IDX – Basic Power Quality Data - July 2026

1.00 March 2026

Pre-production: Monday 18 May 2026

Production: Wednesday 1 July 2026

Rules effective: Wednesday 1 July 2026

Important notice

Purpose & audience

This document describes the technical changes required to participant's systems for the Industry Data Exchange – Basic Power Quality Data - June 2026 (Release). The Australian Energy Market Operator (AEMO) provides this information as a service targeting business analysts and IT staff in participant organisations. It provides guidance about the changes to their market systems under the Electricity Rules (Rules), as at the date of publication.

How to use this document

- If you have questions about the business aspects of these changes, please see Consultations on AEMO's website.
- The references listed throughout this document are primary resources and take precedence over this document.
- Unless otherwise stated, you can find resources mentioned in this guide on AEMO's website.
- **Text in this format** is a link to related information. Some links require access to MarketNet.
- **Text in this format**, indicates a reference to a document on AEMO's website.
- **Text in this format** is an action to perform in the Markets Portal.
- This document is written in plain language for easy reading. Where there is a discrepancy between the Rules and information or a term in this document, the Rules take precedence.
- Glossary Terms are capitalised and have the meanings listed against them in the Glossary.
- Rules Terms have the meaning listed against them in the **National Electricity Rules** (Rules).

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Distribution

Available to the public.

Document Identification

Prepared by: AEMO Digital

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Version History

1.00 Initial creation

Documents made obsolete

The release of this document changes only the version of IDX – Basic Power Quality Data - July 2026.

Support Hub

To contact AEMO's Support Hub use Contact Us on AEMO's website or for urgent matters phone: 1300 AEMO 00 (1300 236 600.

Contents

1 Introduction

1.1 Audience

AEMO provides this information as a service targeting business analysts and IT staff in Registered Participant companies.

The primary audiences are:

- Local Network Service Provider (LNSP) – Recipients of Basic Power Quality Data (BPQD).
- Metering Coordinator (MC) – Responsible for sending BPQD.
- Metering Data Provider (MDP) – Send BPQD on behalf of the MC.

1.2 Objective

The Industry Data Exchange – Basic Power Quality Data - June 2026 (Release) describes the projects planned by AEMO from a participant perspective and includes any system related changes for participants.

1.3 Status

Version	Status
1.00	The Power Quality Data API design is now available for participants' builds. AEMO anticipates design updates to the Markets Portal interfaces, access information, and API specification details including authentication mechanisms and responses
0.06	The Power Quality Data API design is now available for participants' builds. AEMO anticipates design updates to the Markets Portal interfaces, access information, and API specification details including authentication mechanisms and responses
0.05	The Power Quality Data API design is now available for participants' builds. AEMO anticipates design updates to the Markets Portal interfaces, access information, and API specification details including authentication mechanisms and responses
0.04	The Power Quality Data API design is now available for participants' builds. AEMO anticipates design updates to the Markets Portal interfaces, access information, and API specification details including authentication mechanisms and responses
0.03	In progress. The design is not ready for participants' builds
0.02	In progress. The design is not ready for participants' builds

Version	Status
0.01	 **Initial draft for review. The design is not ready for participants' builds** Presents the Industry Data Exchange – Basic Power Quality Data - June 2026 evolving design. **Please send feedback to Contact Us**. In the **Details of your enquiry** section, mention the EAS Knowledge Management team as the Resolver group.

1.4 Release dates

Scheduled for implementation in:

- Pre-production: Monday 18 May 2026
- Production: Wednesday 1 July 2026

1.5 Projects and enhancements

Changes and enhancements for this Release include:

No.	Functionality	Change	Affected interface	Reference
1	Power Quality Data (PQD)	New interface for managing Basic Power Quality Data (BPQD) and participant controls	Markets Portal	**Markets Portal**
2	PQD	API for BPQD submission and retrieval	API	**Power Quality Data API**
3	WebSockets	WebSockets for event notification and flow control events	IDX	**Industry Data Exchange Platform Standard**

1.6 Rule and procedure changes

The following rules and procedures take precedence over technical specifications and guides.

Title	Version	Effective date
National Electricity Amendment (Accelerating smart meter deployment) Rule 2024 No. 20	2025/01	Final
Guide to the role of Metering Coordinator	1.41	1 July 2026
Basic Power Quality Data Procedure	1	1 July 2026
Retail Electricity Market Procedures- Glossary and Framework	4.4	1 December 2025
Metrology Procedure: Part A	7.9	1 July 2026
Metrology Procedure: Part B	7.9	1 July 2026
B2B Procedure: Data Posting Process	4.0	1 July 2026
B2B Procedure: Customer and Site Details Notification Process	4.0	1 July 2026
B2B Procedure: Service Order Process	4.0	1 July 2026
B2B Procedure: Meter Data Process	4.0	1 July 2026
B2B Procedure: One Way Notification Process	4.0	1 July 2026
B2B Procedure: Technical Delivery Specification Process	4.0	1 July 2026

1.7 Related technical specifications

Title	Description
Industry Data Exchange – Industry Data Exchange Platform – June 2026	Industry Data Exchange Platform core functionality

1.8 Related documents

Once published, these resources take precedence over this technical specification

These guides and resources are updated according to this technical specification and published for the pre-production Release Date.

