

Consultation on EMR data flows

Potential mechanisms for parties to exchange data with EMR settlement systems

11 February 2014



Issued: 11 February 2014

Respond by: 7 March 2014



Department
of Energy &
Climate Change

ELEXON

Consultation on potential mechanisms for parties to exchange data with EMR settlement systems

Purpose of this consultation

As part of the implementation of Electricity Market Reform (EMR), responsibility for settlement of Contracts for Difference (CfDs) and the Capacity Market (CM) with generators, suppliers and capacity providers will lie with the CfD Counterparty and the Capacity Market Settlement Body (CMSB). They will deliver this function through ELEXON. ELEXON is therefore procuring an IT provider to build, host and operate the appropriate IT settlement systems that will calculate and invoice CM and CfD payments. These systems will be required to exchange electronic data flows with a variety of market participants and data providers.

This consultation seeks EMR parties' views on the most appropriate mechanisms to be used for exchanging this data. ELEXON will use the output of the consultation as the basis for specifying and designing the data exchange element of the CM and CfD settlement systems.

Issued:

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7 March 2014

Enquiries to:

EMR team, ELEXON Ltd, 350 Euston Road, London NW1 3AW

emr@elexon.co.uk

How to respond

We are interested in views from licensed suppliers, generators and capacity providers. Electronic responses should be sent to emr@elexon.co.uk using the proforma provided.

1. Executive summary

1. The electricity market faces major challenges over the next decade and beyond. Electricity Market Reform (EMR) creates a framework to transform the UK electricity market to meet these challenges.
2. EMR will create two key mechanisms – Contracts for Difference (CfDs) and the Capacity market (CM). The CfD will provide long-term revenue stabilisation to incentivise investment in low-carbon generation, while the CM will provide a steady payment to reliable forms of capacity (both demand and supply) to ensure there is enough to meet demand.
3. ELEXON has been appointed by DECC (using powers given to the Secretary of State through primary legislation) to perform the roles of CfD Settlement Services Provider (to carry out the settlement of CfDs on behalf of the CfD Counterparty) and CM Settlement Services Provider (to carry out the settlement of Capacity Market Agreements on behalf of the CM Settlement Body).
4. The CfD Counterparty is a Government owned company set up to act as counterparty to CfDs, signing and managing them, and administrating the supplier obligation.
5. The CM Settlement Body is a Government owned company that acts as the settlement body for CM.
6. This consultation seeks views on the interfaces that will be used for the exchange of electronic data flows to and from the EMR settlement systems and a variety of market participants and data providers.
7. The consultation proposes a range of potential solutions and seeks the views of parties on which would be the most appropriate mechanism (or mechanisms).
8. Responses should be submitted to emr@elexon.co.uk by 7 March 2014.

Summary of proposals

9. The consultation describes three possible mechanisms to be used for exchanging data between the settlement systems, market participants and data providers:
 - Sending files as email attachments: this option would minimise the required investment in settlement systems. It may be attractive to smaller parties who cannot justify investment in sophisticated IT systems or parties who wish to invest in more sophisticated IT systems, but at a later date.
 - Use of existing industry networks to exchange data: this option would be likely to appeal to parties who are already users of existing industry data transfer networks such as the DTN or CVA network.



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- Other mechanisms: some parties may believe that there is a need to provide a more sophisticated mechanism for exchanging data. This could include a secure FTP, web services or a web portal.

Next steps

10. ELEXON will review all consultation responses received and submit a report to the CfD Counterparty, based on the responses, outlining:
 - The collective response to each question
 - ELEXON's subsequent proposed IT approach¹
11. DECC /CfD Counterparty will respond to ELEXON stating their preferred solution.

¹ Because the EMR settlement systems will be exchanging files with a variety of type and size of organisation, we are not necessarily expecting that a single solution will suit all parties, and may therefore propose to support more than one solution.

