

Automated Programmable Interfaces (API) Guidance

National Grid MIPI & GMRS Applications

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1. Executive Summary

The purpose of this document is to provide guidance on the use of our Automated Programmable Interface (API) service to retrieve gas market information data from our website.

2. Background Information

National Grid provides two publication services:

- GMRS (Gas Market Reporting System) - instantaneous flows
- MIPI (Market Information Provision Initiative) – market information

This data serves gas market participants with a wide-ranging view of data relevant to the operational behaviour of the network.

National Grid offer a Pull API service for all of our customers; customers can write their own code and select the data items that they are interested in downloading.

Here are the links required for each of the services:

GMRS	http://energywatch.natgrid.co.uk/EDP-PublicUI/PublicPI/InstantaneousFlowWebService.asmx
MIPI	http://marketinformation.natgrid.co.uk/MIPIws-public/public/publicwebservice.asmx

Further guidance for this service is available on the Supporting Information page at <http://www2.nationalgrid.com/uk/industry-information/gas-transmission-operational-data/supporting-information/>

3. Key Definitions

Term	Definition
Publication Object / Data Items	Placeholder for varied data published in MIPI system.
Applicable At	Time at which data is generated
Applicable For	Time for which data is applicable
Daily Values	Values associated with the day (applicable for a day)
Sub Daily Values	Value associated to a date & time (applicable for date & time)

4. API Overview

Name	GetPublicationDataWM
Description	Web service API that facilitates automated access to data published by MIPI (URL <TBD>)
Options to specify	<ul style="list-style-type: none"> • Publication object(s) • Date range
	<ul style="list-style-type: none"> • Data can be queried up to two years in the past • Supports options provided in the online screen, Data Item Explorer

5. API Parameters

5.1 Input Parameters

```
<GetPublicationDataWM xmlns="http://www.NationalGrid.com/MIPI/">
  <reqObject>
    <PublicationObjectNameList>
      <string>string</string>
      <string>string</string>
    </PublicationObjectNameList>
    <FromDate>dateTime</FromDate>
    <ToDate>dateTime</ToDate>
    <DateType>string</DateType>
    <LatestFlag>string</LatestFlag>
    <ApplicableForFlag>string</ApplicableForFlag>
  </reqObject>
</GetPublicationDataWM>
```

PublicationObjectNameList

- A list of all data item names are available in the Supporting Information section on the National Grid website at <http://www2.nationalgrid.com/uk/industry-information/gas-transmission-operational-data/supporting-information/>
- One or many publication object names can be passed as part of a single request.

From Date / To Date

- This is the date range for which data is required. Please note, this is a date / time parameter and thus it should include a timestamp with the date.

Date Type

- User can choose to provide 'From Date / To Date' as 'Gas Day; or 'normal' day (calendar day).
- If this parameter is set to Gas Day, then the timestamp for FromDate will be defaulted to the start of the gas Day and timestamp for ToDate will be defaulted to the end of the Gas Day.

For example:

From Date	01-OCT-2007 03:00:00
To Date	02-OCT-2007 12:00:00

Data will be returned for:

From Date	01-OCT-2007 05:00:00
To Date	03-OCT-2007 05:00:00

ApplicableFor Flag

- The user can chose to query data based on **Applicable At** (flag set to **N**) or **Applicable For** (flag set to **Y**).

Latest Flag

- The user can choose to receive all the values published for a particular applicable at or just the latest available value.

Combination of parameters to note

Sub daily value			Input		Data Returned For	
Case	Parameter Name	Parameter Value	FromDate	ToDate	FromDate	ToDate
1	DateType	normalday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00
	ApplicableForFlag	N				
2	DateType	gasday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 05:00:00	03-Oct-2007 05:00:00
	ApplicableForFlag	N				
3	DateType	normalday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00
	ApplicableForFlag	Y				
4	DateType	gasday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 05:00:00	03-Oct-2007 05:00:00
	ApplicableForFlag	Y				
Daily value			Input		Data Returned For	
Case	Parameter Name	Parameter Value	FromDate	ToDate	FromDate	ToDate
1	DateType	normalday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00
	ApplicableForFlag	N				
2	DateType	gasday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 05:00:00	03-Oct-2007 05:00:00
	ApplicableForFlag	N				
3	DateType	normalday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00
	ApplicableForFlag	Y				
4	DateType	gasday	01-Oct-2007 03:00:00	02-Oct-2007 03:00:00	01-Oct-2007 00:00:00	02-Oct-2007 00:00:00
	ApplicableForFlag	Y				

5.2 Output Parameters

API returns the following object

```

<GetPublicationDataWMResponse xmlns="http://www.NationalGrid.com/MIPI/">
  <GetPublicationDataWMResult>
    <CLSMIIPublicationObjectBE>
      <PublicationObjectName>string</PublicationObjectName>
      <PublicationObjectData>
        <CLSPublicationObjectDataBE xsi:nil="true" />
        <CLSPublicationObjectDataBE xsi:nil="true" />
      </PublicationObjectData>
    </CLSMIIPublicationObjectBE>
    .....
    .....
    <CLSMIIPublicationObjectBE>
    </CLSMIIPublicationObjectBE>
  </GetPublicationDataWMResult>
</GetPublicationDataWMResponse>

```

CLSPublicationObjectDataBE

Variable Name	Type
ApplicableAt	DateTime
ApplicableFor	DateTime
Value	String
GeneratedTimeStamp	DateTime
QualityIndicator	String
Substituted	String
CreatedDate	DateTime

Term	Definition
Value	Value can be numeric or text Max size is 2000 characters
Generated Time Stamp	Time at which data is scheduled to be published
Created Date	Time at which data has been published
Applicable At	Time at which value is generated

Applicable For	Time for which value is applicable For example, if a D+5 value is generated on 01-OCT-2077 11:00, then it will have: Applicable At: 06-OCT-2007 11:00:00 Applicable For: 01-OCT-2007 00:00:00
Quality Indicator	Late (L) Amended (A) Corrected (C)
Substituted (Y/N)	Y, if a substitution has been done

6. Client Requirements

- Should support HTTP 1.1
- Should include 'Accept-Encoding: zip" in HTTP Header
- Should be able to handle compressed data
- It can be developed in any platform that supports web services

7. Maximum Data Request

The API is configured to provide a maximum of 2MB of data per request.