Title	Description	Status
Industry Data Exchange Platform Standard	Describes the technical standards, protocols, and payloads for data exchange on the Industry Data Exchange (IDX) platform	Draft

Title	Description	Status
API portal	Information about the PQD API	Not started
Basic Power Quality Data	Online help for managing BPQD	Not started
Retail Electricity Market Glossary and Framework	Assists Retail Electricity Market participants to understand the overall MSATS framework, NEM procedures, and procedure terms	Not started

1.9 Approval to change

No approval or agreement to change required from participant change controllers.

1.10 Market systems user group meetings

The Market Systems User Group (MSUG) is an industry user group established to discuss NEM wholesale and retail IT systems releases. Its purpose is to facilitate the continuing improvement of AEMO's IT systems by seeking feedback and collaboration from participants.

MSUG meetings are open to all interested parties, with invitations sent to all included on the distribution list. If you have a technical question for a project and want to attend the MSUG ask your company's support team to include your email address in their **AEMO Help Desk Bulletin (CRM)** distribution list.

1.11 Version numbers

AEMO releases new versions of this document as the technical requirements are streamlined.

Incremental version numbers such as 1.01, 2.01 and so on mean there is a minor change to the technical specification.

Major version numbers such as 1.00, 2.00 means there are substantial changes to the technical specification. Participants must carefully review these changes, detailed below.

1.12 Changes in this version

This version has the following changes:

- Revises document title to IDX – Basic Power Quality Data - July 2026

- In the PQD payload schema, revert change to intervalLength value in seconds to align with the B2B Data Posting Process.
- The GET /bpqd List Basic Power Quality Data metadata request returns the following additional properties in a 200 response:
  - Business function ID
  - Business function resource ID
  - Market
  - Message type
  - Message ID
  - Channel
- Add User Rights Management information.
- Adds **Flow Control** information.

2 Proposed Timeline

The dates for the Market System User Group Meetings (MSUG) are tentative. We will provide an invitation one week prior to the meeting.

Milestone	Date	Description
Approval required	n/a	See **Approval to change**
Revised Technical Specification	February 2026	AEMO releases new versions of this document as the technical requirements are streamlined. During the project this document is the source of truth From the production release, the technical specification becomes final and the **related documents** become the source of truth **Technical Specification Portal**
Related documents publication	20 April 2026 Monday 18 May 2026	Release of guides and resources mentioned in Related on page 8
MSUG meeting	15 April 2026	Market Systems User Group Meeting (MSUG) to review the technical specification and ask AEMO technical SMEs questions This date is tentative. The Knowledge Management Team provides the invitation prior to the meeting
Pre-production refresh	7 April 2026 – 10 April 2026	Refresh of the Retail pre-production system with data from the production system. For more information, **see Pre-production Refresh**
Pre-production available	Monday 18 May 2026	Testing period begins for participants
Coordinated industry test	18 May 2026 - 15 June 2026	AEMO coordinated testing with participants
Production systems available	Wednesday 1 July 2026	Production systems available to participants

3 Participant Impact

From 1 July 2026, Metering Coordinators (MCs), Metering Data Providers (MDP), and Local Network Service Providers (LNSP) need to schedule staff and resources to accommodate the delivery or receipt of Basic Power Quality Data (BPQD) on the Industry Data Exchange (IDX) platform.

3.1 Industry data exchange

BPQD is the first business function on the Industry IDX platform. BPQD from smart meters are submitted by MCs or MDPs using a Fire and Forget API Channel, an asynchronous API channel that does not require formal acknowledgements. IDX queues messages for LNSPs, who retrieve them using the Power Quality Data (PQD) API.

3.2 Power quality data API

The PQD API provides endpoints for submitting, retrieving, and managing Basic Power Quality Data (BPQD) messages. See **Power Quality Data API**.

MCs or MDPs on behalf of the MC must bundle daily BPQD readings for multiple NMIs into single payloads (up to 10 MB uncompressed) and apply JSON minification to maximise efficiency. See **Submission requirements**.

3.3 IDX web interfaces

New IDX interfaces in the Markets Portal to manage and troubleshoot BPQD processes. For more information, see **IDX Web Interfaces**.

Interface	Description	Role for BPQD
Transaction Log	Provides logs for BPQD transactions	LNSP MDP
Outbound Archive	Allows LNSPs to search, view, and retrieve archived outbound messages	LNSP
Flow Control	Enables participants to monitor and manage message flows for B2B business functions	LNSP
Participant Status	Displays the current and historical operational status of all business functions and resources	LNSP MDP

3.4 WebSocket API

The WebSocket API is provided by the IDX platform. It enables Participant systems to maintain a persistent, bi-directional connection to AEMO to receive instant business function event notifications.

3.5 IDX APIs

For this Release, IDX provides the following APIs:

- Flow Control - Monitors and controls message delivery across B2B Business Functions on IDX.
- Business Function Information - Gets Business Functions and Business Function Resources.
- Transaction Log - Gets message and transaction logs associated with your Participant ID.
- Archive - Gets archived Business Function payloads in outbound messages for the receiving Participant.

For details, see **IDX APIs**.

3.6 User rights management

Participant administrators have new User Rights Management (URM) entities for managing their Participant User access to PQD and IDX APIs and Markets Portal interfaces.

Entity	Description
PQD_BPQD	PQD API access
FCTRL_FCTRL	Write access to Flow Control API and web interface
FCTRL_STATUS	Read access to Flow Control API and web interface
TRANSLOG_TRANSLOG	Transaction Log API and web interface
ARCH_RETRIEVE	Archive API and Outbound Archive web interface

3.6.1 Machine-to-machine access

For machine-to-machine access to PQD and IDX APIs, participants must create dedicated URM accounts. These accounts must only be assigned the required IDX entities relevant to the API usage and not used for accessing IDX services through Markets Portal interfaces.
Participants must notify AEMO of service accounts used for machine-to-machine access so OAuth 2.0 client-credentials authorization can be enabled.

