Guide to Demand Side Participation CSV Files

3 March 2021

Providing DSP information in csv files
Version 1.02

Important notice

PURPOSE

The Australian Energy Market Operator (AEMO) has prepared this document to provide information about the Demand Side Participation Information Portal (DSPIP) CSV templates, as at the date of publication.

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VERSION HISTORY

Version	Changes
1.01	Published for the Demand Side Participation information project.
1.02	Updated to include Bulk Upload CSV templates

FURTHER INFORMATION

Please visit AEMO's website www.aemo.com.au or contact AEMO Information and Support Hub: phone 1300 AEMO 00 (1300 236 600) and follow the prompts, or email: supporthub@aemo.com.au.

FEEDBACK

Your feedback is important and helps us improve our services and products. To suggest improvements, please contact AEMO's Information and Support Hub.

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Abbreviations and symbols

Abbreviation	Abbreviation explanation
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
DSP	Demand Side Participation
MW	Megawatt
NEM	National Electricity Market
NER	National Electricity Rules; also often called the Rules
NMI	[electricity] National Metering Identifier

Special terms

Term	Definition
Connection	The load or generation at the point at which a Customer connects to a network
Market time	Australian Eastern Standard Time
Participant ID	Registered participant identifier
Program	A scheme operated either by a Registered Participant or a third party, where a group of Customers are incentivised or required to offer DSP in response to criteria defined by the scheme operator
Rules	National Electricity Rules

1. Introduction

1.1   Purpose

This document provides guidelines on how to complete Demand Side Participation (DSP) information in comma-separated values (CSV) template files for uploading to the AEMO DSP Portal.

1.2   Audience

This document is relevant to all registered participants who must provide DSP information under Clause 3.7D(b) in the National Electricity Rules (NER).

1.3   How to use this guide

The references listed throughout this document are primary resources and take precedence over this document.

Text in this format indicates a reference to a document on AEMO's website.

This document is written in plain language for easy reading. Where there is a discrepancy between the NER and information or a term in this document, the NER take precedence.

Glossary Terms are capitalised and have the meanings listed against them.

Italicised terms are defined in the NER. Any rules terms not in this format still have the same meaning.

For an explanation of abbreviations or special terms, see the Glossary.

1.4   What's in this guide

Chapter 2 describes the guide's purpose, the audience, and a description of the three types of CSV template files used for submitting Demand Side Participation (DSP) information.

Chapter 3 defines the formatting rules for CSV files.

Chapter 4 describes the three types of CSV files to provide DSP information, the requirements, and references to the CSV fields defined in the Demand Side Participation Information Guidelines.

Chapter 5 provides a list of related information and documents mentioned throughout this guide, and guidance for requesting assistance from AEMO.

2. Overview

2.1   What the DSP CSV templates are for

AEMO provides a series of standard comma-separated (CSV) template files for participants to bulk upload DSP information through the DSP Portal.

2.2   Who can use the DSP CSV templates

All registered participants are required to provide DSP information as described in NER Clause 3.7D and the Demand Side Participation Information Guidelines. Any of these participants may opt to use these CSV templates to submit their DSP information.

2.3   How to use the DSP CSV template files

AEMO has produced two sets of CSV templates:

- One for uploading a single DSP program.

- Another for bulk uploading multiple programs.

2.3.1   CSV Files for single program upload

There are three CSV files for download, either in the relevant section in the DSPI Portal which are detailed in the Guide to Demand Side Participation Information Portal or on the DSP homepage on AEMO's website:

- NEMDSP_NMI.CSV: A list of NMIs associated with a program or connection.

- NEMDSP_PROGRAM_LEVEL_DETAIL.CSV: Program level details associated with a program or connection.

- NEMDSP_HISTORICAL.CSV: The event data associated with a program or connection. Some programs or connections are not required to provide this file. For more details, see the Demand Side Participation Information Guidelines, Appendix A.

The files may be suffixed with _EXAMPLE if the file contains example rows or _EMPTY if it's an empty template.

The NEMDSP_NMI.CSV file can be used to upload lists of NMIs relating to Section 1 of the Guidelines. The NEMDSP_PROGRAM_LEVEL_DETAILS.CSV and NEMDSP_HISTORICAL.CSV files only relate to Section 2 of the Guidelines.

2.3.2   CSV Files for bulk upload of multiple DSP programs

There are three CSV files for download, either in the relevant section in the DSPI Portal which are detailed in the Guide to Demand Side Participation Information Portal or on the DSP homepage on AEMO's website:

- NEMDSP_BULK_NMI.CSV: A list of NMIs associated with a program or connection.

- NEMDSP_BULK_PROGRAM_LEVEL_DETAIL.CSV: Program level details associated with a program or connection.

- NEMDSP_BULK_HISTORICAL.CSV: The event data associated with a program or connection.

The files may be suffixed with _EXAMPLE if the file contains example rows or _EMPTY if it's an empty template.

2.3.3   Filename conventions

The file name is constructed of the following elements separated by underscore "_" signs:

1. The NEM file identifier. For Demand Side Participation, it is "NEMDSP".

2. The CSV template file type: "NMI", "PROGRAM_LEVEL_DETAIL", or "HISTORICAL".

3. The participant ID of the participant submitting the file.

4. A category, code, or connection name defined by the participant of up to 15 characters.

5. Date and time stamp in the format YYYYMMDDHHmmSS when the file has been generated, 24-hour format, and local time of the originator.

6. The file extension of "CSV", case-sensitive, all uppercase, separated from the file name with a period "."

3. CSV format

A CSV file contains the values as a series of ASCII text lines in a table. It is organised so that each column value is separated by a comma from the next column's value and each row starts a new line.

