to Ofgem, after which ROCs are issued by Ofgem, typically 2.5 months after generation
- While there is no statutory deadline for the ROC issue date, Ofgem currently issues ROCs in line with the dates published in their ROC Issue Schedule
- However, there can be delays in ROC issue in relation to the ROC Issue Schedule for a number of reasons. These include instances where generators fail to submit data, or supporting information before the two-month deadline, or where there are wider ongoing activities such as pending applications reviews, fuel measurement and sampling reviews and any compliance issues
  - The new Strawman Variant, with tighter compliance timescales, could be impacted by any delays to ROC issue

# Potential issue: ROC issue timings

- To highlight the potential impact of ROC issue delays in relation to the typical ROC schedule, Cornwall Insight have provided a worked example for CP18
- Using ROC issue data from CP18 from Ofgem's Renewables & CHP Register, around 5% of ROCs are issued retrospectively (after the initial monthly ROC issue by Ofgem)
  - July, August and September saw the most ROCs issued retrospectively (9.1%, 7.9% and 7.0% respectively)
- Applying the quarterly Strawman obligation to the ROC issue data from CP18 shows that around 3.4% of ROCs (ranging between 2-6% and equating to ~2mn-5mn ROCs) are issued after the three-month window for a supplier to meet its obligation proposed under both Strawman approaches (Figure 10)
  - This would be problematic for the Strawman Variant which aims to reduce the 'moral hazard' to 6 months, and would mean up to 6% of ROCs would have to be redeemed in subsequent quarters, or be 'banked' for the following year
  - Whilst 6% is a small proportion of the market, at CP18 values it would equate to ~£350mn
- A potential solution, as outlined previously, would be to allow some flexibility around quarterly compliance or a year-end reconciliation period

# Potential issue – ROC issue timings

Figure 10: Percentage of ROCs issued for generation per quarter



Source: Cornwall Insight analysis from Ofgem's Renewables & CHP Register



# Stakeholder feedback

- The Strawman Variant was also viewed positively by the participants interviewed
- Positive feedback included:
  - Some stakeholders believe late payments are unnecessary and as such removing this aspect of the RO scheme would be beneficial to reducing the 'moral hazard'
- However, the main concern raised from stakeholder feedback for the Strawman Variant was the potential for greater impact from minor delays in ROC issue
  - This would negatively impact on the ability of participants to trade ROCs before the end of the settlement deadline for respective quarters
  - This could result in higher banking of ROCs if suppliers are long in the final quarter of the compliance period or have not been able to redeem them in subsequent quarters during that compliance period