# Final CP Report

# CP1506 'New Interconnector fuel type'

## Contents



## About This Document

This document is the CP1506 Final CP Report which ELEXON has published following the final decision from the Panel to approve CP1506.

There are four parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, and proposed implementation approach. It also summarises the Imbalance Settlement Group's (ISG's) initial views on the proposed changes and the views of respondents to the CP Consultation. It also contains the Panel's final views on the proposed changes.
- Attachment A contains the proposed redlined changes to deliver the CP1506 solution.
- Attachment B contains the full responses received to the CP Consultation.
- Attachment C contains the CP1506 Proposal Form


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# 1 Why Change?

## Background

### BMRS

The Balancing Mechanism Reporting Service (BMRS) is used for reporting operational data relating to the Great British (GB) electricity BSC arrangements. The BMRS includes information and data on historical generation, actual generation and forecasted generation. This generation data is subsequently separated by fuel types, with the list of required Fuel Type Categories recorded in BSC Section Q 'Balancing Mechanism Activities'.

The BMRS provides market transparency and hence it is important that the contributions of all active Interconnectors are reflected accurately in the data provided by National Grid (NG).

**What is the BMRS?**

This BMRS is the primary channel for providing operational data relating to the GB Electricity Balancing and Settlement arrangements.

It is used extensively by Market Participants to help make trading decisions and understanding market dynamics and acts as a prompt reporting platform as well as a means of accessing historic data

### Addition of new fuel types

Modification P244 'Provision of BritNed flow data to the BMRS' allowed the BSC Panel to approve new external Interconnector flows, as further Fuel Type Categories, without the need for a BSC Modification. This was progressed on efficiency grounds to remove the need for a Modification to be raised for each Interconnector that would be subsequently be commissioned. These provisions were utilised in 2012 for CP1367 'Reporting Data relating to the East-West Interconnector on the BMRS', to add the East-West Interconnection (EWIC) to the BMRS (Panel 194/04).

## What is the issue?

A number of new High-Voltage Direct Current (HVDC) Interconnectors connecting the GB bidding zone to other bidding zones are currently in planning and/or construction, and due to go-live in the next few years – starting with Nemo Link in January 2019. The full list of proposed future Interconnectors can be found below.

| Interconnector | Connecting Country | Capacity (MW) | Proposed commissioning date |
|---|---|---|---|
| Nemo Link | Belgium | 1000 | 2019 |
| ElecLink | France | 1000 | 2020 |
| IFA2 | France | 1000 | 2020 |
| NSL | Norway | 1400 | 2021 |
| Aquind | France | 2000 | 2022 |
| FABLink | France | 1400 | 2022 |
| NeuConnect | Germany | 1400 | 2022 |
| NorthConnect | Norway | 1400 | 2022 |
| Gridlink | France | 1400 | 2022 |
| Aquind | France | 2000 | 2022 |
| Greenlink | Ireland | 500 | 2023 |

The existing arrangements, as set out in BSC Section Q, require a separate 'Fuel Type Category' to be defined for each Interconnector, for reporting purposes. These fuel types are then recognised on the BMRS, Interface Definition and Design (IDD) Part 1 document

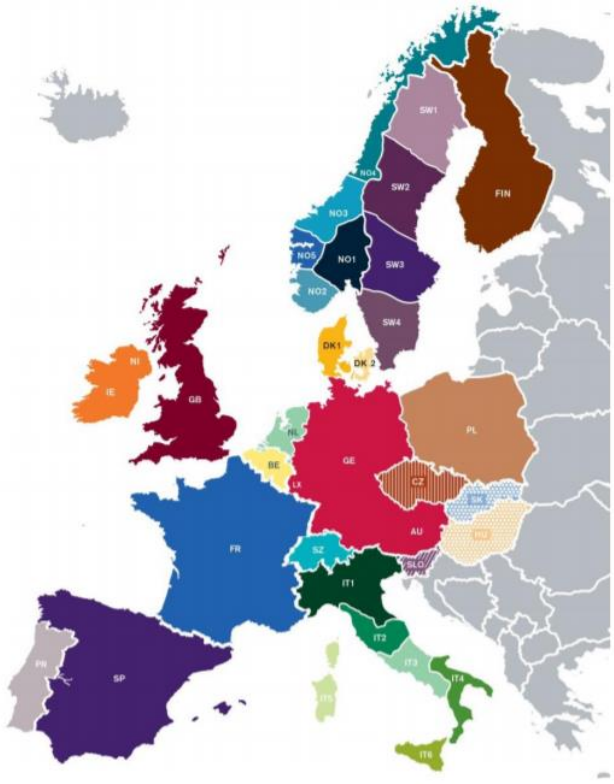
and associated spreadsheet. Therefore, it will be necessary to make changes to the BMRS, with the inclusion of the new fuel types, before any proposed Interconnector goes live.

