



GC0139

## Data Exchange Options

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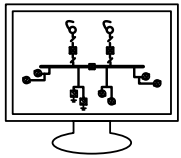
# Cardinal Point Requirements of PC9 Data Submissions

Grid Code Submission	Demand/Generation Cardinal Point
Week 28	GB NETS Peak
	GSP Peak
Week 2	GB NETS Minimum
	Access Period
	GSP Summer Minimum
	GSP Summer Daylight Minimum

- All ETI cardinal point in time data to be submitted with week 2 /28 submission. Only generation additions and removals need to be provided at the time of an ETI submission in the accompanying Appendix G. ETI submission will include a CIM model showing the revised structural data populated with YO demand data.
- The following slides detail options for the combination of CIM format and excel schedule (or CIM table) submissions that deliver the above requirements in week 28 and week 2. For illustrative purposes these slides assume a typical DNO Licence area to have 20 GSPs that each have 6 connected BSPs.

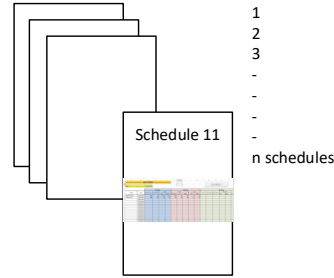
# Option 1 – Minimum number of CIM files, augmented with BSP Schedules to reflect all the forecast scenarios

## Week 28 GB NETS Peak Submission



1 CIM file  
Submission

BSP Outturn  
Representation



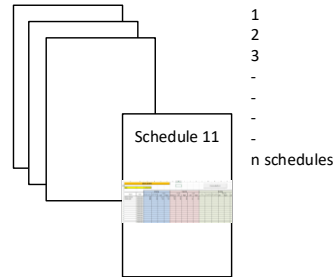
120 Data Tables  
Submission

Detailing BSP Outturn  
and 8 year forecast  
(at GB NETS Peak)

## Week 28 GSP Peak Submission



No CIM file  
submission



120 Data Tables  
Submission

Detailing BSP Outturn  
and 8 year forecast  
(at GSP Peak)

### **Week 28 (Summary)**

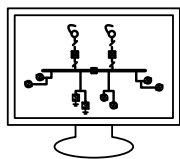
**1 CIM file**

**240 data tables**

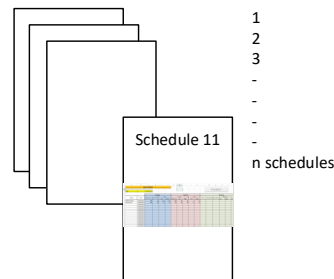
**Note: It may be possible to present the data in the 240 (excel) data tables via a Steady State Hypothesis (SSH) file, but this would require extra DNO resource to convert the excel data files in to a SSH format.**

# Option 1 - Continued

## Week 2 GB NETS Minimum Submission



1 CIM file  
Submission  
  
BSP Outturn  
Representation

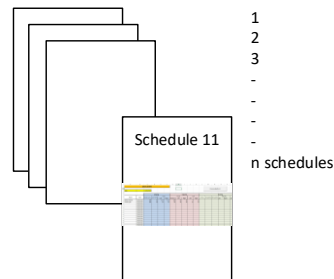


120 Data Tables  
Submission  
  
Detailing BSP Outturn  
and 8 year forecast  
(at NETS Minimum)

## Week 2 Access Period Submission



No CIM file  
submission



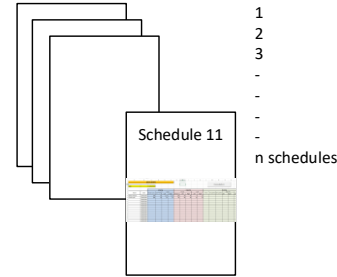
120 Data Tables  
Submission  
  
Detailing BSP Outturn  
(at GSP Access Period Peak)  
and 8 year forecast

# Option 1 - Continued

## Week 2 GSP Summer Minimum Submission



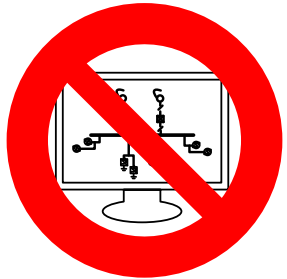
No CIM file  
submission



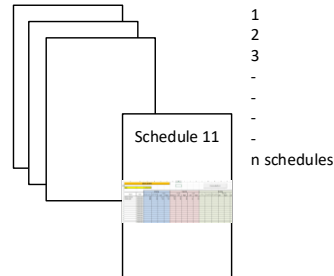
120 Data Tables  
Submission

Detailing BSP Outturn  
and 8 year forecast  
(at GSP Summer Minimum)