3.1   Character set

The character set to be used within a CSV file is ASCII 7-bit. Unicode characters are not permitted.

3.2   Data types

The maximum character length and specification for data types is shown in Table 1.

Table 1   Data types

Data type	Maximum character length	Specification
String	300	No quotation marks in strings.
Boolean	5	TRUE or FALSE
Numeric	15	Maximum three decimal places Do not include comma separator for thousands. Do not include units.
Date	10	YYYY/MM/DD
Date and time	20	YYYY/MM/DD HH24:mm:SS
Options	300	For multiple options, separate using semicolons as explained in Values separator.
NMI	10	Ten alphanumeric digits only. Do not include data-stream suffix or check digit.

3.2.1   Literal quotes

A CSV element that incorporates commas must be enclosed by double-quotes. For example:

"123,This is a sample field,456"

3.2.2   Line breaks

Carriage Return (CR, ASCII decimal code 13) and Line Feed (LF, ASCII decimal code 10) are not permitted within fields.

Empty lines (lines containing just CR and LF) are not permitted.

3.2.3   Values separator

No trailing commas are allowed at the end of each line; that is, the number of value separators in any one row will always be: *number_of_values – 1*.

When multiple selections are selected for a field, they must be separated by semicolons. For example:

LOAD_REDUCTION;EMBEDDED_GENERATION;ENERGY_STORAGE

Where a CSV element is not used, the field can be left blank.

3.2.4   Numeric values

Positive and negative values

Positive numbers in a CSV file shall be unsigned. Negative numbers must be prefixed with a negative sign '-'.

Leading and trailing zeroes

No leading zeroes are to be used unless a specific data format requires this. Trailing zeroes are allowed.

3.2.5   Tab characters

Tab characters cannot be used in the CSV files.

3.2.6   Special characters

The use of CDATA (non-parsed character data), characters "<", ">", "&" and hexadecimal characters is not allowed.

3.2.7   Leading and trailing spaces

In the case of numeric values, the use of a leading, embedded or trailing space is not supported. Spaces should not be used for numeric values.

For fields containing text, only embedded spaces are permitted. Leading and trailing space-characters after comma field separators must not be included. Therefore "John Citizen" can be added in the CSV as ---,John Citizen,--- or ---,"John Citizen",---.

Values must have a leading or trailing spaces as a valid part of the data must be delimited with double-quote characters. This indicates that the leading and trailing spaces are a component part of the data. For example:

---," John Citizen ",---

4. CSV file types and requirements

4.1 NEMDSP_NMI.CSV file

NMI information is populated in NEMDSP_NMI.CSV files using a separate file for each of the following data categories:

- Market-exposed connections.
- Connections on fixed time-of-use tariffs.
- Connections on dynamic event tariffs.
- Directly controlled connections (fixed schedule).
- Directly controlled connections (dynamic operation).
- Not elsewhere classified.

Other data categories including Future Programs, Future changes to existing programs, and Alert lists are completed using the DSP Portal web interface.

Table 2   NEMDSP_NMI.CSV file parameters

Column name	Mandatory field?	DSP Information Guidelines category	Comments
NMI	Yes	NMI	
PARTICIPANT_REFERENCE	No	N/A	This is an optional field to link CSV files for Participant's purposes.

An example NEMDSP_NMI.CSV with NMIs associated with a hot water load control program for the Network Controlled Load data category is shown in Table 3.

Table 3   Example NEMDSP_NMI.CSV file

NMI	PARTICIPANT_REFERENCE
1234567890	HWLC_ZONE_A
2345678901	HWLC_ZONE_A
3456789012	HWLC_ZONE_A

4.2 NEMDSP_PROGRAM_LEVEL_DETAIL.CSV file

Table 4 provides a listing and description of the fields in the NEMDSP PROGRAM_LEVEL_DETAIL.CSV file. For fields that do not require entering an option, refer to Table 1 for formatting conventions.

Table 4   NEMDSP_PROGRAM_LEVEL_DETAIL.CSV file parameters

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
PARTICIPANT_REFERENCE	No	String data type		N/A		This is an optional field used by the participants to link-up various CSV files.
NAME	Yes	String data type		Name / Address / Program name		Means of identifying the load location. Note, only one means of identification is required (name, address, or Program).

