Overview of the Wider Access Application Programming Interface (WA API)

GB Balancing Mechanism

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nationalgridESO

Contents

Introduction

This document aims to describe the architecture which the National Grid Electricity System Operator (NGESO) has in put place, to enable access to the GB Balancing Mechanism (BM) for small generating units (BMUs), via the Wider Access Application Programming Interface (WA API).

New opportunity

NGESO now offers two options for dynamic exchange of data – Electronic Data Transfer (EDT) and Dispatch & Logging (EDL) – for the purpose of accessing the BM:

- Connections of new private circuits using NGESO's telecommunications network provider via traditional, fixed-line technology
- Connection to the WA API infrastructure using web services and internet-based connectivity.

This document is intended for a wide audience to understand the generic requirements for small BM participants. A more detailed specification will be provided as part of the existing processes for participating in the BM, or for securing contracts for other balancing services from NGESO.

Strategic solution

NGESO has embraced Internet of Things technology, making the WA API available to market participants. This enables faster, more flexible connections to the BM. This in turn offers a reduced cost to end-consumers as a consequence of establishing new connections.

All new small BM participants can connect directly to the new the API infrastructure. However, they may also opt to use an intermediate hosting service, provided by a preferred commercial vendor.

The API solution is one of the deliverables for the overall Wider Access initiative. This will be expanded to encompass the forthcoming Replacement Reserve (RR) market, being established by the Trans-European RR Exchange (TERRE) programme.

Qualifying thresholds

NGESO recognises the need for commensurate solutions dependent on the size of BM participant. The above options offer varying levels of resilience, delivery (connection) time, cost and are based on the size of the BM participant.

Market participants are free to use such technologies until such time their portfolio exceeds certain thresholds. The BMU generating thresholds to qualify for use of the API are contained in our Communication Standards document.

Beyond these limits, market participant will be required to move over to traditional, fixed-line technology, where power resilience is guaranteed through telecom service providers.

Further information

More information about Wider Access to the BM and connection via the API is available on the Balancing Mechanism Wider Access page of the NGESO website.

To discuss opportunities offered by Wider Access and the API, please contact NGESO via your account manager or email Commercial.Operation@nationalgrideso.com.

System and connection overview

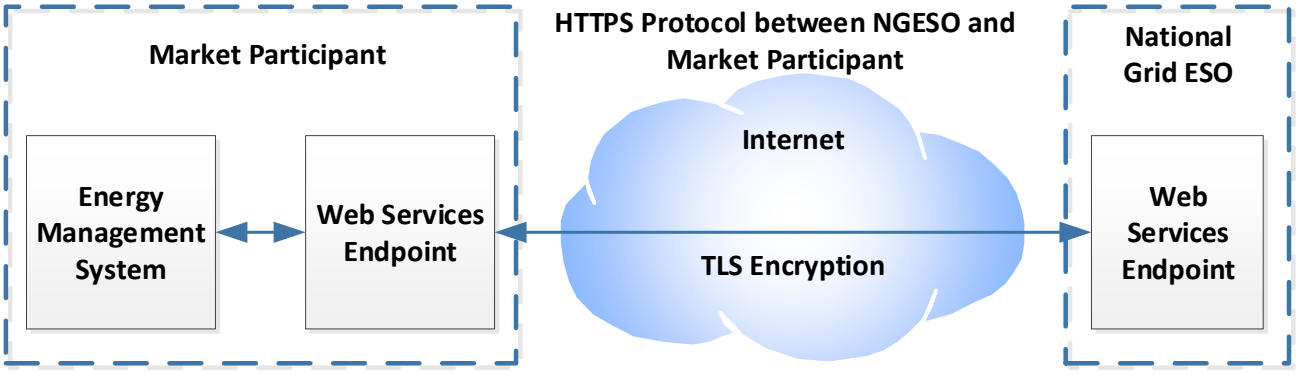
The new API infrastructure uses web services across the internet to enable access to the BM.