## Week 2 GSP Summer Daylight Minimum Submission



No CIM file  
submission



120 Data Tables  
Submission

Detailing BSP Outturn and  
8 year forecast (at GSP  
Summer Daylight Minimum)

### **Week 2 (Summary)**

**1 CIM file**

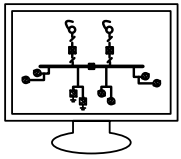
**480 data tables**

**It may be possible to present the data in the 240 (excel) data tables via a Steady State Hypothesis (SSH) file, but this would require extra DNO resource to convert the excel data files in to a SSH format.**

# Option 2 – All Cardinal Point Scenarios in CIM files

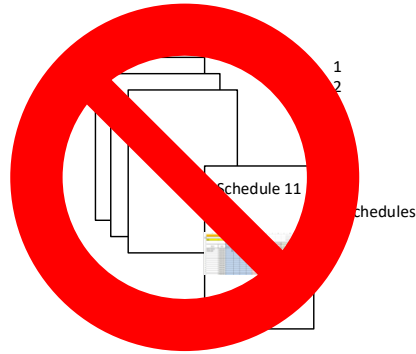
One CIM Model for each of year Yr0 (Outturn) and forecasts for Yr1, Yr5 & Yr10 for each Cardinal Point

## Week 28 GB NETS Peak Submission



4 CIM files  
Submission

BSP Outturn, Y1,  
Y5 & Y10  
Representation



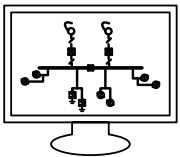
No Data Tables  
Submission

### **Week 28 (Summary)**

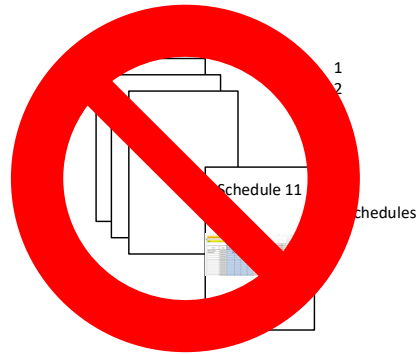
**84 CIM files**

**No data tables**

## Week 28 GSP Peak Submission



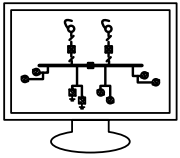
4 CIM files  
Submission for  
each of 20 GSPs  
(total = 80)



No Data Tables  
Submission

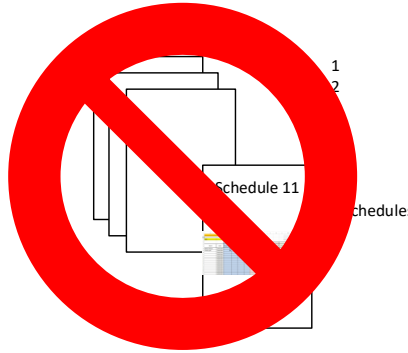
# Option 2 - Continued

## Week 2 GB NETS Minimum Submission



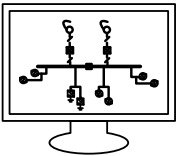
4 CIM file  
Submission

BSP Outturn, Y1,  
Y5 & Y10  
Representation



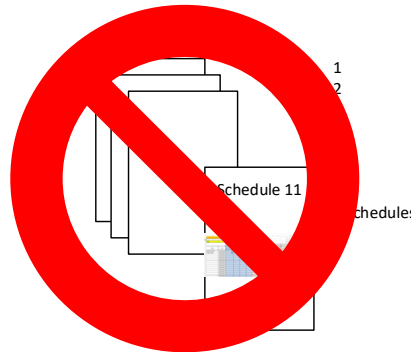
No Data Tables  
Submission

## Week 2 Access Period Submission



4 CIM files  
Submission for each  
of 10 Access Groups (total=40)

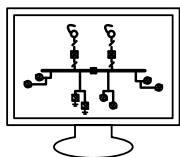
BSP Outturn, Y1,  
Y5 & Y10  
Representation