Potential mechanisms for parties to exchange data with the EMR settlement systems

Introduction and Background

12. The electricity market faces major challenges over the next decade and beyond. Electricity Market Reform (EMR) creates a framework to transform the UK electricity market to meet these challenges.
13. EMR will create two key mechanisms – Contracts for Difference (CfDs) and the Capacity market (CM). The CfD will provide long-term revenue stabilisation to incentivise investment in low-carbon generation, while the CM will provide a steady payment to reliable forms of capacity (both demand and supply) to ensure there is enough to meet demand.
14. As part of the implementation of EMR, responsibility for settlement with generators, suppliers and capacity providers will lie with the CfD Counterparty and the CM Settlement Body. They will deliver this function through ELEXON. ELEXON is therefore procuring an IT provider to build, host and operate the appropriate IT settlement systems that will calculate and invoice CM and CfD payments. These systems will be required to exchange electronic data flows with a variety of market participants and data providers. For example:
 - Capacity providers and CfD generators will need to receive from the system details of how their payments have been calculated;
 - Licensed Suppliers (who are funding CfD and CM payments) will need to receive from the system invoices (and accompanying details of how the invoice amounts were calculated); and
 - A variety of data providers will need to send to the system metered data, price data and other information required to calculate payments.
15. Appendix 1 provides a more complete list of the types of data file that the new IT system will be required to send or receive. Appendix 2 illustrates diagrammatically the principal information flows that will be exchanged between the CfD Settlement Agent and the other parties involved in CfD and a high level view of the information flows between the CM Settlement Agent and the CM Service Users.

16. The purpose of this consultation is to seek the views of stakeholders on the most appropriate mechanisms to be used for exchanging this data.

Design principles

17. ELEXON will ensure that the interfaces between the settlement systems and market participants / data providers don't act as a barrier to participation in the Capacity Market or CfD arrangements.
18. For all options, affordability must be taken into account and weighed up against other benefits and features of the design solution.
19. ELEXON will also be mindful of the type and range of participant that will need to interact with the settlement systems and ensure that the final solution reflects the fact that not all EMR participants necessarily interact with the current industry settlement arrangements.

Option 1: Sending files as email attachments

20. We wish to offer an option that minimises the investment in IT which parties must make before exchanging data with the settlement systems. Such an option might (for example) be attractive to:
 - Small generators or capacity providers for whom investment in more sophisticated IT systems is not justified; and
 - Parties who do intend to build a more sophisticated IT solution, but at a later date, and therefore require a workaround solution when the new arrangements first go live.
21. In order to meet this requirement we intend to offer the option of exchanging data files as attachments to emails:
 - We will publish an email address for incoming files, and attachments sent to this email address will be validated and routed to the settlement systems. Outgoing emails will be sent to an email address registered by each party.
 - We propose XML as an appropriate format to be used for these data files. Unlike some of the other legacy file formats used by existing BSC systems (such as text files with 'pipe' characters used as field separators) this is a well-established open format, with a wide variety of tools available for creating, processing and validating data files.
 - We will publish an 'XML schema' for each type of data file. This defines the required format of the file in a way that can be processed and understood by a wide variety of tools (unlike our current [Interface Definition Documents](#), which can only be interpreted by bespoke software tools).



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- We propose that the settlement systems will also attach to each outgoing email a human-readable version of each data file in PDF format.
22. Although this solution is intended to be simple and low-cost for parties to use, we acknowledge that using unencrypted email as a file transfer mechanism does have some disadvantages, which mean this is unlikely to be the preferred solution for all parties:
- It is not secure. Emails can potentially be intercepted by cyber-criminals or other third parties. There is also no guarantee of who sent an email (as sending addresses can be 'spoofed'). Email is therefore not an appropriate mechanism if significant legal or financial damage could be caused by a message falling into hostile hands; or if there is a requirement to be able to establish beyond doubt who sent a particular message. However we do not believe that these factors apply to files sent by the settlement systems. They will not contain personal data; and much of the data they contain will be derived from information (such as BM Unit Metered Volumes and reference prices) that is already obtainable through other legitimate means. We also note that email is widely used already for the purpose of sending other types of invoice between power market participants.
 - There is no guarantee of delivery. If an email is not delivered this may trigger processes for handling missing data.
23. We welcome your views on our proposal to use email in this way, and in particular the following questions:

1.1	Do you agree that sending and receiving electronic data files as email attachments is an appropriate mechanism for parties who wish to minimise their investment in IT systems? If not, what alternative would you propose?
1.2	Would you be likely to use this mechanism yourself? If so, would you see this as a permanent solution, or a temporary workaround?
1.3	Do you agree that XML is an appropriate open standard to use for the data files attached to these emails? If not, what alternative would you propose?
1.4	Do you agree with our proposal that the settlement systems should also attach human-readable versions of each file (in PDF format) to outgoing emails?

