DATA SPECIFICATION

Next Generation Energy Grants

Data Platform

Version: May 2019

SRA Information Technology (Data Coordinator), is the party, appointed by the Minister for Climate Change and Sustainability, responsible for providing data services in line with this specification.

Contents

Background

The ACT Government's Next Generation Energy Storage program (the program) seeks to accelerate the roll-out of up to 36MW of distributed energy storage systems (ESS) in the Territory while accelerating the development of a vibrant export-oriented energy storage industry for Canberra.

The scale and timing of the program also presents an opportunity to capture data that is of global significance. It is intended that the data gathered will be used nationally for research, regulatory planning and industry development purposes, however, without impeding the national energy market objectives, uses of data that contribute to the ACT priorities for local industry development will be given priority.

The ACT Government's priorities for local industry development are set out in the ACT's Renewable Energy Local Investment Framework.

Scope

This specification sets out the requirements for data collection, management and use under the Program. It will inform:

- obligations for data collection and reporting by system Installers;
- the design and implementation of an appropriate platform for data storage (Data Platform);
- obligations for the party undertaking data management (Data Coordinator);
- processes for appropriate access to data by third parties; and
- appropriate privacy and confidentiality controls.

Objectives

The objective of this specification is to achieve the above scope while:

1. maximising the utility of data sets to inform regulatory planning, research and industry development; and
2. minimising data transaction costs for all parties.

Roles

The following roles relate to the management of data under the Program and the administration of the Program more broadly.

- **Environment, Planning and Sustainable Development Directorate (EPSDD)** is the ACT Government agency responsible for administering the program including providing grant payments to Proponents and ensuring effective and efficient management of all program elements. This is achieved principally through contracting with other parties directly involved in aspects of the program.

- **Proponents** are organisations that compete for a Deed of Grant from EPSDD which provides subsidies for battery installations through a competitive process. In their proposals, Proponents set out energy storage systems that may provide for certain data to be collected in various ways.

- **Installers** are Proponents that have been provided with a Deed of Grant, are installing energy storage systems and are subject to certain data collection and reporting requirements.

- **Customers** are the owners or occupiers of premises who receive an energy storage system and will be subject of a data collection and privacy/confidentiality agreements. Generally customers will be required to provide specified information in order to participate in the Program and receive a subsidy on the cost of an energy storage system.

- **Access Canberra** is the ACT's regulatory authority including in relation to utilities technical regulation and electrical safety.

- **The ACT Emergency Services Agency (ESA)** is typically the first responder to a site emergency such as a fire. Part of the data management task will be to provide relevant information to ESA on the location and type of each energy storage system installed under the Program.

- **Evoenergy (DNSP)** is the ACT's Distribution Network Service Provider. It is ring-fenced from ActewAGL Retail who provides electricity and gas retailing in the ACT.

- The **Minister for Climate Change and Sustainability** is responsible for the program and for REIF funding decisions.

- **SRA Information Technology** (**Data Coordinator),** is the party, appointed by the Minister for Climate Change and Sustainability, responsible for providing data services in line with this specification.

- The **Data Advisory Group** is a group of industry experts engaged to inform the development of this specification consistent with its Scope and Objectives.

Data types and purposes

Five main data types are associated with this specification. These are described in detail in the Schedules to this specification.