The Proposer notes the provisions introduced by P244 for External Interconnection flows and seeks to utilise these means to add the Nemo Link Interconnector as a Fuel Type Category, which aims to go live in January 2019, to the BMRS. Furthermore, as the Interconnector capacity is set to increase over the coming years, the BMRS will need to remain a clear source of market data and as such the website graphical user interface (GUI) should be updated to remain clear and user friendly, following the inclusion of the new Interconnector fuel type.

## Bidding zones

A bidding zone is the largest geographical area within which Market Participants are able to exchange energy without capacity allocation. Bidding zones in Europe are currently defined according to differing criteria. The majority are defined by national borders (e.g. France or the Netherlands); however, some are larger than national borders (e.g. Austria, Germany and Luxembourg or the Single Electricity Market for the island of Ireland) and some are smaller zones within individual countries (e.g. Norway).

The image below highlights the current bidding zones in central, west and north Europe.




All current live Interconnectors are connected to a bidding zone defined simply as the connected country, with the only exceptions being that of the East-West Interconnector (INTEW) and Moyle (INTIRL); these are grouped into one single bidding zone - Single Electricity Market for the island of Ireland.

As bidding zones are a core element of today's European market design and with the proposed Interconnectors coming online in the coming years, it would be beneficial to display Interconnector flow data on the BMRS aggregated by bidding zone.

## Governance

Section Q of the BSC reserves the right for the Panel to approve Fuel Type Categories relating to further Interconnectors without change to the BSC itself. As BSC Central System and document changes are needed, to enable the BMRS to receive, store and publish data relating to any new Interconnector, a CP must be raised in addition to seeking Panel approval for the new Fuel Type Category.

# 2 Solution

## Approved solution

To enable the BMRS to receive, store and publish data relating to the Nemo Link Interconnector, by performing the required system change and subsequently amending the Interface Design Document (IDD): Part 1 – Interfaces with BSC Parties and their Agents with the proposed new Fuel Type Category. A new Fuel Type Category will be created for the Nemo Link Interconnector. The fuel type valid set held within the BMRS will also be updated to include reference to this new Interconnector. This CP facilitates the current provisions, as outlined in CP1367, by ensuring that systems and processes are in place such that data relating to the Nemo Link Interconnector (if approved by the Panel as a Fuel Type Category under Section Q) can be reported on the BMRS.

CP1506 proposes to name the new Fuel Type Category for the Nemo Link Interconnector on the BMRS, by project name instead of connected country, with the aim of continuing this naming convention moving forward. This 'project name' based method of categorising Interconnectors has already previously been used for CP1367. However, the existing fuel type names for current live Interconnectors, will not be altered i.e. INTFR and INTIRL (identifiers for the IFA and Moyle Interconnectors respectively) to avoid further costs and to minimise impacts on Market Participants currently consuming BMRS data.

### BMRS data submission/receipt

The Transmission Company (National Grid) will need to amend its Balancing Mechanism (BM) and Registration systems to include the relevant new Interconnector volumes in the generation flow submitted to the BMRS. The flow names, frequency of receipt and file structures will not be changed as per the current items outlined below:

| Flow Type ID | Flow Description | Receipt Frequency |
|---|---|---|
| **FUELINST** | Instantaneous Generation by Fuel Type | Every 2 minutes |
| **FUELHH** | Half-Hourly Generation by Fuel Type | Every 30 minutes |
| **FOU2T14D** | National Output Usable by Fuel Type, 2-14 days ahead | Every weekday |
| **FOU2T52W** | National Output Usable by Fuel Type, 2-52 weeks ahead | Once a week |
| **UOU2T14D** | National Output Usable by BM Unit and Fuel Type, 2-14 days ahead | Every weekday |
| **UOU2T52W** | National Output Usable by BM Unit and Fuel Type, 2-52 weeks ahead | Once a week |

**Data Push Service**

The Data Push Service is a new capability that allows the near real-time publishing of information from the BMRS system. This is useful for those who need the latest information from BMRS pushed to their system in near real time.