- Implies that one query could query up to approximately 3600 records in a single request
- Data requests that exceed 2MB will result in an error message
- The data will be returned in a compressed format (HTTP compression)

8. Best Practices

- Your request should be based upon the publication frequency of the data item.
 - Group data items based on the publication frequency
 - Request data for 2 minutes after the publication time
- Use the 'latest' flag where only latest data is needed
- Set 'ApplicableForFlag' to 'N'; for current data request to get all of the data published today
- Send multiple smaller requests rather than a single large request.

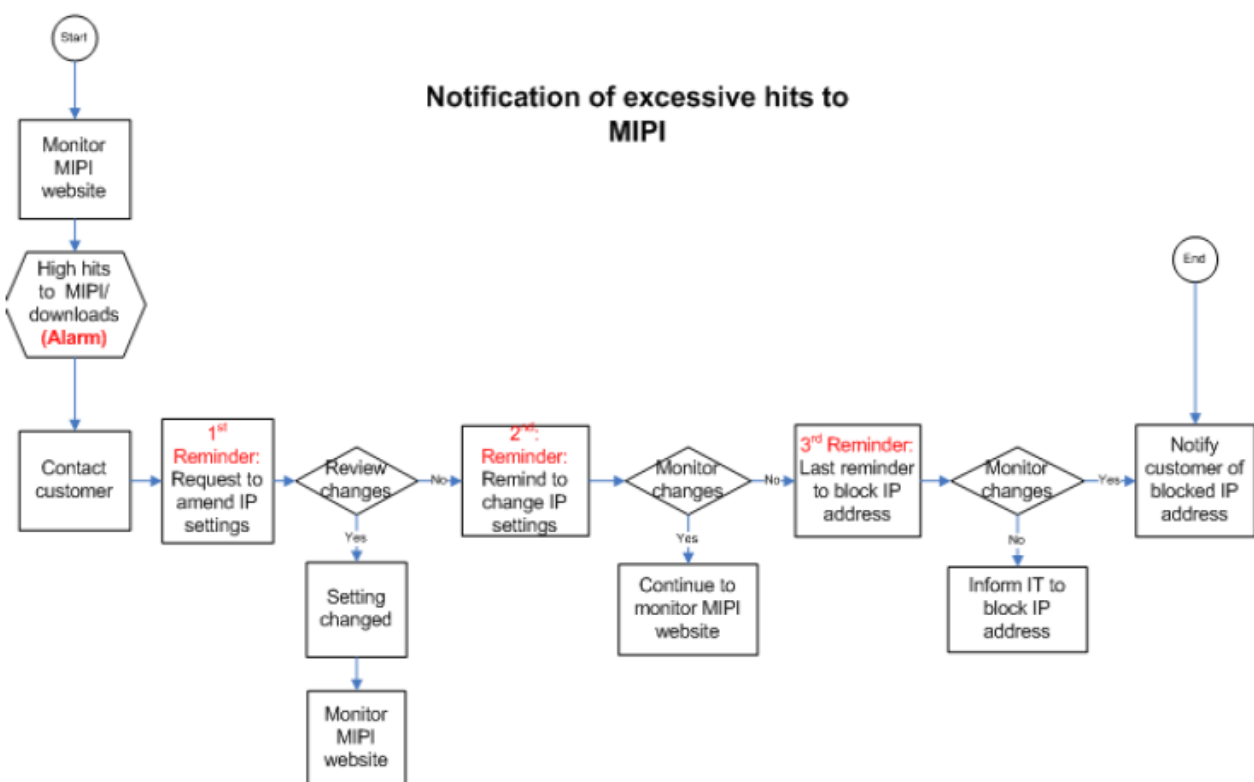
Data Frequency:

- GMRS – Data is at a 2 minute granularity but only refreshed every 12 minutes. Therefore, there is no need to pull the data any more often that every 12 minutes
- MIPI – Most data is refreshed on a daily basis, so users should only request data once per day. Some data is published hourly, or at other frequencies too.

9. Fair Usage Policy

National Grid proactively monitors the use of the API service. If you are deemed to be accessing the website at a level that we believe to be unnecessary given the current rate at which the data on the website is refreshed, we will ask you to reconsider your API script. This is to ensure that operational and commercial gas data items continue to be available to all gas community members and other interested parties in a consistent, timely and accurate manner.

The following process has been adopted by National Grid to ensure that users are not pulling the data more times than is necessary.



We are happy to support you if you are asked to reduce the amount of hits to the website. Unfortunately, if users continue to access the website at an excessive rate following our request to rewrite their API, we will take action to block your organisation from obtaining data from our systems to ensure the system remains available to the wider community

10. Support

If you have any queries pertaining to the API service, please contact the Operational Compliance team;

Telephone: +44 (0) 1926 65 6474

Email: Box.OperationalLiaison@nationalgrid.com.