Data type	Purpose
Customer Data (Schedule A, p.10)	Analysing information about customers participating in the program will be important in relation to: • Understanding future customer behaviour/market dynamics in relation to solar and storage; and • Making sense of performance data performance data resulting from the use of the ESS.
System Information (Schedule B, p.11)	Information about the PV generation system (including size, configuration, brand and model), ESS (including chemistries, capabilities and control modes, and tariff settings), inverter model and other installation-related information and configuration that will be used for a range of purposes including being providing to ESA, in making sense of performance data resulting from the use of the ESS.
Installation Data (Schedule C, p.12)	Information about the timeframes for installation, including regulatory approvals, is intended to inform a 'workflow study' of the ESS installation process leading to regulatory and commercial efficiencies being identified.
Operational Data (Schedule D, p. 13)	Interval data regarding the real world operation of ESS will be critical in understanding the potential and actual performance of ESS at various levels of grid operation (local network support through to wholesale market pool). In addition, ESS event logs will allow the assessment of actual and potential performance in response to network frequency, voltage events or other events.
Weather Data (Schedule E, p.14)	Obtained principally from the Bureau of Meteorology (BOM), weather interval data such as temperature, humidity and solar irradiance will provide context for the analysis of operational data which is expected to be significantly shaped by seasonal and daily weather patterns.

Appointment of the Data Coordinator

The Territory has procured the services of SRA Information Technology to design, build and support the Data Platform to receive data collected under the Program. SRA Information Technology will also be responsible for the ongoing support and maintenance of the Data Platform, and provision of data access and reporting requirements.

Installers will work with the Data Coordinator to transfer data to the data platform at their own expense.

Ownership of material

All primary data, except that obtained by third parties such as BOM, will be owned by the ACT Government and a licence will be granted to the Data Coordinator and third parties, such as Evoenergy, to use it for the prescribed purposes.

The ACT Government will own the Data Platform and will grant the Data Coordinator a royalty-free, limited licence to use the Data Platform (including all supporting intellectual property owned by the ACT Government) for the purposes defined in the Objectives of this document.

Data provided to third parties will be required to be attributed to the program [Date of Publication] unless otherwise agreed. Licensing of data to third parties is to be agreed by EPSDD.

Confidentiality and Privacy

In order to participate in the program, Proponents agree to provide specified data in a specified format. While appreciating the need to retain anonymity where appropriate, it is intended that the information provided can be linked back to each installation and Installer. It is appropriate then that each Installer and installation be given a unique identifier.

Installation Data provided by Proponents will not be disclosed to any party outside the ACT Government. Operational Data provided by Proponents may be shared in a de-identified format with (to remove any information that may identify a customer or Installer) to businesses and researchers, or shared with third parties (such as ESA or Evoenergy), for purposes nominated by EPSDD under confidentiality agreements with EPSDD.

Customers participating in the program will agree to provide information in exchange for the benefit of participation. It is therefore appropriate that customers also be given a unique identifier to link their customer information to other data collected in relation to an installation at their premises. It is proposed that the National Metering Identifier (NMI) will be collected for each installation address; however this would be retained as private information and not disclosed to any party without suitable protections being put in place. Customer names and addresses (or any other information that may identify them) will not be made public under any circumstances.

Data security

The Data Coordinator will be responsible for ensuring the security (physical, system and application security and backup) of data and that Installer and that customer confidentiality and privacy is maintained in accordance with the Installer and customer agreements. This includes protection against unauthorised data scraping and mining by parties over the web that might circumvent intended restrictions on data access imposed through the application interface. Robust business continuity systems will also need to be required.

Proponents will ensure that in order to maintain data privacy, data transmissions from data monitoring devices through to the data storage system (as maintained by the Data Coordinator) will be delivered over a secure communications path and, where appropriate, stored using secure servers maintained by the proponent.

Data standardisation

Data will be standardised in the following ways:

- EPSDD will, where possible, provide Installers and customers with standardised agreements for information sharing under the Program;

- The Data Coordinator will, where possible, provide Installers and the DNSP with templates/protocols to ensure standardised provision of data;

- The Data Coordinator may develop standard protocols for electronic data transmission; and

- EPSDD and the Data Coordinator will agree to standardised reports and data access protocols (e.g. a RESTful API interface) to be provided to different classes of third parties for various uses.

Data Integrity

All parties are responsible for ensuring that, to the best of their knowledge, the data they collect and provide is correct, and that any manifest data errors are corrected.