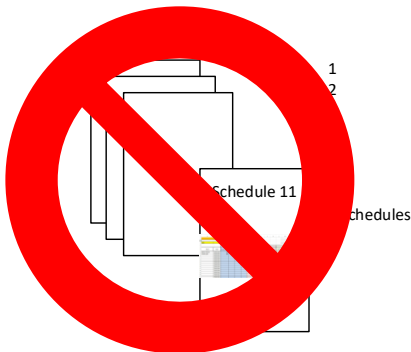
No Data Tables  
Submission

# Option 2 - Continued

## Week 2 GSP Summer Minimum Submission

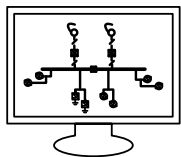


4 CIM file  
Submission for each  
of 20 GSPs (total=80)  
  
BSP Outturn, Y1,  
Y5 & Y10  
Representation

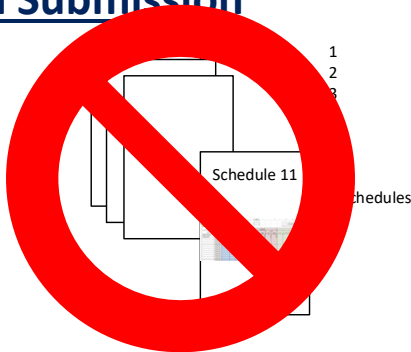


No Data Tables  
Submission

## Week 2 GSP Summer Daylight Minimum Submission



4 CIM file  
Submission for each  
of 20 GSPs (total=80)  
  
BSP Outturn, Y1,  
Y5 & Y10  
Representation



No Data Tables  
Submission

**Week 2 (Summary)**

**204 CIM file**

**No data tables**



# Option 2

Option 2 – Summary.

Not considered viable due to the large number of CIM files that would need to be created and exchanged

# Option 3

Option 3 – the use of Steady State Hypothesis (SSH) files which may be used reduce the need to either i) present different demand scenario data in excel spreadsheets (Option 1) or ii) reduce the number of CIM files that need to be exchanged (Option 2)

Steady State Hypothesis (SSH) file may be used to help reduce the volume of CIM files that would need to be compiled in Option 2 (assuming that its viable). This would be similar to Option 1 or 4, but the data tables would be captured within the CIM model package via a SSH file.

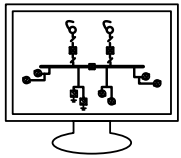
This should make compiling and using the information in the data tables easier.

A SSH file approach could be used as an alternative to providing ‘paper based’ Schedule 11 files – but there would be up to 10 SSH files to replace each of the Schedule 11 table – one for each forecast year.

We probably need to decide whether this approach to providing forecast data would be an option for DNOs or a mandated requirement in the code. This might be appropriate once DNOs and Users are comfortable and experienced using CIM data exchanges if its possible to automate the process.

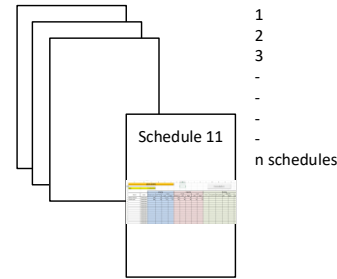
# Option 4 – Minimum number of CIM files Augmented with BSP Schedules