The API Infrastructure uses web services protocols, coupled with Transport Layer Security (TLS), to encrypt communications across the boundary between a market participant and NGESO.

To do this, the market participant must set up a web services client which will send packets of data containing signed Java Script Object Notation (JSON) payloads to the NGESO API service.

Conversely, the market participant must set up an end point to receive return packets of data, also containing signed JSON payloads, from NGESO's API service. These payloads, in both directions, will carry BM messages.

Further technical information will be provided at a suitable time during the connection process for the market participant. This is to ensure the security and integrity of the API service.



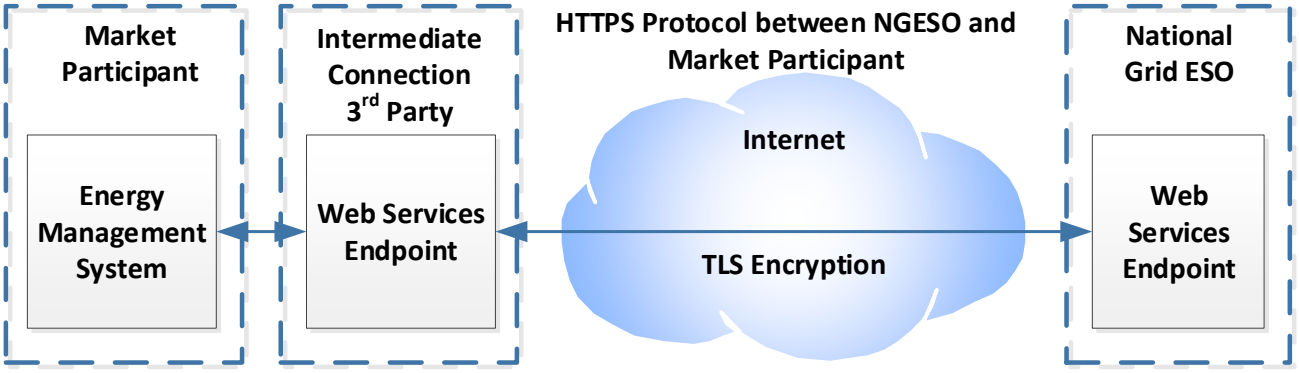
Intermediate connection

BM participants may opt to use an intermediate data host. This service is available from commercial vendors independent of NGESO. Such arrangements may offer the benefit of using bespoke or legacy protocols on the BM participants energy management systems.

Notes:

I. NGESO assumes no responsibility for the integrity of any BM messages between the BM participant and an intermediate host.

II. Any intermediate connection arrangements must ensure minimal latency, as BM data messages are time sensitive.



Establishing BMU connections

On signature of any connection agreements and payment of fees, NGESO will discuss options for access to the BM with the prospective market participant.

To establish a connection to the API services this process will be followed:

1. NGESO will provide a technical pro-forma to the participant – this requires details of the developers, API endpoints, etc., and will be provided from the box.wideraccessapi@nationalgrideso.com mailbox
2. The participant will need to return the pro-forma to NGESO *via the same mailbox*
3. NGESO will update its BM systems and provide access for the participant to relevant documentation and test environments
4. NGESO will contact the participant to arrange a suitable time to test the message flows, in preparation for future participation in the appropriate balancing markets.

Notes:

I. The sole purpose of the box.wideraccessapi@nationalgrideso.com mailbox is to enable communications concerning the connection process – for more general enquiries, please contact NGESO via your account manager or email Commercial.Operation@nationalgrideso.com

II. The participant should make available suitable technical staff to develop and implement a web services end point solution to establish bi-directional API connections

III. The establishment of the API connection requires simultaneous liaison between the participant and NGESO

IV. The participant should make available suitable technical staff to test the individual flows

V. The commissioning test requires simultaneous liaison between the participant and NGESO – this will involve the simulation and testing of all flows by the participant

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