Data uses

It is expected that, as a minimum data will be used for the following purposes:

User	Purpose and data needs
AEMO	AEMO has an interest in understanding the location of ESS on the network and their interaction with the power system both as a resource (load and frequency and load control etc.) and their potential to undermine power system operation (such is relation to frequency, voltage, harmonics etc.). Information gathered through the program will inform the development of market systems and procedures and potentially, future rule change requests. Of critical interests is the behaviour of ESS inverters under over/under frequency events and in determining predictive algorithms to model the contribution of storage fleets to generation/load balances at a network/market level.
EPSDD	EPSDD may commission reports of the Data Coordinator by other parties to inform regulatory reform and policy development at the local or national level. This will include providing information and analysis to the Australian Energy Market Commission or the COAG Energy Council. EPSDD will promote the Data Platform in accordance with its industry development priorities.
Evoenergy	Evoenergy will use data for: • network investment planning purposes; • developing systems and policies for communication between ESS and its Distribution Management System; • managing the safe and reliable operation of its network; and • assessing opportunities to improve in the efficiency and effectiveness of electrical inspections and other approval processes.
Local Businesses	Local businesses will use the data to: • Develop marketing claims and practices; • Develop, and trial by backtesting, new control systems to optimise performance; and • Collaborate with research organisations in the development of technologies and business solutions.

User	Purpose and data needs
Other researchers	Researchers will use the data to address a range of research questions designed to advance the knowledge in the field, and will publish and present findings both nationally and internationally. Research topics include: • Analysis of battery performance (e.g. efficiency as function of charge state, charge/discharge rate and cycling age) under real operating conditions with solar PV generation and household loads. • Analysis of individual solar PV system performance (e.g. yield, performance ratio as function of time); ideally paired with appropriate solar irradiance measurements at suitable nearby site. • Analysis of detailed household load profiles, including the possible formation of a set of typical household load profiles for future wide-area modelling studies. • Economic analysis of solar PV/battery systems for large range of customer types and load profiles, including assessment of likely cost-benefit under a range of alternative tariff regimes. • Network impact assessment and modelling: assessing the impact, both now and with future high penetration scenarios, of solar PV & battery storage on distribution networks (e.g. voltage management, power flows, network losses, overloads & network augmentation). • Power system modelling: assessment of the impacts of and modelling the potential role of energy storage systems on supply/demand balancing, wholesale market participation, system frequency regulation, ramp rate control. • Investigations of a range of alternative battery storage control algorithms and their subsequent impacts on net load/generation profiles, end-user economics, electrical networks, and the power system. • Assessment of spatially and temporally distributed solar PV generation profiles and development of network-wide solar PV generation forecasts and net load/generation forecasts (only where real-time data is available). • Assessment of customer behaviours and attitudes in response to hosting solar PV/battery systems.

Schedule A: Customer Data Specification

Note: Data collected and described as Private Information will be retained by the ACT Government. Private Information collected under this Schedule will <u>not</u> be shared with parties other than the Data Coordinator.

Data types

Name	Instance	Description
Customer Name	Once	Private information
Customer Address unit number	Once, if applicable	Private information
Customer Address street number	Once	Private information
Customer Address street name	Once	Private information
Customer Address suburb	Once	Private information
Customer Address postcode	Once	Private information
Contact phone	Once	Private information
Contact email	Once	Private information
NMI	Once	Private information
Cost of system ($)	Once	Cost paid by customer
Housing type	Once	BCA Building Class
Construction year	Once	Year of original building construction
Premises type	Once	Residential/Non-residential
# Occupants	Once (if residential)	Typical number of people staying at premises
Primary heating type	Once (if residential)	Gas/electric resistive /reverse cycle/hydronic electric/other
Water heating	Once (if residential)	Gas/electric resistive/electric boosted solar/heat pump/other
Air-conditioning	Once (if residential)	Total kW . Nominate use as heating and/or cooling
Cooktop type	Once (if residential)	Electric/electric induction/gas
Oven type	Once (if residential)	Electric/gas
Swimming pool	Once (if residential)	Y/N
Swimming pool heating	Once (if residential)	NA/gas/electric/solar only/other
Stay at home occupants	Once (if residential)	Number of occupants that are typically home on a weekday