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
METER_CONFIGURATION	No	NET_LOAD DIRECT_METERING OTHER	Net load Direct metering Other	Meter configuration		Do the supplied NMI(s) directly measure response (e.g. on an embedded generating unit), or are they measuring net load (response is behind the meter)?
METER_CONFIGURATION_OTHER_SPECIFY	No	String data type		Meter configuration		Specify details when "OTHER" is entered in METER_CONFIGURATION.
INCREASE_DECREASE_IN_DEMAND	Yes	INCREASE DECREASE	Increase Decrease	Will the program be a curtailment (decrease) in demand or increase (load-on) in demand?		Applies to all categories except market exposed customers and programs with customers on fixed Time-Of-Use tariffs
MAX_POTENTIAL_RESPONSE	No	Numeric data type, Positive values only		The maximum expected response that the DSP program can possible deliver		Maximum MW of potential response.
FIRM_RESPONSE	Yes	Numeric data type, Positive values only		The guaranteed response (or most likely) the DSP program can deliver, or in case of a qualifying contract under RRO, the contracted response		Applies to all categories except market exposed customers and programs with customers on fixed Time-Of-Use tariffs
DSP_TYPE_OTHER_SPECIFY	No	LOAD_REDUCTION EMBEDDED_GENERATION ENERGY_STORAGE OTHER	Load reduction Embedded generation Energy storage Other	DSP type		
DSP_TYPE_LOAD_TYPE	No	RESIDENTIAL COMMERCIAL INDUSTRIAL OTHER	Residential Commercial Industrial Other	DSP type	Load Type	Applies when DSP type equals Load Reduction.
DSP_TYPE_LOAD_TYPE_OTHER_SPECIFY	No	String data type		DSP type	Load Type	Specify details when "OTHER" is entered in DSP_TYPE_LOAD_TYPE.
DSP_TYPE_LOAD_TYPE_ANZSIC	No	Single capital letter	A. Agriculture, Forestry and Fishing B. Mining C. Manufacturing D. Electricity, Gas and Water Supply E. Construction F. Wholesale Trade G. Retail Trade H. Accommodation, Cafes and Restaurants I. Transport and Storage J. Communication Services K. Finance and Insurance L. Property and Business Services M. Government Administration and Defence N. Education O. Health and Community Services P. Cultural and Recreational Services Q. Personal and Other Services	DSP type	Load Type	Applies when DSP type equals Industrial or Commercial. See http://www.abs.gov.au/ANZSIC
DSP_TYPE_FUEL_SOURCE_PRIMARY	No	RENEWABLE_BIOMASS_WASTE FOSSIL HYDRO GEOTHERMAL	Renewable/ Biomass / Waste Fossil Hydro Geothermal	DSP type	Fuel Source	Applies when DSP type equals the Embedded Generation.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
		SOLAR	Solar			Please refer to Appendix 8 of the NEM Generator Registration Guide. These values are related to the primary fuel source value.
		WAVE	Wave			
		WIND	Wind			
		TIDAL	Tidal			
		RENEWABLE	Renewable			
		COMBUSTION	Combustion			
DSP_TYPE_FUEL_SOURCE_DESCRIPTOR	No	BAGASSE	Bagasse	DSP type	Fuel Source	Applies when DSP type equals the Embedded Generation.
		BIODIESEL	Biodiesel			
		BIOFUEL_OTHER	Biofuel - other			Refer to Appendix 8 of the NEM Generator Registration Guide. These values are related to the fuel source descriptor value.
		BIOGAS_OTHER	Biogas - other (captured for combustion (not methane))			
		BIOGAS_SLUDGE	Biogas - Sludge (captured for combustion (methane only))			
		BIOMASS_RECYCLED_MUNICIPAL_AND_INDUSTRIAL_MATERIALS	Biomass recycled municipal and industrial materials			
		BLACK_COAL	Black coal			
		BLAST_FURNACE_GAS	Blast furnace gas			
		BROWN_COAL	Brown coal			
		BROWN_COAL_BRIQUETTES	Brown coal Briquettes			
		CHARCOAL	Charcoal			
		COAL_SEAM_METHANE	Coal seam methane			
		COAL_TAILINGS	Coal tailings			
		COKE_OVEN_COKE	Coke oven coke			
		COKE_OVEN_GAS	Coke oven gas			
		CRUDE_OIL_AND_CONDENSATES	Crude oil and condensates			
		DIESEL	Diesel			
		DRY_WOOD	Dry wood			
		ETHANE	Ethane			
		ETHANOL	Ethanol			
		FUEL_OIL	Fuel Oil			
		GASEOUS_FOSSIL_FUELS_OTHER	Gaseous fossil fuels - other			
		GASOLINE_AVGAS	Gasoline (aviation fuel used for stationary energy) avgas			
		GASOLINE	Gasoline (non-aviation fuel)			
		GEOLOGICAL_HEAT	Geological heat			
		GREEN_AND_AIR_DRIED_WOOD	Green and air dried wood			
		HEATING_OIL	Heating oil			
		KEROSENE_AVTUR	Kerosene (aviation fuel used for stationary energy) - avtur			
		KEROSENE	Kerosene (non-aviation fuel)			
		LANDFILL_METHANE_LANDFILL_GAS	Landfill methane / Landfill gas			
		LIQUEFIED_AROMATIC_HYDROCARBONS	Liquefied aromatic hydrocarbons			
		LIQUEFIED_PETROLEUM_GAS	Liquefied petroleum gas			
		NAPTHA	Naptha			
		NATURAL_GAS_COMPRESSED	Natural gas – compressed			
		NATURAL_GAS_LIQUEFIED	Natural gas – liquefied			