3.6.2 Markets Portal interface access

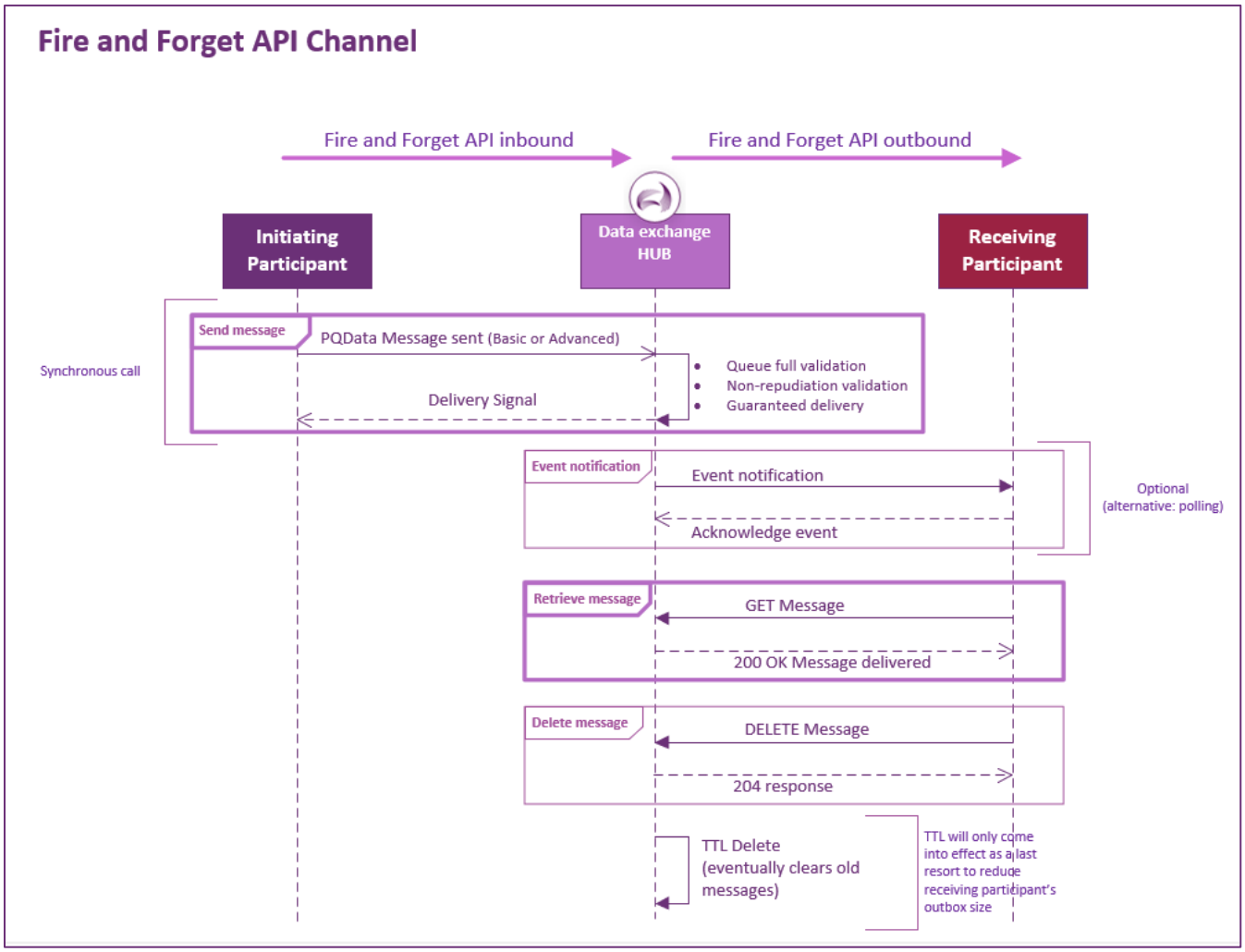
For access to IDX user interfaces in the Markets Portal, participants can use existing user accounts or create new user accounts. Your Participant Administrator manages access to the interfaces by assigning the following entities in the Markets Portal menu **Administration > Maintain Rights**. For help, see User Rights Management in Markets Portal Help.

4 Basic Power Quality Data

Basic Power Quality Data (BPQD) consists of voltage, current, and phase angle. From 1 July 2026, The National Electricity Amendment Rule 2024 No. 20, mandates the delivery of this data from smart meters (except Type 4A and Type 8B meters). BPQD is delivered by Metering Coordinators (MCs) or MDPs on behalf of the MC to Local Network Service Providers (LNSPs) using AEMO's Industry Data Exchange (IDX), a data exchange hub for all markets.