**Application Programming Interface (APIs)**

The APIs use a pull mechanism, so are better suited for users needing ad-hoc access to historical information, or those who are interested in specific flows.

## Publication on BMRS

The BMRS will publish the data received from National Grid (NG), identifying the new Interconnector flow where relevant as a distinct fuel type. In addition, to prepare for the increase in the number of Interconnectors coming online, over the coming years, it is proposed to revise how certain Interconnector related data is published on the BMRS. Interconnector values aim to be aggregated by bidding zone on the following graphs:

- Generation By Fuel Type graph – Electricity Data Summary page;
- National 2-14 Day Ahead Output Usable; and
- National 2-52 Week Ahead Output Usable.

Further information surrounding how the aggregated data will be published on the BMRS is detailed below, with images showing the current display setups of the relevant BMRS graphs displayed in appendix 2.

**Data Push Service**

The Data Push Service is a new capability that allows the near real-time publishing of information from the BMRS system. This is useful for those who need the latest information from BMRS pushed to their system in near real time.

### Generation by Fuel Type

The solution proposes to aggregate all of the Interconnector flows by bidding zone and these will subsequently be plotted on the graph shown in appendix 2, with associated data selection tick boxes.[1] The 'info' section of this graph will also be updated with details regarding the additional Interconnector, in line with the content that is already present.

### Output Usable Data by Fuel Type

The solution seeks to utilise the same approach as the Generation by Fuel Type graph above for the 'Output Usable Data by Fuel Type' graph (including the 2-14 Day Ahead and the 2-52 weeks ahead output useable graphs), aggregating Interconnector flows by bidding zone.[1]

### Application Programming Interface (API)

The APIs supporting the above pages will be supplemented by new "bidding zone total" figures (one total figure per bidding zone) for the sum of all positive Interconnector values grouped by bidding zone (with negative values set to zero). These additional total figures provided by the API simplify the graphing requirements, whilst providing useful additional values to users of the APIs that matches the bidding zone values being shown on the associated graphs.

However, for both of the graphs above, the individual fuel type's data would still be visible in the supporting tables, content summary and CSV/XML downloads.

### Average Half Hourly Interconnector Flows

The format of the Average Half Hourly (HH) Interconnector Flows graph will be kept as is, adding the new Interconnector data, whilst still displaying the Interconnectors as separate categories on the graph. The 'info' section will also be updated with details regarding the

[1] During aggregation where applicable, the existing summation logic will be followed, e.g. negative volumes set to zero

additional Interconnector and its geographical location, in line with the content that is currently present.

### System Operator (SO)-SO Trade Prices

The SO-SO Trade Prices page, reports near real time (Today/Tomorrow) data. The User has the provision to filter the data using the Trade type. The data is displayed in the form of a table. The SO-SO Historic Trade Prices page reports the historic data. New Trade Types details will be included in the SO-SO Trade Prices table for trade types associated with the new Interconnector when it becomes commissioned.

### Additional updates

The new Interconnector data will also be included as an additional entry in the various reports available via the Data Push Service, API, TIBCO and CSV/XML downloads.

The calculation of the data supporting the Rolling System Demand page will be amended to operate with the new Interconnector identifier.

### Transition Arrangements

In the period between the Implementation Date of this CP (1 November 2018) and the go-live date of Nemo Link (January 2019), National Grid will be sending zero values to the BMRS relating to the new Interconnector. Following this, once the Interconnector is fully operational, actual values will flow through the systems in an identical manner to those of the other live Interconnectors.

These arrangements have been proposed, as such that no further changes will be required to the BMRS or NG's systems in the period from implementation of the proposed changes to when the Interconnector becomes fully operational. These are the same arrangements as utilised in CP1367, with the addition of the East-West Interconnector.

## Proposer's rationale

The BMRS provides market transparency; hence it is important that the contributions of all active Interconnectors are reflected accurately in the data provided. Furthermore, the proposed system changes to aggregate Interconnector data by bidding zone are in order to improve clarity of the BMRS and to provide additional useful values for BMRS users. This is in preparation for the increased numbers of Interconnectors being commissioned over the coming years.

## Approved redlining

Attachment B contains the proposed redlining to the NETA IDD: Part 1 – Interfaces with BSC Parties and their Agents.