Option 2: Other potential mechanisms for sending and receiving data

24. Given the disadvantages of email (as described above) we believe that some parties will require a more sophisticated mechanism for exchanging data. The nature of the other options we can offer will to some extent be influenced by costs, which we will need to discuss with our selected IT provider. But potential options include:
- Secure FTP. Under this option, those parties who are required to provide data to the settlement systems would upload data files (in the defined XML format) to a server we provided. Similarly, any output files produced by the settlement systems would be placed on this server for download by the intended recipients. Each party would connect with their own credentials, ensuring that they had access only to their own data files.
 - Web services are another potential mechanism for sending and receiving data. This option would allow parties' systems to request specific items of data from the settlement system, using a standard mechanism such as SOAP², rather than providing everyone with a complete data set regardless of their interests.
 - Alternatively we might be able to provide a web portal (similar to the [existing BSC web portal](#)) which parties could use to download reports³ and upload data files. This would be accessible via a web browser (and hence accessible to people as well as IT systems), but could also provide mechanisms for automated exchange of data.
25. A possible disadvantage of these options is that (unlike email) they require parties to proactively request data, which may not be appropriate for invoices and contractual notices (where the sender needs to know or be able to deem that the communication has been received).
26. Existing industry networks such as the Data Transfer Network (DTN) or CVA network are also an option – this is discussed separately under option 3 below.
27. We welcome your views on these and other options, and in particular the following questions:

2.1	What do you see as the pros and cons of the options outlined above? Which option(s) do you see as most appropriate?
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² SOAP originally stood for Simple Object Access Protocol, and provides a protocol for exchange of structured data (in XML format) via web services.

³ This consultation focuses on mechanisms for exchanging structured reports and data files with pre-defined formats required to support day-to-day operational processes. But a web portal could also potentially provide facilities for parties to define their own queries, and download data that they want in a more flexible way.

2.2	Are there any other options that we should be considering?
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Option 3: Possible use of existing industry networks to exchange data

28. Options 1 and 2 above discuss solutions for exchanging data over the public internet, which can be accessed by anyone without the need to purchase specialised equipment or sign up to industry codes. However, some stakeholders required to exchange data flows with the settlement systems will already be users of existing data transfer networks such as the DTN or the CVA network. This section discusses the possible use of these existing networks to exchange data with the new settlement systems.

Data sent by Supplier Agents

29. DECC's October 2013 [consultation on implementation of EMR](#) proposed a role for Supplier Agents in providing metered data for capacity providers connected to distribution networks:

DSR metering option (a)

579. The DSR capacity provider must notify the data collector (appointed by the supplier) to pass the half hourly, non-aggregated BSC metered data for the relevant CMU component (and related meters on the same site if appropriate) to the settlement agent. This option is for either DSR, embedded generation that exports electricity to the network, or embedded generation which has a separate BSC meter.

30. We understand that this option is likely to be implemented through changes to the BSC, imposing an appropriate obligation on Suppliers (and hence on Supplier Agents⁴). And because Supplier Agents are generally accustomed to using the DTN to meet the data exchange obligations in the BSC, we anticipate that they will probably want to do the same in this instance. This will require the creation of new data flows in the [MRA Data Transfer Catalogue](#).

31. We do not believe that using the DTN in this way gives rise to any novel governance issues, provided that the underlying obligations are in the BSC, as the DTN is a well-established mechanism for Supplier Agents to meet their BSC obligations.

Data sent to Suppliers and other BSC Parties

32. BSC Parties already receive data flows over the DTN and CVA network as follows:

- Suppliers receive data flows from the Supplier Volume Allocation Agent (SVAA) over the DTN; and
- Suppliers and other BSC Parties receive data flows from the Settlement Administration Agent (SAA) over the CVA network.

⁴ In particular we anticipate that it is Half Hourly Data Aggregators (HHDAs) who will be required to provide data to the EMR Settlement Services Provider.



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33. We would welcome your views (see question 3.2 below) on whether it would be appropriate to allow Suppliers and other parties to receive EMR data flows over these existing networks. It should be noted that some additional costs would be incurred in doing this:
- Additional functionality would need to be included in the settlement systems for generating data files in the legacy file format supported by these networks; and
 - In the case of the DTN, senders of data are charged a fee per MB of data sent. ELEXON as EMR Settlement Services Provider could therefore incur significant data transfer fees.
34. To address this, we propose that there should be some mechanism for passing on costs incurred to those parties who choose to use these existing networks for EMR purposes. As a minimum the costs passed on should include those directly attributable to individual data recipients (such as data transfer charges). We welcome your views on this (see question 3.3 below).
35. We believe that using these existing industry networks to exchange EMR data would require governance changes to the relevant industry codes i.e. the Master Registration Agreement (for the DTN) and the BSC (for the CVA network). In particular there would need to be mechanisms for proposing and assessing changes to EMR-related data flows (see question 3.4 below).