Schedule B: System Information Specification

Data types

Name	Instance	Description
Commissioning date/time	Once	
Configuration type (AC or DC or 3-phase)	Once	*DC Battery Configuration* – The battery and the PV array are both connected to the DC side of a shared/single inverter (refer Schedule F). *AC Battery Configuration* – The battery and the PV array have their own separate inverters (ie. two inverters) which are each then connected at the AC side to the house load and meter (refer Schedule F).
Battery type/model	Once	As per Material Safety Data Sheet
Maximum battery rated output (kW)	Once	Maximum Charge/Discharge Rate
Battery sustained peak output (kW)	Once	The continuous power delivery over a 1 hour period, from 100% state of charge, and at the manufacturers standard temperature for the battery.
Battery total storage capacity (kWh)	Once	Total storage capacity of battery system, excluding depth of discharge considerations.
Battery recommended maximum Depth of Discharge (%)	Once	
Inverter type/model	Once	Network facing inverter. Details to be documented and stored separately
Inverter rated output (kW)	Once	
Solar PV rated output (kW)	Once	
Control system type/model	Once	Details to be documented and stored separately
Solar inverter Sustained peak output (kW)	Once	The maximum rated sustained output of the inverter for a period of not less than one hour as measured at the network connection side of the inverter.
Battery Inverter (kW)	Once	The maximum rated sustained output of the inverter for a period of not less than one hour as measured at the network connection side of the inverter.
Applicable tariff code	Once	Details to be documented and stored separately
Time of use tariff	Once	Y/N
Network support agreement	Once	Y/N
Wholesale market signalling	Once	Y/N
House connection phase	Once	3-phase – House is connected to 3-phase power A, B or C – House is connected to single-phase power on phase A, B or C
System connection phase	Once	3-phase – Inverter is a 3-phase inverter A, B or C – Inverter is a single-phase inverter on phase A, B or C
Feeder ID	Once	Refer to DNSP feeder list

Schedule C: Installation Data Specification

Note: Data collected under this Schedule is collected for the purposes of identifying opportunities to improve the regulatory framework and delivery of energy storage systems.

Data types

Name	Instance
Date of first customer contact	Once
Date of customer order lodged	Once
Date of Energy Storage System delivery	Once
Date of Request for Certificate of Electrical Safety	Once
Date of first Access Canberra Inspection	Once
Date of second Access Canberra Inspection	Once, if applicable
Date of Receipt of Certificate of Electrical Safety	Once
Date of Request for ActewAGL connection agreement	Once
Date of Receipt of ActewAGL connection agreement	Once
Date of connection of the ESS by DNSP (commissioning)	Once

Schedule D: Operational Data Specification

Note #1: Proponents will provide Operational Data at the 'Data Interval' as defined in the Proponent's Deed of Entitlement.

Note #2: In providing a packet of Operational Data, the Proponent will include a time-stamp and the Data Interval in each data packet.

Data types

Name	Instance	Description
Customer gross load (max, min, mean; real and reactive) (kW, kVAr) ($P_{SpecLoad}$, $Q_{SpecLoad}$)	The Data Interval	Gross load, excluding solar and excluding storage charge / discharge. *(Refer to Schedule G for data labels)*

For DC battery configurations (refer Schedule G)

Name	Instance	Description
Battery state of charge (%) (SOC_{Batt})	The Data Interval	
Inverter power output (max, min, mean; real and reactive) (kW, kVAr) (P_{inv}, Q_{inv})	The Data Interval	
Battery real power output (max, min, mean)(kW)(P_{batt}, Q_{batt})	The Data Interval	Export power is positive. Import power is negative.
Meter export power (max, min, mean; real and reactive) (kW, kVAr) (P_{exp}, Q_{exp})	The Data Interval	Export power is positive. Imported power is negative.
Meter voltage (network-side) (max, min, mean, instantaneous) (V)	The Data Interval	
Meter frequency (network-side) (instantaneous) (Hz) (f)	The Data Interval	