# 3 Impacts and Costs

## Central impacts and costs

### Central impacts

Changes are required to the BMRS, to receive and validate the data; subsequently making this available to participants via the website, Data Push Service, API, TIBCO messaging service and associated CSV/XML downloads.

The NETA Interface Design Document (IDD): Part 1 – Interfaces with BSC Parties and their Agents will be updated with the proposed Fuel Type Category name for the Nemo Link Interconnector (INTNEM).

In addition there will be a new "Standing Data" Table within the BMRS database that holds the association between Bidding Zone and Interconnector Fuel Type IDs such that the required aggregation by Bidding Zone can be calculated.

| Central Impacts | |
|---|---|
| Document Impacts | System Impacts |
| • NETA IDD Part 1<br>• NETA IDD Part 1 Spreadsheet | • BMRS |

### Central costs

The central implementation costs for CP1506 will be approximately £52k. This is the sum of service provider and internal costs to deliver the CP1506 solution.

## BSC Party & Party Agent impacts and costs

### Participant impacts

Market Participants consuming BMRS data via TIBCO, API, Data Push and CSV/XML download will need to be aware of the changes being made, as participants' receiving systems/processes may require modification. ELEXON will notify all BMRS users of these changes, along with the updates to the website, prior to implementation.

There was one response to the CP Consultation from the Transmission Company (the Proposer), who supported the CP.

| BSC Party & Party Agent Impacts | |
|---|---|
| BSC Party/Party Agent | Impact |
| BMRS Users | Market Participants consuming the data from BMRS will need to be aware of the changes, with the addition of the new Interconnector and the proposed data aggregation. |

| Transmission Company Impacts |
| --- |
| Changes required to the Balancing Mechanism (BM) and Registration systems to collate and submit the new Interconnector data to the BMRS. A one-off development cost of £50k-100k was noted for design, development, testing and integration of the necessary information systems (IS) changes. There are no anticipated ongoing costs to National Grid post implementation. |

# 4 Implementation Approach

## Approved Implementation Date

CP1506 will be implemented on **1 November 2018** as part of the November 2018 BSC Release.

This Implementation Date aligns with the BSC Release before the Nemo Link Interconnector becomes operational in January 2019. The lead time for the associated BMRS system change is 13 weeks, as determined by service provider impact assessment.

Following the CP Consultation, the CP Assessment Report requested the Panel to approve the new Interconnector as a BMRA Fuel Type Category with effect from 1 November 2018 (i.e. aligning with the November 2018 BSC Release). This is in line with the requirement set out in paragraph 6.1.18(l) of Section Q of the BSC. This is in addition to asking the Panel to approve CP1506, relating to the associated BSC Central System and document changes.

# 5 Initial Committee Views

## ISG's initial views

CP1506 was presented to the ISG as a verbal update on 20 March 2018 (ISG203). This allowed ELEXON to present the initial solution and allow industry participants to feed in, giving them an opportunity to pre-emptively assess the potential impacts of the proposed changes.

Whilst discussing the BMRS changes and the proposed aggregation of Interconnector flows on the Generation by Fuel Type and the Output Usable Data By Fuel Type graphs, the ISG's initial view was that it would be most beneficial to aggregate by bidding zone instead of one single 'Interconnector' category. This will allow users to potentially infer different market dynamics.

The ISG also noted that there could be impacts on Market Participants who utilise this BMRS data as their internal systems may need updating following the addition of the new Interconnector. ISG also specified that the current Fuel Type Category identifiers, INTFR and INTIRL, for the Interconnectors which are currently live, should not be updated, as this would potentially require excessive internal system changes for Market Participants.

ELEXON agreed with the requirements outlined by the ISG; that the current in-use Interconnector identifier names are not updated, along with the aggregation of Interconnectors by bidding zone. The proposed solution was updated and CP Consultation was drafted and submitted for industry comment accordingly.

The ISG noted the proposed timeline in which this CP would be submitted for consultation and subsequently, the CP Assessment Report (having been reviewed by ISG) would be presented to the Panel for decision, alongside requesting the Panel approve the new Interconnector as a Balancing Mechanism Reporting Agent (BMRA) Fuel Type Category. It was noted that the plan to present the CP Assessment Report, along with the Fuel Type Category request simultaneously, was due to efficiency and the need to implement this CP before Nemo Link becomes operational in January 2019.