3.1	Do you agree that the DTN is the appropriate mechanism for HHDAs to provide data to the settlement systems (provided that the obligation to do so is in the BSC)?
3.2	Do you believe it is appropriate to allow existing networks (i.e. DTN and/or CVA network) to be used for other EMR purposes (unrelated to the BSC or other existing industry codes)? Please provide your rationale.
3.3	Do you agree that the costs incurred in using networks in this way should be recovered from parties who choose to make use of this option? If so, should this apply to all such costs (including for example the costs of including appropriate functionality in the settlement systems.)? Or should it apply only to those costs directly attributable to individual data recipients (e.g. DTN data transfer charges)?
3.4	What changes would be needed to existing codes or Licenses to allow the DTN and/or CVA network to be used in this way?

Consultation questions

Option 1: Sending files as email attachments

Question 1.1	Do you agree that sending and receiving electronic data files as email attachments is an appropriate mechanism for parties who wish to minimise their investment in IT systems? If not, what alternative would you propose?
Question 1.2	Would you be likely to use this mechanism yourself? If so, would you see this as a permanent solution, or a temporary workaround?
Question 1.3	Do you agree that XML is an appropriate open standard to use for the data files attached to these emails? If not, what alternative would you propose?
Question 1.4	Do you agree with our proposal that the settlement systems should also attach human-readable versions of each file (in PDF format) to outgoing emails?

Option 2: Other potential mechanisms for sending and receiving data

Question 2.1	What do you see as the pros and cons of the options outlined above? Which option(s) do you see as most appropriate?
Question 2.2	Are there any other options that we should be considering?

Option 3: Possible use of existing industry networks to exchange data

Question 3.1	Do you agree that the DTN is the appropriate mechanism for HHDA's to provide data to the settlement systems (provided that the obligation to do so is in the BSC)?
Question 3.2	Do you believe it is appropriate to allow existing networks (i.e. DTN and/or CVA network) to be used for other EMR purposes (unrelated to the BSC or other existing industry codes)? Please provide your rationale.
Question 3.3	Do you agree that the costs incurred in using networks in this way should be recovered from parties who choose to make use of this option? If so, should this apply to all such costs (including for example the costs of including appropriate functionality in the settlement systems.)? Or should it apply only to those costs directly attributable to individual data recipients (e.g. DTN data transfer charges)?
Question 3.4	What changes would be needed to existing codes or Licenses to allow the DTN and/or CVA network to be used in this way?

Appendix 1: EMR Settlement Data Flows

In order to provide clarity on the type of data flows to which this consultation relates, this Appendix lists some of the data flows to and from the EMR service provider that are expected to be sent electronically, using one or more of the mechanisms described in this consultation. It is not intended as a complete or authoritative list, and only includes data flows that are expected to have a pre-defined format (as opposed to user-defined reports and queries).

Input Flows

Category	Data flow	From	CM / CFD	Notes
Metered data	BSC metered volumes	SAA	Both	Functionality to generate the required new flow will be included in the June 2014 BSC Systems Release.
	Metered volumes for CFD private wire and CM option (b)	Generators + capacity providers	Both	
	Metered volumes from balancing services metering i.e. CM DSR option (d)	National Grid	CM	
	MPAN-level data provided under the BSC for CM option (a).	HHDAs	CM	We propose to use the DTN for this data flow – see section 3 of the document.
Power market data	Day ahead auction prices	Power exchanges	CFD	
	Forward market prices	Price providers	CFD	
	Bid Offer Acceptances	Transmission Company	CM	
	Balancing Services instructions	Transmission Company	CM	
	Capacity Market warnings	Transmission Company	CM	
EMR contract	Details of Contracts for Difference	Counterparty Body	CFD	