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
		NATURAL_GAS_UNPROCESSED	Natural gas – unprocessed			
		NATURAL_GAS_PIPELINE	Natural gas (pipeline)			
		NATURAL_GAS_DIESEL	Natural gas / diesel			
		NATURAL_GAS_FUEL_OIL	Natural gas / fuel oil			
		NATURAL_GAS_LIQUIDS_OTHER	Natural gas liquids – other			
		PETROLEUM_BASED_GREASES	Petroleum based greases			
		PETROLEUM_BASED_OILS_AND_LUBRICANTS	Petroleum based oils and lubricants			
		PETROLEUM_BASED_PRODUCTS_OTHER	Petroleum based products – other			
		PETROLEUM_COKE	Petroleum coke			
		RECYCLED_FOSSIL_FUEL_DERIVED_INDUSTRIAL_AND_MUNICIPAL_MATERIALS	Recycled fossil fuel derived industrial and municipal materials			
		REFINERY_COKE	Refinery coke			
		REFINERY_GAS_AND_LIQUIDS	Refinery gas and liquids			
		SOLAR	Solar			
		SOLID_FOSSIL_FUELS_OTHER	Solid fossil fuels – other			
		SOLVENTS_IF_MINERAL_TURPENTINE_OR_WHITE_SPIRITS	Solvents if mineral turpentine or white spirits			
		SULPHITES_LYES	Sulphites lyes			
		TAR	Tar			
		TOWN_GAS	Town gas			
		WASTE_COAL_MINE_GAS	Waste coal mine gas			
		WATER	Water			
		WIND	Wind			
PRICE_EXPOSURE	No	WHOLESALE	Wholesale	Price exposure		
		TARIFF	Tariff			
		NONE	None			
		OTHER	Other (specify)			
PRICE_EXPOSURE_OTHER_SPECIFY	No	String data type		Price exposure		Specify details when "OTHER" is entered in PRICE_EXPOSURE.
PRICE_EXPOSURE_TRIGGER_PRICE	No	Numeric data type		Price exposure	Trigger price	Applies when PRICE_EXPOSURE field value is WHOLESALE. Spot price that contract exposes a Customer to higher prices (if applicable).
PRICE_EXPOSURE_TRIGGER_PRICE_DETAILS	No	String data type		Price exposure	Trigger price	
PRICE_EXPOSURE_TARIFF_TYPE	No	TIME_OF_USE	Time-of-use	Price exposure	Tariff type	Applies when price exposure is TARIFF.
		CRITICAL_PEAK_DAY	Critical Peak Day			
		OTHER	Other (specify)			
PRICE_EXPOSURE_TARIFF_TYPE_OTHER_SPECIFY	No	String data type		Price exposure	Tariff type	Specify details when "OTHER" is entered in PRICE_EXPOSURE_TARIFF_TYPE
RESPONSE_CONTROL	No	NETWORK	Network	Response control		Who controls the response?

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
		RETAILER AGGREGATOR CUSTOMER_DIRECT CUSTOMER_AUTOMATIC OTHER	Retailer Aggregator Customer Direct Customer Automatic Other			
RESPONSE_CONTROL_OTHER_SPECIFY	No	String data type		Response control		Specify details when "OTHER" is entered in RESPONSE_CONTROL.
RESPONSE_CONTROL_CONTROLLER	No	String data type		Response control	Controller	Name of the party who controls response.
RESPONSE_CONTROL_TRIGGER	No	NETWORK_LOADING_CONDITIONS SPOT_PRICE CUSTOMER_COST_MINIMISATION THIRD_PARTY_PRICE_TRIGGER PROVISION_OF_ANCILLARY_SERVICES TEMPERATURE_TRIGGER OTHER	Network loading conditions Spot price Customer cost minimisation Third party price trigger (not related to price Customer is exposed to e.g. participant contract position) Provision of ancillary services Temperature trigger Other	Response control	Trigger condition / algorithm	What causes a response?
RESPONSE_CONTROL_TRIGGER_DETAILS	No	String data type		Response control	Trigger condition / algorithm	Specify details for any selected RESPONSE_CONTROL_TRIGGER. Specific data is required here e.g. exactly what network. Constraints or limits would cause a response, and any known limitations to the response (such as time of day).
RESPONSE_CONTROL_BAU	No	ADHOC_ACTIVITY NO_OPERATION MINIMISE_CUSTOMER_ENERGY_EXPENSE MINIMISE_PARTICIPANT_ENERGY_EXPENSE OTHER	Ad-hoc activity No operation Minimise customer energy expense Minimise participant energy expense Other	Response control	BAU control algorithm	What the load or generator does outside of events.
RESPONSE_CONTROL_BAU_DETAILS	No	String data type		Response control	BAU control algorithm	Specify details for any selected RESPONSE_CONTROL_BAU.
RESPONSE_CONTROL_OPT_OUT	No	Boolean data type		Response control	Opt out ability	Whether the Customer can opt out of a DSP response, and if so the limitations on the number of times this can happen. If the Customer is the only party who can control the DSP response, select TRUE.
RESPONSE_CONTROL_OPT_OUT_DETAILS	No	String data type		Response control	Opt out ability	Specify any limitations.
RESPONSE_CONTROL_AUDIT	No	Boolean data type		Response control	Auditability	Can the response be audited (is two-way communications or meter feedback available).
RESPONSE_CONTROL_AUDIT_DETAILS	No	String data type		Response control	Auditability	Specify the mechanism.
STORAGE	No	NONE BATTERY OTHER	None Battery Other	Storage		Type of energy storage system installed at the connection.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
STORAGE_OTHER_SPECIFY	No	String data type		Storage		Specify details when "OTHER" is entered in STORAGE.
STORAGE_CAPACITY	No	Numeric data type		Storage	Storage capacity	MWh of available storage.
STORAGE_PURPOSE	No	String data type		Storage	Purpose	Why the storage was installed, e.g. backup supply, peak shaving, avoided augmentation, and performance indication metrics?
STORAGE_INSTALLATION_DATE	No	Date data type		Storage	Installation date	Date when the equipment was commissioned. Not applicable for aggregated storage (where the storage devices are distributed across multiple locations on a network, with separate metering points for each device).
STORAGE_EXPORT	No	Boolean data type		Storage	Export permitted	Is the storage allowed to net export to the grid?
STORAGE_INVERTER	No	String data type		Storage	Inverter	Make and model. Not applicable for aggregated storage (where the storage devices are distributed across multiple locations on a network, with separate metering points for each device).
MONITORING	No	SCADA MARKET_INTERVAL_METER NONMARKET_INTERVAL_METER OPENADR INTERNET MANUAL_OPERATION OTHER	SCADA Market interval meter Non-market interval meter OpenADR Internet Manual (on-site) operation Other	Monitoring and activation		Multi-select. Means of supervisory monitoring and/or control of response.
MONITORING_OTHER_SPECIFY	No	String data type		Monitoring and activation		Specify details when "OTHER" is entered in MONITORING.
SEASONALITY	No	String data type		Seasonality		Any expected variation with season.
TEMPERATURE_RESTRICTIONS	No	String data type		Temperature restrictions		Any limitation on capacity or duty cycle under high temperature conditions. Impact of DSP most critical during times of high network stress, which often coincides with high temperatures.
EXPIRY_DATE	No	Date data type		Expiry date		Date contract or Program ends (if applicable).