# 6 Industry Views

This section summarises the responses received to the CP Consultation. You can find the full responses in Attachment B.

| Summary of CP1506 CP Consultation Responses | | | | |
|---|---|---|---|---|
| Question | Yes | No | Neutral/ No Comment | Other |
| Do you agree with the CP1506 proposed solution? | 1 | 0 | 0 | 0 |
| Do you agree that the draft redlining delivers the intent of CP1506? | 1 | 0 | 0 | 0 |
| Will CP1506 impact your organisation? | 1 | 0 | 0 | 0 |
| Will your organisation incur any costs in implementing CP1506? | 1 | 0 | 0 | 0 |
| Do you agree with the proposed implementation approach for CP1506? | 1 | 0 | 0 | 0 |
| Do you have any further comments on CP1506? | 0 | 1 | 0 | 0 |

## Respondents' Comments

We received one response to the CP Consultation for CP1506 from the Transmission Company (the Proposer). They agreed with the proposed solution and draft redlining, noting it meets the requirement for transparency, along with a minimal impact on Market Participants.

### Impacts and costs

National Grid will be required to change its registration and BM systems to recognise the new fuel type, as well as reporting and analysis functions to incorporate the new data. A one-off development cost of £50k-100k was noted for design, development, testing and integration of the necessary IS changes. There are no anticipated ongoing costs to National Grid post implementation.

### Implementation

National Grid as the Transmission Company agreed with the proposed implementation of CP1506, noting its low impact approach. They suggested that for future Interconnector additions, multiple fuel types should be released at once, however they accepted this would not be possible within CP1506 due to the tight timescales. This implementation approach is supported by ELEXON and we will seek to use this method to add the next future batch of Interconnectors going live, to the BMRS.

## Comments on the proposed redlining

No comments on the proposed redlining were received as part of the CP Consultation.

# 7 Final Committee Views and Decision

## Panel's final views

CP1506 was presented to the Panel for decision at its meeting on 12 July 2018 (BSC Panel 280). The Panel had no comments on the proposed changes.

Under normal circumstance the requirement for Panel approval of any additional external interconnection flow as a fuel type would normally be decoupled from the associated CP and proposed system changes. The CP, along with the associated system and redlined changes would normally be presented to ISG for information and following this; ISG decision. Due to the tight timescales and the need to implement the changes prior to the go-live date of Nemo Link (January 2019), we instead took both the CP and the request for interconnection approval to the Panel. This allowed us to achieve a slightly quicker end to end process.

A Panel member highlighted a wider question surrounding fuel types, in that it would be beneficial to align the fuel types on the BMRS with those of the Capacity Market. This will be taken into consideration for any future changes.

## Final decision

The Panel has:

- **APPROVED** the proposed changes to the IDD: NETA Interface Definition and Design Part 1 – Interfaces with BSC Parties and their Agents for CP1506;
- **APPROVED** CP1506 for implementation on 1 November 2018, as part of the November 2018 BSC Systems Release; and
- **APPROVED** the Nemo Link Interconnector as a Fuel Type Category under paragraph 6.1.18(l) of Section Q of the BSC

# Appendix 1: Glossary & References

## Acronyms

Acronyms used in this document are listed in the table below.

| Acronyms | |
|---|---|
| Acronym | Definition |
| API | Application Programming Interface |
| BM | Balancing Mechanism |
| BMRA | Balancing Mechanism Reporting Agent |
| BMRS | Balancing Mechanism Reporting Service |
| BSC | Balancing and Settlement Code |
| CP | Change Proposal |
| EDS | Electricity Data Summary |
| GB | Great Britain |
| GUI | Graphical User Interface |
| HH | Half Hourly |
| HVDC | High Voltage Direct Current |
| IDD | Interface Definition and Design |
| IS | Information Systems |
| ISG | Imbalance Settlement Group |
| NG | National Grid |
| NRT | Near Real-Time |
| SO | System Operator |

## External links

A summary of all hyperlinks used in this document are listed in the table below.