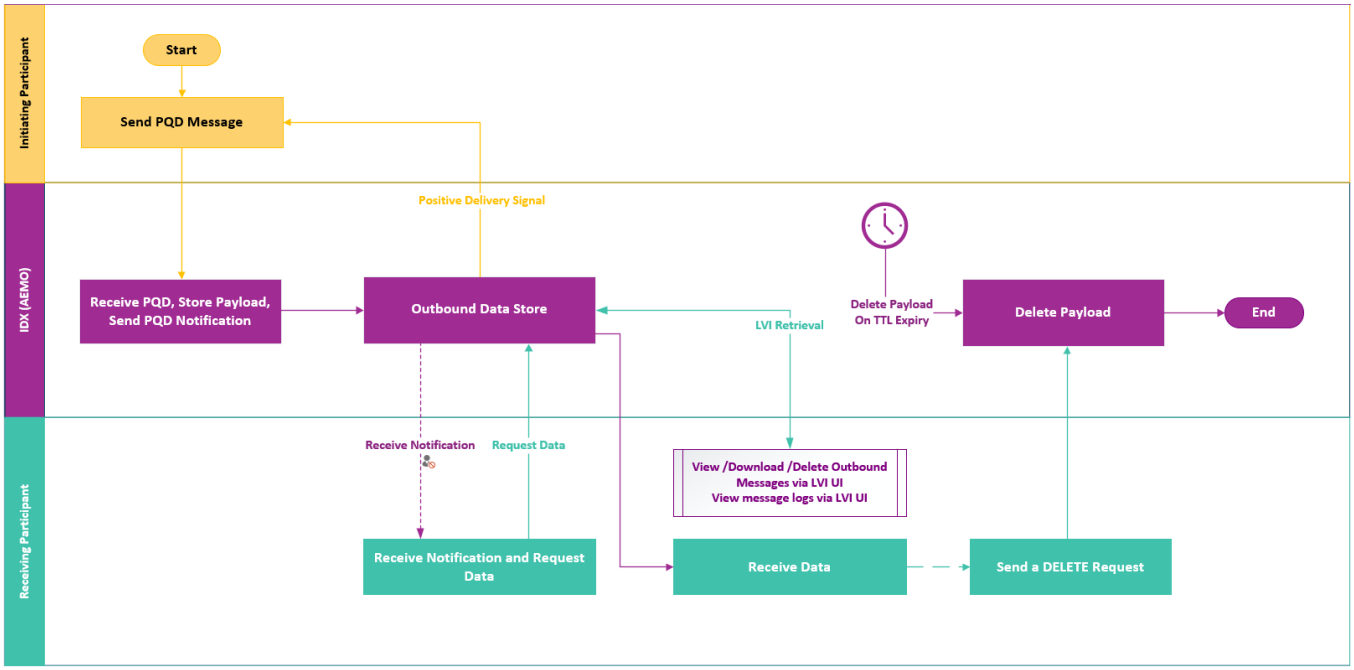
4.1 Delivery mechanism

MCs deliver BPQD to Local Network Service Providers LNSPs using the Fire and Forget API Channel on the IDX platform. This asynchronous data delivery mechanism does not require formal acknowledgements from the receiving party.



The process flow is described below:

Process	Description	Interface	Role
1	The Metering Coordinator (MC) or their delegate (for example, Metering Data Provider) submits a BPQD payload according to the PQD schema using the POST /bpqd API endpoint. IDX only returns an HTTP 200 OK response. No hub MACK is issued	PQD API	MC MDP
2	Upon successful submission, IDX places the BPQD message into the recipient LNSP's queue. The message remains in the queue for up to 10 calendar days, unless deleted earlier by the LNSP.	Transaction log web interface or API	
3	IDX sends an WebSocket event notification to the LNSP, indicating a new message is available.	Event subscription Event Notification API call to establish a connection for event notifications	LNSP
4	The LNSP uses the GET /bpqd API endpoint to retrieve metadata for all queued messages. To retrieve the full payload, GET /bpqd/{messageContextId} API endpoint is used. For troubleshooting purposes, messages can be downloaded from the IDX interface in the Markets Portal.	PQD API Transaction Log web interface	LNSP
5	Message deletion: After successful retrieval, the LNSP sends a DELETE /bpqd/{messageContextId} API request to remove the message from IDX outbound queue. They can also delete the message in the IDX interface in the Markets Portal. If the message is not deleted, IDX automatically removes it after the TTL (Time to Live) expiry period of 10 calendar days.	PQD API Transaction Log web interface	LNSP



4.2 High-level changes

Function	Description	Reference
PQD API	API for submitting and retrieving basic power quality data in the NEM	**Power Quality Data API**
IDX WebSocket	Websocket for receiving BPQD event notifications and flow control events	**Industry Data Exchange Platform Standard**
IDX APIs	APIs to manage message flows, discover and inspect available business functions, view message and transaction history, and retrieve archived outbound payloads	TBC
Markets Portal	New Markets Portal interfaces for LNSPs to assist troubleshooting PQD transactions, Participant accreditation and controls	**Markets Portal**

4.3 BPQD lifecycle

Basic Power Quality Data (BPQD) is delivered on Industry Data Exchange (IDX) as a Business Function Resource. Each Business Function Resource on the IDX platform has its own configured Time to Live (TTL) and archive retention settings.

4.3.1 Time to Live (TTL)

Each BPQD message delivered to a receiving participant's outbound queue is assigned a Time to Live (TTL). The TTL defines how long the message is available in the outbound queue if it is not deleted by the receiving participant.

For BPQD, the TTL is 10 calendar days from the time the message is successfully submitted to IDX. If the receiving participant does not delete the message within this period, IDX automatically removes the message from the outbound queue. Any message removed from the outbound queue is available in the archive, up-to the archive retention period.

4.3.2 Participant-initiated message deletion

Receiving participants (for example, LNSPs) are expected to delete BPQD messages after successful retrieval. Messages are deleted by using either the:

- Power Quality Data API - DELETE /bpqd/{messageContextId} operation.
- **IDX Transaction Log interface** in the Markets Portal.