## Week 28 GB NETS Peak Submission



1 CIM file  
Submission

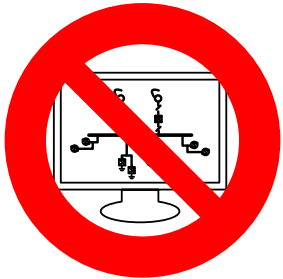
**BSP** Outturn  
Representation



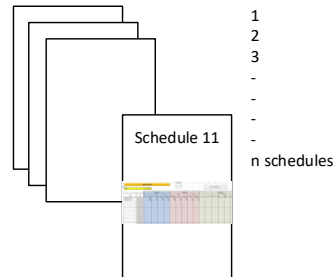
20 Data Tables  
Submission

Detailing **GSP** Outturn  
(at NETs Peak)  
and 8 year forecast

## Week 28 GSP Peak Submission



No CIM format  
submission



20 Data Tables  
Submission

Detailing GSP Peak Outturn  
and 8 year forecast

### **Week 28 (Summary)**

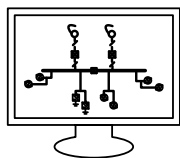
**1 CIM Model**

**40 data tables**

**Note: ditto option 1 via SSH etc**

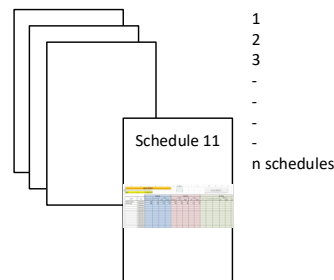
# Option 4 - Continued

## Week 2 GB NETS Minimum Submission



1 CIM format  
Submission

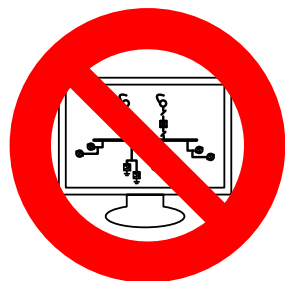
**BSP** Outturn  
Representation



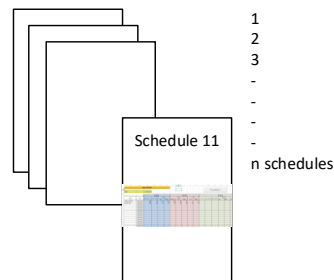
20 Data Tables  
Submission

Detailing **GSP** Outturn  
(at NETS Minimum)  
and 8 year forecast

## Week 2 Access Period Submission



No CIM format  
submission



20 Data Tables  
Submission

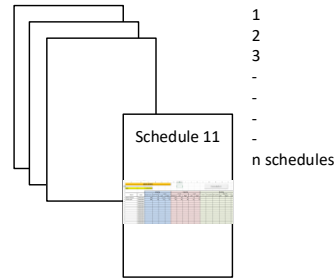
Detailing GSP Outturn  
(at GSP Access Period Peak)  
and 8 year forecast

# Option 4 - Continued

## Week 2 GSP Summer Minimum Submission



No CIM format submission



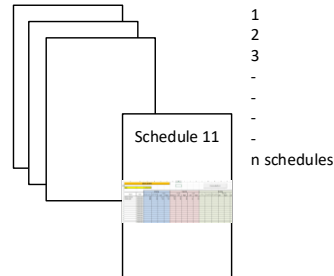
20 Data Tables Submission

Detailing GSP Outturn  
(at GSP Summer Minimum)  
and 8 year forecast

## Week 2 GSP Summer Daylight Minimum Submission



No CIM format submission



20 Data Tables Submission

Detailing GSP Outturn  
(at GSP Summer Daylight Minimum)  
and 8 year forecast

### **Week 2 (Summary)**

**1 CIM Model**

**80 data tables**

**Note: ditto option 1 via SSH etc**

## Summary – data exchange for week 2 / 28

Option	No. Cim Files	No. Data Tables
1	2	720
2	288	0
3	SSH*	SSH*
4	2	120

\* SSH – Steady State Hypothesis could be applied to Options 1, 2 & 4

# Recommendations for GC0139 consideration

Option 4 – this is the emerging preferred option (subject to confirmation by NGET)

## Implications of Option 4

SOW - All ETI cardinal point in time data to be submitted with week 2 submission. Only generation additions and removals need to be provided at the time of an ETI submission.

SQSS – (access group compliance)