All external documents and URL links listed are correct as of the date of this document.

| External Links | | |
|---|---|---|
| Page(s) | Description | URL |
| 2 | P244 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p244-provision-of-britned-flow-data-to-the-bmrs/https://www.elexon.co.uk/mod-proposal/p244-provision-of-britned-flow-data-to-the-bmrs/ |
| 4 | CP1367 Page on the ELEXON website | https://www.elexon.co.uk/change-proposal/cp1367-reporting-data-relating-to-the-east-west-Interconnector -on-the-bmrs/ |

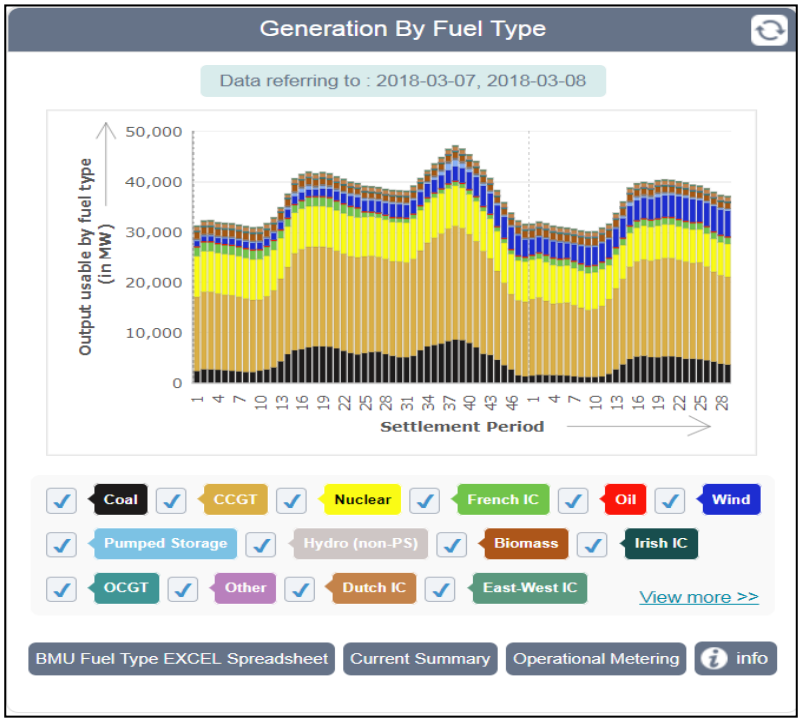
| External Links | | |
|---|---|---|
| Page(s) | Description | URL |
| 11 | ISG 203 meeting | https://www.elexon.co.uk/meeting/isg-203/ |
| 13 | Panel 280 meeting | https://www.elexon.co.uk/meeting/bsc-panel-meeting-280/ |

# Appendix 2: BMRS Changes

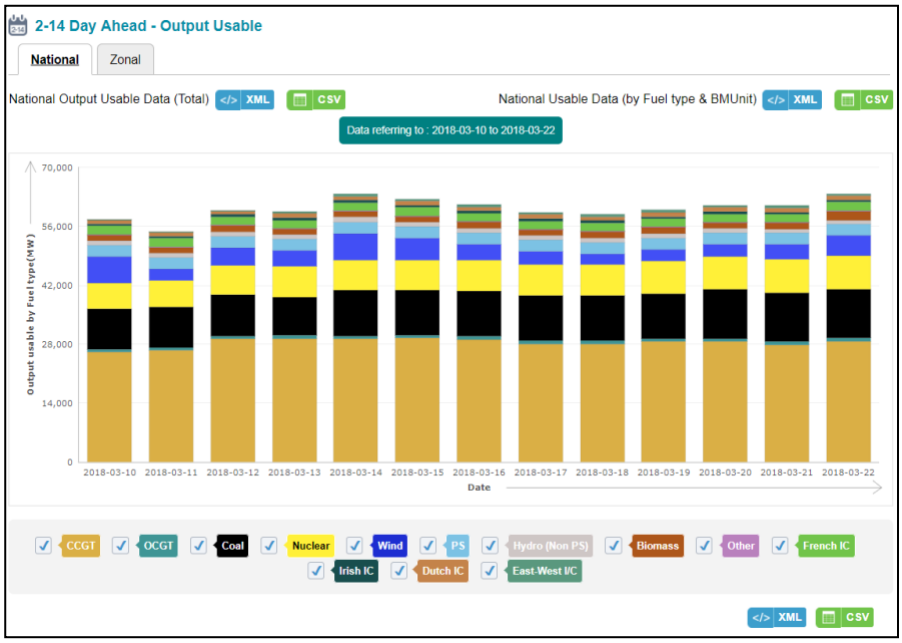
## Website GUI Updates

The screenshots below are taken from the current BMRS and are presented in addition to the information given in the solution section of this report.

### Generation by Fuel Type




### Output Usable Data by Fuel Type



## Average Half Hourly Interconnector Flows