Deleting a message removes it from the outbound queue before the TTL expiry is reached.

4.3.3 Archive retention and expiry

Archive retention is defined per Business Function Resource. After message delivery, BPQD payloads are retained in the IDX archive for 30 calendar days. Once the retention period has elapsed, the payload is deleted from the archive.

4.3.4 BPQD configuration details

4.4 You can retrieve BPQD configuration details by querying the Business Function Information API. It includes the archive retention settings, TTL, schema versioning, and schema transition windows. For details, see the Business Function Information OpenAPI Specification.Flow Control

IDX automatically applies a stopped event for BPQD when the number of pending messages for the recipient (LNSP) exceeds the configured high-watermark threshold. This occurs when messages are not deleted in a timely manner by the LNSP.

When a stopped event occurs:

- IDX stops accepting new BPQD submissions for the affected LNSP.
- Any new POST /bpqd API request for the LNSP is rejected with an HTTP 503 (Service Unavailable) response.

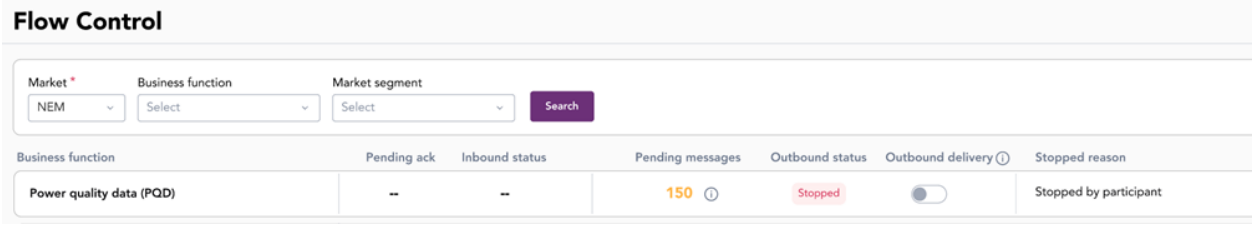
If an initiating participant (MC or MDP) is subscribed to WebSocket notifications, IDX sends a Flow Control Stopped event notification to the MC or MDP for the affected LNSP. Upon receiving the notification, they must suspend further BPQD submissions to the LNSP.

Alternatively, participants can retrieve the flow control status by:

- querying the **Flow Control API** get / businessFunctions endpoint.

```
{
  "data": {
    "businessFunctions": [
      {
        "businessFunctionId": "pqd",
        "ackStatus": null,
        "ackCount": null,
        "ackBreachedTimestamp": null,
        "messageStatus": "high",
        "messageCount": 210,
        "messageBreachedTimestamp": "2026-10-30T12:00:00.000+00:00"
      }
    ]
  }
}
```


- viewing the **Flow Control web interface**.



Participants can view message and acknowledgement statuses only at the business function level. A subsequent release will enable participants to view outbound status at the business function resource level through the Hub Queue web interface.

Initiating participants must not implement continuous or automatic retry logic while a flow control stopped event is active.

When the LNSP deletes sufficient messages to remove a stopped event, IDX sends a Service Running event notification to subscribed participants. MCs or MDPs can then resume BPQD submissions to the LNSP.

5 Participant-initiated Event Notifications

The Industry Data Exchange (IDX) Hub uses WebSockets to establish a persistent, full-duplex communication channel between AEMO and Market Participants. This enables real time event notifications for BPQD messages.

An event notification includes metadata such as:

- messageContextId
- messageType
- priority
- initiatingParticipantId

IDX can also send Flow Control Events using WebSockets to inform participants of:

- Full recipient queues
- Insufficient delete rates
- Outage notifications

You can subscribe to BPQD event notifications in the Markets Portal's Event Subscription interface.

For more information, see the **Industry Data Exchange Platform Standard**.

6 Power Quality Data Payload Schema

The Basic Power Quality Data (BPQD) payload schema is designed to support AEMO's IDX Fire and Forget API pattern. It is a data object consisting of three main sections:

- **Header**: The header contains metadata about the message and its routing.
- **Transaction**: Transaction provides the transaction details and the associated NMI data.
- **NMI details**: Each transaction contains one or more NMI data objects containing metering and interval data. Each interval data object contains a timestamp and a Reads object with BPQD data.

Schema details are provided in the **Power Quality Data OpenAPI specification.**

BPQD payload example


```
{
  "data": {
    "header": {
      "initiatingParticipantId": "EASTENGY",
      "receivingParticipantId": [
        "RETAILER01"
      ],
      "messageId": "550e8400-e29b-41d4-a716-446655440000",
      "messageDateTime": "2026-02-06T12:30:45.123+10:00",
      "businessFunctionId": "pqd",
      "businessFunctionResourceId": "bpqd",
      "priority": "Low",
      "market": "NEM"
    },
    "transactions": [
      {
        "transactionId": "TXN-20260206-000001",
        "transactionType": "BasicPowerQualityData",
        "transactionDateTime": "2026-02-06T12:31:00.000+10:00",
        "nmiDetails": [
          {
            "nmi": "NMI1234ABCD",
            "nmiChecksum": 7,
            "meterSerialNumber": "MTRSERIAL001",
            "intervalLength": "300",
            "intervalData": [
              {
                "intervalEndDateTime": "2026-02-
06T05:00:00.000+10:00",
                "reads": {
                  "V1": 231.52,
                  "C1": 10.34,
                  "A1": 0.25,
                  "V2": 229.87,
                  "C2": 9.98,
                  "A2": 0.24,
                  "V3": 232.10,
                  "C3": 10.12,
                  "A3": 0.26
                }
              },
              {
                "intervalEndDateTime": "2026-02-
06T05:10:00.000+10:00",
                "reads": {
                  "V1": 231.40,
                  "C1": 10.20,
                  "A1": 0.26,
                  "V2": 230.10,
                  "C2": 10.05,
                  "A2": 0.23,
```

```
                    "V3": 231.95,
                    "C3": 10.18,
                    "A3": 0.25
                }
            }
        ]
    }
  ]
 }
}
```


6.1 Header

data.header object contains the message metadata.