Table 5   Example excerpt from a NEMDSP_PROGRAM_LEVEL_DETAIL.CSV file

PARTICIPANT_REFERENCE	NAME	METER_CONFIGURATION	METER_CONFIGURATION_OTHER_SPECIFY	POTENTIAL_RESPONSE	DSP_TYPE
HWLC_ZONE_A	HOT WATER CONTROL LOAD	NET_LOAD		88	LOAD_REDUCTION

4.3   NEMDSP_HISTORICAL.CSV file

The columns in the NEMDSP_HISTORICAL.CSV file are mapped to the Historical Timing and Magnitude of Response data category. Each row entry represents a single observation.

Table 6   NEMDSP_HISTORICAL.CSV

Column name	Mandatory field?	Allowed Values	Comments
TIMESTAMP_AEST	Yes	Date and time data type	Times must be provided in Australian Eastern Standard Time (AEST) in the format YYYY/MM/DD HH24:mm:SS. Interval timestamps must indicate the end of the period in question.
EVENT_STATUS	Yes	ACTIVE INACTIVE	
MW_REQUESTED	No	Numeric data type	
MW_OBSERVED	No	Numeric data type	
PARTICIPANT_REFERENCE	No	String data type	This is an optional field provided for participants to link CSV files.

Table 7   Example NEMDSP_HISTORICAL.CSV file

TIMESTAMP_AEST	EVENT_STATUS	MW_REQUESTED	MW_OBSERVED	PARTICIPANT_REFERENCE
2016-01-22 15:35:00	ACTIVE	40	38.7	HWLC_ZONE_A
2016-01-22 16:00:00	INACTIVE	0	0	HWLC_ZONE_A
2016-01-25 15:03:30	ACTIVE	35	36.2	HWLC_ZONE_A
2016-01-22 18:12:40	INACTIVE	0	0	HWLC_ZONE_A

4.4   NEMDSP_BULK_NMI.CSV

NMI information populated in NEMDSP_BULK_NMI.CSV files can contain multiple rows / sets of NMI's for each of the following data categories:

- Market-exposed connections.
- Connections on fixed time-of-use tariffs.

- Connections on dynamic event tariffs.
- Directly controlled connections (fixed schedule).
- Directly controlled connections (dynamic operation).
- Not elsewhere classified.

Other data categories including Future Programs, Future changes to existing programs, and Alert lists are completed using the DSP Portal web interface.

Table 8   NEMDSP_BULK_NMI.CSV file parameters

Column name	Mandatory field?	DSP Information Guidelines category	Comments
PARTICIPANT_REFERENCE	No	N/A	This is an optional field to link CSV files for Participant's purposes. Can be the name of the DSP program or another reference.
NMI	Yes	NMI	Must be a valid 10-digit NMI (excludes checksum)
NAME	Yes	N/A	Name of the DSP Program the NMI belongs to. Must match a valid DSP Program.

An example NEMDSP_BULK_NMI.CSV with NMIs associated with three DSP programs.

Table 9   Example NEMDSP_BULK_NMI.CSV file

PARTICIPANT_REFERENCE	NMI	NAME
HWLC_ZONE_A	1013119601	DSP Program 1
HWLC_ZONE_A	1962474001	DSP Program 1
HWLC_ZONE_A	1641416401	DSP Program 1
HWLC_ZONE_B	1553228401	DSP Program 2
HWLC_ZONE_B	1770648801	DSP Program 2
STOR_1	1578986601	DSP Program 3

4.5   NEMDSP_BULK_PROGRAM_LEVEL_DETAIL

Program Level Details populated in NEMDSP_BULK_ PROGRAM_LEVEL_DETAIL.CSV files can contain multiple rows for each DSP Program to be created.