For AC battery configurations (refer Schedule G)

Name	Instance	Description
Solar PV inverter power output (max, min, mean; real and reactive) (kW, kVAr) (P_{inv}, Q_{inv})	The Data Interval	
Battery state of charge (%) (SOC_{Batt})	The Data Interval	
Battery inverter power output (max, min, mean; real and reactive) (kW, kVAr) (P_{batt_inv}, Q_{batt_inv})	The Data Interval	
Meter export power (max, min, mean; real and reactive) (kW, kVAr) (P_{exp}, Q_{exp})	The Data Interval	Export power is positive. Imported power is negative.
Meter voltage (network-side) (max, min, mean, instantaneous) (V)	The Data Interval	
Meter frequency (network-side) (instantaneous) (Hz) (f)	The Data Interval	

Schedule E: Weather Data Specification

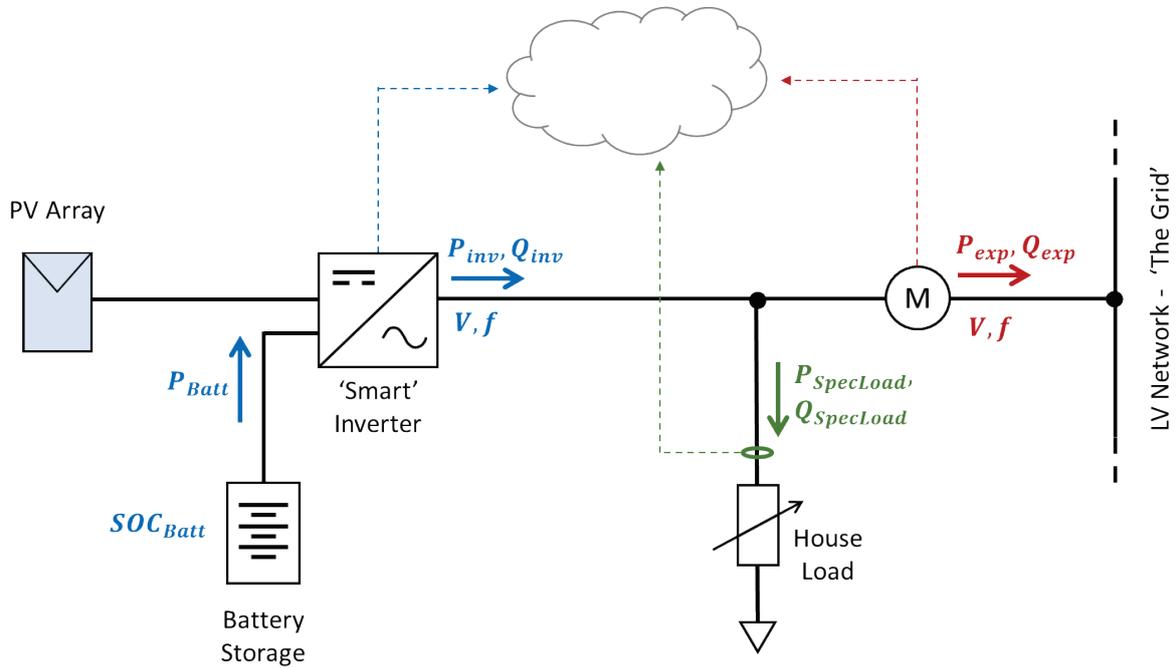*Note: Data obtained under this Schedule will be provided from the Bureau of Meteorology by the Data Coordinator.*

Data types

Name	Instance
Average temperature (^{O}C)	5 minute interval
Average humidity	5 minute interval
Solar irradiance	5 minute interval