Property	Type	Required	Requirements	Description
initiatingParticipantId	string	Yes	Maximum 10 characters	The ID of the participant sending the message
receivingParticipantId	string	Yes	Maximum 10 characters	The ID of the participant receiving the message
messageId	string	Yes	^[A-Z0-9]{20}-MSG-\d{13}$, len 1–36	A unique identifier for the message. For example, PARTICIPANT…-MSG-1234567890123
messageDateTime	string	Yes	YYYY-MM-DDTHH:mm:ss.SSS±hh:mm ±hh:mm is UTC offset (+ or -)	Date and time the message is created 2025-07-21T17:39:04.547+10:00
businessFunctionId	string	Yes	PQD	The business function or transaction group identifier
businessFunctionResourceId	string	Yes	BPQD	A unique identifier representing a specific Business Function Resource within a parent Business Function

Property	Type	Required	Requirements	Description
businessFunctionSubResourceId	string	No	n/a for BPQD	A unique identifier used to represent a specific sub-resource or artefact within a Business Function Resource. It corresponds to an individual file, dataset, message payload, or discrete exchange unit produced, consumed, or managed as part of a Business Function Resource
priority	string	Yes	high, medium, or low	The message priority level
market	string	Yes	Enum includes NEM, state ELEC/GAS variants; default NEM	The energy market that applies to the message

6.2 Transactions

data.transactions is a list of transaction objects.

Property	Type	Required	Requirements	Description
transactionId	string	Yes	Format: [A-Z0-9]{20}-TNS-\d{13}	A unique identifier for the transaction
transactionType	string	Yes	For BPQD, it must be BasicPowerQualityData	The type of transaction
transactionDateTime	string	Yes	ISO 8601 with UTC offset	Timestamp of the transaction
nmiDetails[]	array	Yes	NMI details	An array of NMI data objects. See NMI details

6.3 NMI details

Data.transactions.nmiDetails is a nested array of NMI objects in the transaction object containing meter and interval data.

Property	Type	Required	Requirements	Description
nmi	string	Yes	10 characters	National Metering Identifier

Property	Type	Required	Requirements	Description
nmiChecksum	string	Yes	Integer 0-9	The checksum for the NMI
meterSerialNumber	string	Yes	≤ 12 chars	The meter serial number
intervalLength	string	No	A non-negative integer with a maximum of four digits (0–9999).	Interval length expressed in seconds. For example, 300
intervalData	object	Yes	intervalData	An object containing a timestamp and a set of readings for each interval

6.3.1 Interval data

data.transactions.nmiDetails.intervalData contains a timestamp and a set of readings for each interval.

Property	Type	Required	Requirements			Description
intervalEndDateTime			String	Yes	YYYY-MM-DDTHH:mm:ss.SSS±hh:mm ±hh:mm is UTC offset (+ or -)	Interval end date and time
reads			Object	Yes	basicReadItem objects	basicReadItem objects for each interval element

Basic read item

An object containing voltage, current, and phase angle readings.

Schema object	Type	Required	Requirements	Description
basicReadItem	Vector-style named attributes	Yes	V1, V2, V3, C1, C2, C3 Minimum: -9999999999999.99 Maximum: 9999999999999.99 A1, A2, A3 minimum: -999.99 maximum: 999.99	anyOf: At least one of V1, C1, A1, V2, C2, A2, V3, C3, A3 must be present in each basicReadItem

7 Power Quality Data API

This API provides an interface for submitting and retrieving structured basic power quality data within the NEM. For details about the API endpoints, server, payload and response schemas, and security details, see **Power Quality Data OpenAPI specification**.

7.1 Access

Participant administrators provide access to the PQD API using the entity PQD_BPQD. The following permissions provide access to the associated resources and endpoints:

- R (read) - All endpoints using the GET method.
- C (create) - All endpoints using the POST method.

For more information, see **Guide to User Rights Management**.

7.2 API gateway

Participants can connect to the AEMO API Gateway through MarketNet.

All communications between AEMO's API gateway and participants' gateways use HTTPS. AEMO APIs do not support HTTP.

7.3 Authentication

The API uses OAuth 2.0 with the client credentials grant type. A bearer token is returned and used to authenticate API requests. See securitySchemes in the **Power Quality Data OpenAPI specification**.

7.4 Base urls

Environment	Base URLs
MarketNet pre-production	https://apis.nem.ppd.marketnet.net.au/pqd/v1
MarketNet production	https://apis.nem.marketnet.net.au/pqd/v1

7.5 Compression

For details, see the **Industry Data Exchange Platform Standard**.