Table 10   NEMDSP_BULK_PROGRAM_LEVEL_DETAIL.CSV file parameters

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
DSP_CATEGORY	Yes	MARKET EXPOSED CONNECTIONS CONNECTIONS ON FIXED TIME-OF-USE TARIFFS CONNECTIONS ON DYNAMIC EVENT TARIFFS DIRECTLY CONTROLLED CONNECTIONS (FIXED SCHEDULE) DIRECTLY CONTROLLED CONNECTIONS (DYNAMIC OPERATION) NOT ELSEWHERE CLASSIFIED				
REGION	Yes	VIC NSW QLD SA TAS				NEM region
WDR_OR_RRO	Yes	WDR RRO N/A				Will the DSP Program operate as Wholesale Demand Response (WDR), be a Qualifying Contract under the Retail Reliability Obligation (RRO), or neither.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
PARTICIPANT_REFERENCE	No	String data type		N/A		This is an optional field used by the participants to link-up various CSV files.
NAME	Yes	String data type		Name / Address / Program name		Means of identifying the load location. Note, only one means of identification is required (name, address, or Program).
METER_CONFIGURATION		NET_LOAD DIRECT_METERING OTHER	Net load Direct metering Other	Meter configuration		Do the supplied NMI(s) directly measure response (e.g. on an embedded generating unit), or are they measuring net load (response is behind the meter)?
METER_CONFIGURATION_OTHER_SPECIFY	No	String data type		Meter configuration		Specify details when "OTHER" is entered in METER_CONFIGURATION.
INCREASE_DECREASE_IN_DEMAND	Yes	INCREASE DECREASE		Will the program be a curtailment (decrease) in demand or increase (load-on) in demand?		Applies to all categories except market exposed customers and programs with customers on fixed Time-Of-Use tariffs
MAX_POTENTIAL_RESPONSE	No	Numeric, positive		The maximum expected response that the DSP program can		Maximum MW of potential response.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
				possible deliver		
FIRM_RESPONSE	Yes	Numeric, positive		The guaranteed response (or most likely) the DSP program can deliver, or in case of a qualifying contract under RRO, the contracted response		Applies to all categories except market exposed customers and programs with customers on fixed Time-Of-Use tariffs
DSP_TYPE_OTHER_SPECIFY	No	LOAD_REDUCTION EMBEDDED_GENERATION ENERGY_STORAGE OTHER	Load reduction Embedded generation Energy storage Other	DSP type		
DSP_TYPE_LOAD_TYPE	No	RESIDENTIAL COMMERCIAL INDUSTRIAL OTHER	Residential Commercial Industrial Other	DSP type	Load Type	Applies when DSP type equals Load Reduction.
DSP_TYPE_LOAD_TYPE_OTHER_SPECIFY	No	String data type		DSP type	Load Type	Specify details when "OTHER" is entered in DSP_TYPE_LOAD_TYPE.
DSP_TYPE_LOAD_TYPE_ANZSIC	No	Single capital letter	A. Agriculture, Forestry and Fishing B. Mining C. Manufacturing	DSP type	Load Type	Applies when DSP type equals Industrial or Commercial. See

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
			D. Electricity, Gas and Water Supply E. Construction F. Wholesale Trade G. Retail Trade H. Accommodation, Cafes and Restaurants I. Transport and Storage J. Communication Services K. Finance and Insurance L. Property and Business Services M. Government Administration and Defence N. Education O. Health and Community Services P. Cultural and Recreational Services Q. Personal and Other Services			http://www.abs.gov.au/ANZSIC
DSP_TYPE_FUEL_SOURCE_PRIMARY	No	RENEWABLE_BIOMASS_WASTE FOSSIL HYDRO GEOTHERMAL SOLAR WAVE WIND TIDAL RENEWABLE COMBUSTION	Renewable/ Biomass / Waste Fossil Hydro Geothermal Solar Wave Wind Tidal Renewable Combustion	DSP type	Fuel Source	Applies when DSP type equals the Embedded Generation. Please refer to Appendix 8 of the NEM Generator Registration Guide. These values are related to the primary fuel source value.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
DSP_TYPE_FUEL_SOURCE_DESCRIPTOR	No	BAGASSE	Bagasse	DSP type	Fuel Source	Applies when DSP type equals the Embedded Generation.
		BIODIESEL	Biodiesel			
		BIOFUEL_OTHER	Biofuel - other			
		BIOGAS_OTHER	Biogas - other (captured for combustion (not methane))			Refer to Appendix 8 of the NEM Generator Registration Guide. These values are related to the fuel source descriptor value.
		BIOGAS_SLUDGE	Biogas - Sludge (captured for combustion (methane only))			
		BIOMASS_RECYCLED_MUNICIPAL_ AND_INDUSTRIAL_MATERIALS	Biomass recycled municipal and industrial materials			
		BLACK_COAL	Black coal			
		BLAST_FURNACE_GAS	Blast furnace gas			
		BROWN_COAL	Brown coal			
		BROWN_COAL_BRIQUETTES	Brown coal Briquettes			
		CHARCOAL	Charcoal			
		COAL_SEAM_METHANE	Coal seam methane			
		COAL_TAILINGS	Coal tailings			
		COKE_OVEN_COKE	Coke oven coke			
		COKE_OVEN_GAS	Coke oven gas			
		CRUDE_OIL_AND_CONDENSATES	Crude oil and condensates			
		DIESEL	Diesel			
		DRY_WOOD	Dry wood			
		ETHANE	Ethane			
		ETHANOL	Ethanol			
		FUEL_OIL	Fuel Oil			
		GASEOUS_FOSSIL_FUELS_OTHER	Gaseous fossil fuels - other			
		GASOLINE_AVGAS				
		GASOLINE				
		GEOLOGICAL_HEAT				

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
		GREEN_AND_AIR_DRIED_WOOD	Gasoline (aviation fuel used for stationary energy) avgas			
		HEATING_OIL	Gasoline (non-aviation fuel)			
		KEROSENE_AVTUR	Geological heat			
		KEROSENE	Green and air dried wood			
		LANDFILL_METHANE_LANDFILL_GAS	Heating oil			
		LIQUEFIED_AROMATIC_HYDROCARBONS	Kerosene (aviation fuel used for stationary energy) -avtur			
		LIQUEFIED_PETROLEUM_GAS	Kerosene (non-aviation fuel)			
		NAPTHA	Landfill methane / Landfill gas			
		NATURAL_GAS_COMPRESSED	Liquefied aromatic hydrocarbons			
		NATURAL_GAS_LIQUEFIED	Liquefied petroleum gas			
		NATURAL_GAS_UNPROCESSED	Naptha			
		NATURAL_GAS_PIPELINE	Natural gas – compressed			
		NATURAL_GAS_DIESEL	Natural gas – liquefied			
		NATURAL_GAS_FUEL_OIL	Natural gas – unprocessed			
		NATURAL_GAS_LIQUIDS_OTHER	Natural gas (pipeline)			
		PETROLEUM_BASED_GREASES	Natural gas / diesel			
		PETROLEUM_BASED_OILS_AND_LUBRICANTS	Natural gas / fuel oil			
		PETROLEUM_BASED_PRODUCTS_OTHER	Natural gas liquids – other			
		PETROLEUM_COKE	Petroleum based greases			
		RECYCLED_FOSSIL_FUEL_DERIVED_INDUSTRIAL_AND_MUNICIPAL_MATERIALS	Petroleum based oils and lubricants			
		REFINERY_COKE	Petroleum based products – other			
		REFINERY_GAS_AND_LIQUIDS				