Schedule F: Typical DC and AC Battery Configurations

DC Battery Configuration

AC Battery Configuration
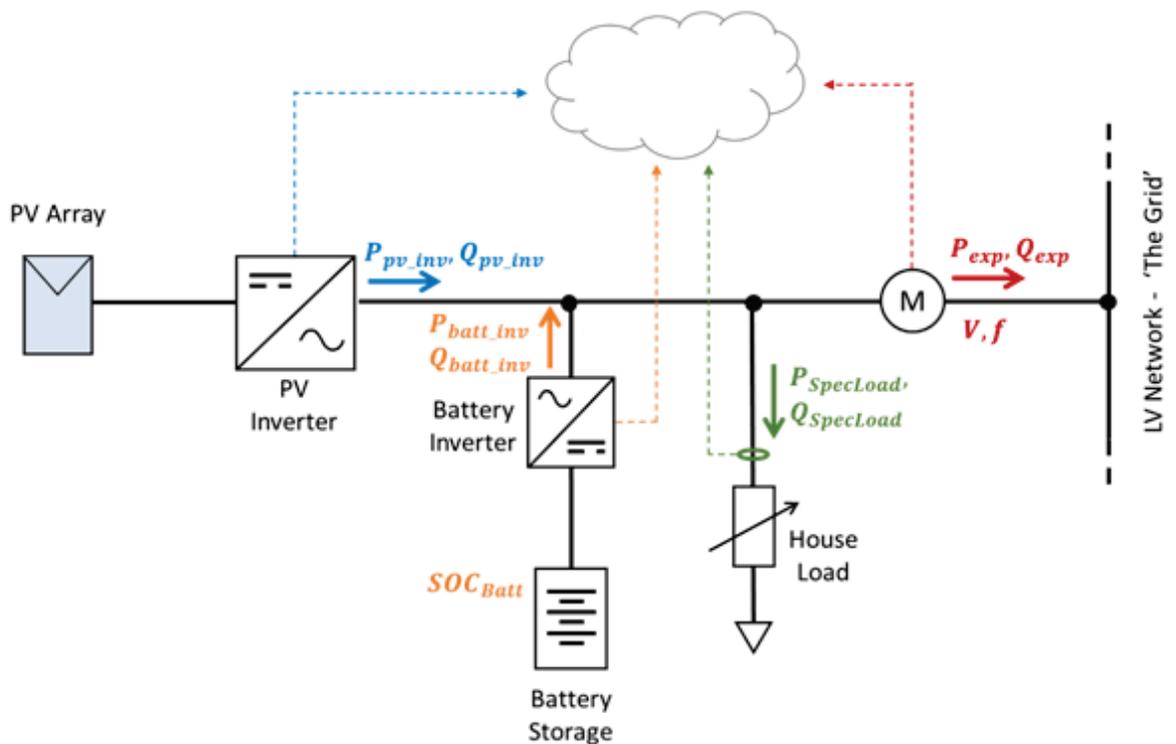
Schedule G: Data packet specification

Until notified otherwise, Proponents will themselves store collected data safely and securely.

When notified, Proponents will provide historically stored data to the Data Coordinator (as nominated by the ACT Government) at their own expense. Historically stored data will be provided to the Data Coordinator in a Comma Separated Variable (.csv) format. It is likely that the subsequent real-time interface will be similar to a RESTful interface delivering JSON (or similar) data packets.

All data is to be UTF-8 encoded.