7.6 Endpoints

Endpoint	Method	Description	Success response
/bpqd	POST	Submit BPQD. Payload contains data at the 5-minute trading resolution. For payload details, see **PQD payload format and structure**	201postPqd
/bpqd	GET	A list of metadata for BPQD messages in the queue	200 (OK)
/bpqd/{messageContextId}	GET	Retrieve a BPQD payload	200 (OK)
/bpqd/{messageContextId}	DELETE	Delete a BPQD payload	204 (Deleted)
/bpqd/first	GET	Retrieve the first message by a given priority	200 (OK)

7.7 HTTP response codes

For details, see the **power quality data openapi specification**.

7.8 Pagination

Cursor-based pagination is supported for GET API requests.

For the first API request, use itemCount as a query parameter without a cursor to retrieve the first set of data. In the following example, the request specifies to return 2 records on a page:

```
https://apis.nem.marketnet.net.au/pqd/v1/bpqd?itemCount=2&fromDateTime
=2025-10-16T08:56:45+00:00&toDateTime=2025-10-17T08:56:45+00:00
```

The response provides a meta object with the nextCursor value. For example:

```
meta:
      itemCount: 2
      nextCursor: pqd_partid_m_actew_9c1e2d3a-4b5f-6c7d-8e9f-
0a1b2c3d4e22
      totalRecords: 4
      totalPages: 2
```

For subsequent requests, use the nextCursor value provided in the previous response in the cursor query parameter to request the next set of data. For example:

```
https://apis.nem.marketnet.net.au/pqd/v1/bpqd?itemCount=2&cursor=pqd_bpqd_m_partid_9c1e2d3a-4b5f-6c7d-8e9f-0a1b2c3d4e22&fromDateTime=2025-10-16T08:56:45+00:00&toDateTime=2025-10-17T08:56:45+00:00
```

7.9 Payload limit

The payload limit is 10 MB uncompressed.

7.10 PQD payload format

The PQD payload format is JSON. For schema details, see **PQD schema**.

A BPQD payload contains data at the 5-minute trading resolution.

7.11 Rate limiting

Each Participant ID is limited to 50 requests per minute per endpoint.

Exceeding the limit results in a 429 Too Many Requests response, and further requests are rejected.

7.12 Submission requirements

MCs and MDPs must implement BPQD bundling and JSON minification as part of their BPQD submission workflow.

7.12.1 BPQD bundling

BPQD submissions use the IDX Fire and Forget API Channel designed for high-volume batch submissions. Participants must minimise message counts by automatically aggregating BPQD readings into payloads that utilise the 10 MB uncompressed limit.

Payloads must be sized as close as possible to the 10 MB uncompressed limit. Participant systems must not send individual messages per NMI, except in unavoidable circumstances.

7.12.2 JSON minification

JSON minification must be applied to all outbound BPQD payloads. Minification involves removing unnecessary whitespaces, line breaks, and comments from JSON data prior to submission. Payloads must be minified to maximise the number of records per submission and minimise network utilisation.

Automated JSON minification should be integrated into the BPQD outbound process.

7.13 Submission size

A submission request has a payload limit of 10 MB uncompressed. For more details, see **Submission requirements**.

7.14 Validation

Validation is applied only to HTTP headers, query, and path parameters in the request.

The BPQD payload schema and content is not validated.

8 Markets Portal

The Markets Portal includes IDX interfaces for LNSPs to troubleshoot BPQD transactions, Participant accreditation, and Participant controls. See **IDX Web Interfaces**.

9 AEMO Gateway Software

The AEMO Gateway Software combines the **MSATS Participant Batcher**, **pdrBatcher** applications, and also connects Participant systems to the Industry Data Exchange (IDX).

More details to follow.

10 FAQs

10.1 When is the technical specification final?

The technical specification is updated monthly and is source of truth during the project lifecycle. It is final at the production release. From this point, **related content** such as Markets Portal Help and API references become the source of truth.

10.2 Is BPQD the first Business Function Resource available when IDX goes live?

Yes. When IDX goes into production on 1 July 2026, Basic Power Quality Data (BPQD) will be the only Business Function Resource available on the IDX platform.

10.3 What message exchange pattern does BPQD use?

BPQD uses a fire-and-forget messaging pattern. The receiving participant does not send acknowledgements. Messages move from a pending status to a completed status once delivered.

10.4 What payload format is used for BPQD?

BPQD uses **JSON payloads** and RESTful APIs. See **Power Quality Data OpenAPI specification**.

10.5 Are BPQD messages archived, and for how long?

Yes, BPQD messages are archived. The archive retention period is 30 calendar days. Archived messages are retrieved in the IDX Archive web interface or using the **Archive API**.

10.6 Will IDX support event notifications for BPQD?

Yes, IDX will support BPQD event notifications using the WebSockets protocol. The notifications inform participants when a new BPQD message is available, or an event (for example, a Flow Control change) has occurred.

IDX does not push BPQD data through WebSockets. Receiving participants must retrieve the message through the PQD API after receiving the notification.

10.7 When is the AEMO Gateway Software available for BPQD?

Yes. The AEMO Gateway is available for BPQD for pre-production on 18 May 2026. It will work with the new Industry Data Exchange (IDX) platform.

10.8 Does the PQD API use TLS certificates like the bidding system?

Yes. The API requires TLS certificates.

10.9 Does the PQD API require an AEMO VPN connection?

Yes, the API is only accessible over MarketNet.

11 Implementation

11.1 Connectivity and software

Choose a gateway approach:

- Install AEMO Gateway Software within your environment; or
- Use your own gateway that can meet IDX's protocol, security, and interoperability requirements.