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
		SOLAR	Petroleum coke			
		SOLID_FOSSIL_FUELS_OTHER	Recycled fossil fuel derived industrial and municipal materials			
		SOLVENTS_IF_MINERAL_TURPENTINE_OR_WHITE_SPIRITS	Refinery coke			
		SULPHITES_LYES	Refinery gas and liquids			
		TAR	Solar			
		TOWN_GAS	Solid fossil fuels – other			
		WASTE_COAL_MINE_GAS	Solvents if mineral turpentine or white spirits			
		WATER	Sulphites lyes			
		WIND	Tar			
			Town gas			
			Waste coal mine gas			
			Water			
			Wind			
PRICE_EXPOSURE	No	WHOLESALE TARIFF NONE OTHER	Wholesale Tariff None Other (specify)	Price exposure		
PRICE_EXPOSURE_OTHER_SPECIFY	No	String data type		Price exposure		Specify details when "OTHER" is entered in PRICE_EXPOSURE.
PRICE_EXPOSURE_TRIGGER_PRICE	No	Numeric data type		Price exposure	Trigger price	Applies when PRICE_EXPOSURE field value is WHOLESALE.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
						Spot price that contract exposes a Customer to higher prices (if applicable).
PRICE_EXPOSURE_TRIGGER_PRICE_DETAILS	No	String data type		Price exposure	Trigger price	
PRICE_EXPOSURE_TARIFF_TYPE	No	TIME_OF_USE CRITICAL_PEAK_DAY OTHER	Time-of-use Critical Peak Day Other (specify)	Price exposure	Tariff type	Applies when price exposure is TARIFF.
PRICE_EXPOSURE_TARIFF_TYPE_OTHER_SPECIFY	No	String data type		Price exposure	Tariff type	Specify details when "OTHER" is entered in PRICE_EXPOSURE_TARIFF_TYPE
RESPONSE_CONTROL	No	NETWORK RETAILER AGGREGATOR CUSTOMER_DIRECT CUSTOMER_AUTOMATIC OTHER	Network Retailer Aggregator Customer Direct Customer Automatic Other	Response control		Who controls the response?
RESPONSE_CONTROL_OTHER_SPECIFY	No	String data type		Response control		Specify details when "OTHER" is entered in RESPONSE_CONTROL.
RESPONSE_CONTROL_CONTROLLER	No	String data type		Response control	Controller	Name of the party who controls response.
RESPONSE_CONTROL_TRIGGER	No	NETWORK_LOADING_CONDITIONS SPOT_PRICE CUSTOMER_COST_MINIMISATION	Network loading conditions Spot price Customer cost minimisation	Response control	Trigger condition / algorithm	What causes a response?

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
		THIRD_PARTY_PRICE_TRIGGER PROVISION_OF_ANCILLARY_SERVICES TEMPERATURE_TRIGGER OTHER	Third party price trigger (not related to price Customer is exposed to e.g. participant contract position) Provision of ancillary services Temperature trigger Other			
RESPONSE_CONTROL_TRIGGER_DETAILS	No	String data type		Response control	Trigger condition / algorithm	Specify details for any selected RESPONSE_CONTROL_TRIGGER. Specific data is required here e.g. exactly what network. Constraints or limits would cause a response, and any known limitations to the response (such as time of day).
RESPONSE_CONTROL_BAU	No	ADHOC_ACTIVITY NO_OPERATION MINIMISE_CUSTOMER_ENERGY_EXPENSE MINIMISE_PARTICIPANT_ENERGY_EXPENSE OTHER	Ad-hoc activity No operation Minimise customer energy expense Minimise participant energy expense Other	Response control	BAU control algorithm	What the load or generator does outside of events.
RESPONSE_CONTROL_BAU_DETAILS	No	String data type		Response control	BAU control algorithm	Specify details for any selected RESPONSE_CONTROL_BAU.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
RESPONSE_CONTROL_OPT_OUT	No	Boolean data type		Response control	Opt out ability	Whether the Customer can opt out of a DSP response, and if so the limitations on the number of times this can happen. If the Customer is the only party who can control the DSP response, select TRUE.
RESPONSE_CONTROL_OPT_OUT_DETAILS	No	String data type		Response control	Opt out ability	Specify any limitations.
RESPONSE_CONTROL_AUDIT	No	Boolean data type		Response control	Auditability	Can the response be audited (is two-way communications or meter feedback available).
RESPONSE_CONTROL_AUDIT_DETAILS	No	String data type		Response control	Auditability	Specify the mechanism.
STORAGE	No	NONE BATTERY OTHER	None Battery Other	Storage		Type of energy storage system installed at the connection.
STORAGE_OTHER_SPECIFY	No	String data type		Storage		Specify details when "OTHER" is entered in STORAGE.
STORAGE_CAPACITY	No	Numeric data type		Storage	Storage capacity	MWh of available storage.
STORAGE_PURPOSE	No	String data type		Storage	Purpose	Why the storage was installed, e.g. backup supply, peak shaving, avoided augmentation, and performance indication metrics?