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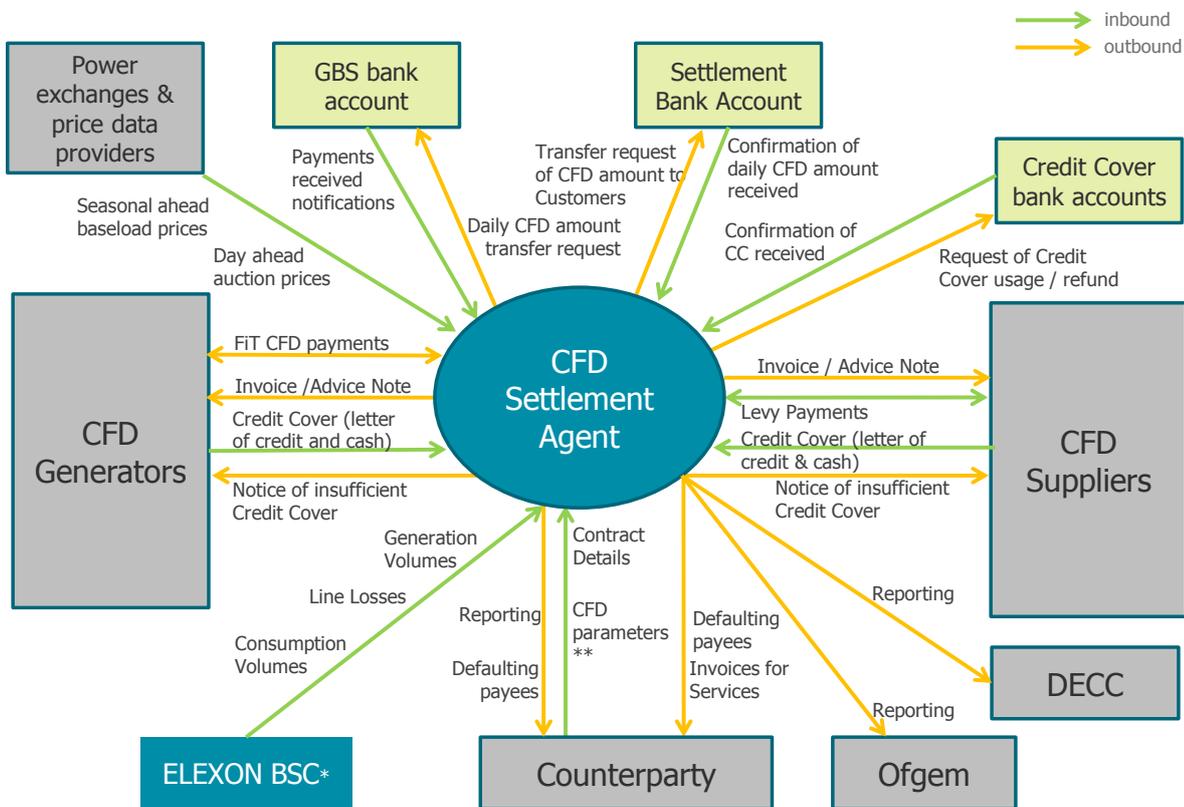
data	Details of capacity contracts	Delivery Body	CM	
	Details of secondary trades	Delivery Body	CM	
Bank Transactions	Details of money paid into EMR bank accounts by Suppliers and Generators	Banks	Both	These flows are likely to be outside our control i.e. we will have to work with the mechanisms and file formats that banks (or third party intermediaries) provide.

Output Flows

Category	Data flow	To	CM / CFD	Notes
Settlement Reports	CFD Billing Statement	Generator	CFD	
	Daily fixed levy invoice	Supplier	CFD	
	Reserve Fund Annual Reconciliation	Supplier	CFD	
	Insolvency Reserve Fund Invoice	Supplier	CFD	
	CM Monthly Statement	Capacity provider	CM	
	CM Monthly Invoice	Supplier	CM	
Credit Notifications	Collateral Notice	Supplier / Generator	Both	
	Request for Additional Collateral	Supplier / Generator	Both	
Pre-defined Reports	Regular pre-defined reports required by Counterparty Body, Settlement Body, government and regulator.	Various	Both	

Appendix 2: Anticipated CFD information flows and activities

The figure below illustrates the principal information flows that will be exchanged between the CfD Settlement Agent and the other parties involved in CfD:



* The registration of the metering points for new Generation (link with the BMU) will be covered within BSC

** e.g. calendar, inflation index

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The following diagram provides a high level view of the information flows between the CM Settlement Agent and the CM Service Users.