Network/Egress: Ensure outbound connectivity to the MarketNet API endpoints for pre-production & production.

11.2 Security and identity

Implement OAuth-based authentication and integrate with AEMO's unified identity model. Token lifecycle, scopes, and client credential handling must be handled by participant systems.

11.3 API integration and payloads

Adopt the standard IDX patterns applicable to R1 (inbound push from MC → AEMO; outbound pull to DNSP) and support metadata-first retrieval (discover → download → acknowledge).
[Applicatio...Recording | Video]

11.4 Environments and testing

Use the defined non-prod environments aligned to the IDX R1 test strategy (DEV/TST/UAT/PPD/PRD). BPQD testing follows the Release 1 pipeline; industry testing occurs in pre-production before production cut-over.

11.5 Monitoring and operations

Leverage IDX metadata/translog views via API to track message readiness and status until IDX web interfaces, for example, Hub Queue, arrive in later releases. R1 emphasises the API-based operations.

11.6 Transition

There is no transition required as BPQD is operating on the IDX platform.

11.7 Implications

To maintain systems in-line with AEMO's market systems, participants need to:

- Review and assess the impact on their market systems with respect to the changes implemented as part of this Release.
- Change their systems prior to the implementation of this Release.
- Schedule staff and resources to upgrade their market systems for the production implementation of this Release.

11.8 Risks

TBC

12 Terms

12.1 Rules Terms

You can find the following terms defined in the **National Electricity Rules (NER)** and the **Settlements Residue Auction Rules**.

Term
AEMO
AEMO Markets Portal

Term
AEMO Website
Market Participants
NEM

Term
Product

12.2 Glossary

You can find a full list of AEMO glossary terms in **Industry Terminology** on AEMO's website.

Abbreviation/Term	Explanation
API	Application Protocol Interface
AEST	Australian Eastern Standard Time
B2B	Business-to-business
Business Function	A grouping of related business transactions
Business Function Resource	A logical grouping of related business services or sub-services
Business Function Sub-resource	A sub-service or component within a Business Function
BPQD	Basic Power Quality Data
Fire and Forget	Data exchange pattern where the initiator sends a message without a detailed acknowledgement from the recipient
IDX	Industry Data Exchange
LNSP	Local Network Service Provider
MACK	Message acknowledgement
MDP	Metering Data Provider

Abbreviation/Term	Explanation
NER	National Electricity Rules
NMI	National Metering Identifier
Inbound	AEMO is the recipient of the Business Function. It is delivered to AEMO, either pushed by a participant or pulled by AEMO via an API GET request
Outbound	The Participant is the receiver of the business function. It is delivered from AEMO, whether it is pushed by AEMO or pulled by an external party by an API GET request
PQD	Power Quality Data
Release	IDX – Basic Power Quality Data - July 2026
Release Dates	Pre-production: Monday 18 May 2026 Production: Wednesday 1 July 2026
TACK	Transaction acknowledgment
TBC	To be confirmed
TTL	Time to live

A1. Version history

V0.06

- Revises pre-production and production release dates
- Updates IDX delivery mechanism section
- Updates Submission Requirements
- Adds Basic Power Quality Data lifecycle details
- Revises intervalData schema:
  - Updates read array to an object
  - Renames time field to intervalEndDateTime
- Power quality data schema and openapi specification:
  - Revises token endpoints to oauth/v1/token
  - Revises messageContextID format
  - Updates description and detail fields
  - Updates messageDateTime schema and examples
  - Removes pattern from header schema properties
  - Renames resourceId to businessFunctionResourceId in the header schema
  - Renames time property to intervalEndDateTime
  - Removes schemaVersion parameter. Schema versioning is pre-determined
  - Changes reads from an array to an object
- Adds FAQs from the MSUG meeting

V0.05

- Renames this technical specification from Industry Data Exchange – Technical Specification – June 2026 to Industry Data Exchange – Basic Power Quality Data – June 2026.

- Updates message TTL (Time to Live) expiry period to 10 calendar days.
- Updates Participant Impact.
- Adds FAQs.
- **Power quality data openapi specification**:
  - Updates transactionID pattern attribute.
  - Adds messageDateTime to expanded properties in BPQD response.
  - Removes traceability-id from body or responses.
  - Adds x-traceability in the response header to retrieve BPQD messages.
  - Adds x-signature in the response header when retrieving BPQD messages.
  - Adds x-schema-version property to the PQD schema.
  - Updates query parameters.
  - Adds error code examples.

V0.04

- Revises PQD API validation.
- Revises PQD API 400 series response codes.
- Adds cursor-based pagination information.
- **Power quality data openapi specification**:
  - Updates security scope name.
  - Updates ResourceID descriptor to be 8 characters.
  - Revises listMetaData schema.
  - Revises HTTP response codes.

V0.03

- Renames technical specification to Industry Data Exchange – Technical Specification – June 2026
- Adds note about bunding BPQD readings when submitting BPQD
- Adds FAQs
- Adds PQD API rate limit
- Power Quality Data OpenAPI Specification:
  - Submit Basic Power Quality Data: Updates 201 response
  - List Basic Power Quality Data metadata: Updates 200 response
  - List Basic Power Quality Data metadata: Changes fromDateTime and toDateTime query parameters to optional

v0.02

- Adds link to PQD OpenAPI specification
- Minor updates to Power Quality Data Schema
- Update HTTP response codes