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
STORAGE_INSTALLATION_DATE	No	Date data type		Storage	Installation date	Date when the equipment was commissioned. Not applicable for aggregated storage (where the storage devices are distributed across multiple locations on a network, with separate metering points for each device).
STORAGE_EXPORT	No	Boolean data type		Storage	Export permitted	Is the storage allowed to net export to the grid?
STORAGE_INVERTER	No	String data type		Storage	Inverter	Make and model. Not applicable for aggregated storage (where the storage devices are distributed across multiple locations on a network, with separate metering points for each device).
MONITORING	No	SCADA MARKET_INTERVAL_METER NONMARKET_INTERVAL_METER OPENADR INTERNET MANUAL_OPERATION OTHER	SCADA Market interval meter Non-market interval meter OpenADR Internet Manual (on-site) operation Other	Monitoring and activation		Multi-select. Means of supervisory monitoring and/or control of response.
MONITORING_OTHER_SPECIFY	No	String data type		Monitoring and activation		Specify details when "OTHER" is entered in MONITORING.

Column name	Mandatory field?	Allowed values	Value description	DSP Information Guidelines category	DSP Information Guidelines subcategory	Comments
SEASONALITY	No	String data type		Seasonality		Any expected variation with season.
TEMPERATURE_RESTRICTIONS	No	String data type		Temperature restrictions		Any limitation on capacity or duty cycle under high temperature conditions. Impact of DSP most critical during times of high network stress, which often coincides with high temperatures.
EXPIRY_DATE	No	Date data type		Expiry date		Date contract or Program ends (if applicable).

4.6   NEMDSP_BULK_HISTORICAL

The columns in the NEMDSP_BULK_HISTORICAL.CSV file are mapped to the Historical Timing and Magnitude of Response data category. Each row entry represents a single observation. Files can contain multiple sets of events for each DSP Program.

Table 11   NEMDSP_BULK_HISTORICAL.CSV

Column name	Mandatory field?	Allowed Values	Comments
TIMESTAMP_AEST	Yes	Date and time data type	Times must be provided in Australian Eastern Standard Time (AEST) in the format YYYY/MM/DD HH24:mm:SS. Interval timestamps must indicate the end of the period in question.
EVENT_STATUS	Yes	ACTIVE INACTIVE	
MW_REQUESTED	No	Numeric data type	
MW_OBSERVED	No	Numeric data type	

Column name	Mandatory field?	Allowed Values	Comments
PARTICIPANT_REFERENCE	No	String data type	This is an optional field provided for participants to link CSV files.
NAME	Yes	String data type	Name of the DSP Program the NMI belongs to. **Must match a valid DSP Program.**

Table 12   Example NEMDSP_HISTORICAL.CSV file

TIMESTAMP_AEST	EVENT_STATUS	MW_REQUESTED	MW_OBSERVED	PARTICIPANT_REFERENCE	NAME
22/01/2016 15:35	ACTIVE	40	38.7	HWLC_ZONE_A	Surrey Hills
22/01/2016 16:00	INACTIVE	0	0	HWLC_ZONE_A	Surrey Hills
25/01/2016 15:03	ACTIVE	35	36.2	HWLC_ZONE_A	Surrey Hills
22/01/2016 18:12	INACTIVE	0	0	HWLC_ZONE_A	Surrey Hills
22/01/2016 15:35	ACTIVE	40	38.7	HWLC_ZONE_B	Melbourne
22/01/2016 16:00	INACTIVE	0	0	HWLC_ZONE_B	Melbourne
25/01/2016 15:03	ACTIVE	35	36.2	HWLC_ZONE_B	Melbourne
22/01/2016 18:12	INACTIVE	0	0	HWLC_ZONE_B	Melbourne
22/01/2016 15:35	ACTIVE	40	38.7	STOR_1	NSW
22/01/2016 16:00	INACTIVE	0	0	STOR_1	NSW
25/01/2016 15:03	ACTIVE	35	36.2	STOR_1	NSW
22/01/2016 18:12	INACTIVE	0	0	STOR_1	NSW

5. Needing help

5.1   Related resources

The following documents are on AEMO's website:

- DSP CSV templates can be downloaded from the DSP homepage[1].
- Demand Side Participation Information Guidelines[2].

For the NER, see the Australian Energy Market Commission's website http://www.aemc.gov.au.

5.2   AEMO's Support Hub

5.2.1   Contacting AEMO's Support Hub

Request assistance through AEMO's Support Hub using one of the following methods:

- Phone: 1300 AEMO 00 (1300 226 600) and follow the prompts. For non-urgent issues, normal coverage is 8:00 AM to 6:00 PM on weekdays, Australian Eastern Standard Time (AEST).
- Email: supporthub@aemo.com.au.

Participants can log requests for assistance at the Participant Portal (http://helpdesk.preprod.nemnet.net.au/nemhelplite/). For access credentials, see the organisation's IT security contact or Participant Administrator.

Please note that AEMO recommends participants call AEMO's Support Hub for all urgent issues, whether or not a call has been logged in the Participant Portal.

5.2.2   Information to provide

Please provide the following information when requesting assistance from AEMO:

- Individual's name.
- Organisation name.
- Participant ID.
- System or application name.
- Environment: production or pre-production.
- Problem description.
- Screenshots.

5.3   Feedback

Your feedback is important and helps us improve our services and products. To suggest improvements, please contact AEMO's Support Hub.

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[1] At https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-guidelines/demand-side-participation-information-guidelines.

[2] At https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/scenarios-inputs-assumptions-methodologies-and-guidelines/forecasting-and-planning-guidelines/demand-side-participation-information-guidelines.