Data type	.csv file	JSON
Key	CamelCase and delineated by double quotes (") eg. *"premisesType"*	CamelCase and delineated by double quotes (") eg. *{ " premisesType": "Residential" }*
String	A string of arbitrary length, delineated by double quotes (") and comprising all white- and non-whitespace characters except double quotes, line-feeds, and carriage returns. eg. *"Residential","123abc","14 Some Street, New Suburb ACT 2600"*	A string of arbitrary length, delineated by double quotes (") and comprising all white- and non-whitespace characters except double quotes, line-feeds, and carriage returns. eg. *"Residential","123abc","14 Some Street, New Suburb ACT 2600"*
HashString	A string of specified length, delineated by double quotes (") and comprising only 0-9a-z. eg. *"1234abc5d67e"*	A string of specified length, delineated by double quotes (") and comprising only 0-9a-z. eg. *{ "premisesID": "1234abc5d67e" }*
Number	Represented without quotes eg. *17,23,1972,,11*	Represented without quotes eg. *{ "yearConstructed": 1972 }*
Date/Time	Delineated by double-quotes (") and represented as 24-hr UTC time (with leading zeros where appropriate) as follows: yyyy-MM-dd'T'HH:mm:ss'Z' eg. *"016-05-03T16:03:00Z"*	Delineated by double-quotes (") and represented as 24-hr UTC time (with leading zeros where appropriate) as follows: yyyy-MM-dd'T'HH:mm:ss'Z' eg. *{ "timestamp": "2016-05-03T16:03:00Z" }*
Date	Date (at location of installation) string delineated by double-quotes (") with leading zeros where appropriate as follows: yyyy-MM-dd eg. *"2016-05-03"*	Date (at location of installation) string delineated by double-quotes (") with leading zeros where appropriate as follows: yyyy-MM-dd eg. *{ "date": "2016-05-03" }*
Categorical	An enumerated string, delineated by double quotes ("). Linked by an underscore if has multiple words eg. *"GAS", "ELECTRIC_INDUCTION"*	An enumerated string, delineated by double quotes ("). Linked by an underscore if has multiple words eg. *{ "cooktop": "ELECTRIC_INDUCTION" }*
Boolean	If not delineated by double quotes, *True/False* should be treated the same as *true/false*. eg. *True, False, true, false*	If not delineated by double quotes, *True/False* should be treated the same as *true/false*. eg. *{ "swimmingPool": true }*
Null	Represented by a blank/empty entry	Represented by a null object

Data type	.csv file	JSON
	eg. *17,,1972,,11, "Residential"*	eg. *{ "email" : null }*

Customer Data Specification

Note: All data under this Schedule is single instance data, reported once per installation to the Data Coordinator.

Name	Field Name	Data Type	Notes/Description/Example
Time stamp of packet	timeStamp	Date/time	
Packet type	packetType	Categorical	**CUSTOMER_DATA**, SYSTEM_DATA, INSTALLATION_DATA, OPERATIONAL_DATA
Proponent ID	proponentID	String	*Unique string, consistent over time, identifying the proponent providing this data*
Premises ID	premisesID	HashString	*Unique 16 character hash string, consistent over time, identifying the premises from which this data is being sourced*
Customer name	customerName	String	
Customer Address unit number	customerUnitNumber	String	
Customer Address street number	customerStreetNumber	String	
Customer Address street name	customerStreetName	String	
Customer Address suburb	customerSuburb	String	
Customer Address postcode	customerPostcode	String	
Contact phone	contactPhone	String	
Contact email	contactEmail	String	
NMI	nmi	String	
System cost ($)	systemCost	Number	
Housing type	housingType	Categorical	See BCA Construction Classes
Construction year	constructionYear	Number	
Premises type	premisesType	Categorical	RESIDENTIAL, NON-RESIDENTIAL

Additional Customer Data fields, if residential (ie. premisesType = "RESIDENTIAL"):

Name	Field Name	Data Type	Notes/Description/Example
Number of occupants	numOccupants	Number	
Primary heating type	heatingType	Categorical	GAS, ELECTRICAL_RESISTIVE, REVERSE_CYCLE HYDRONIC, OTHER

Name	Field Name	Data Type	Notes/Description/Example
Water heating	waterHeating	Categorical	GAS, ELECTRICAL_RESISTIVE, ELECTRIC_BOOSTED_SOLAR, HEAT_PUMP, OTHER
Air-conditioning (Heating)	airconditioningHeating	Number	Total kW.
Air-conditioning (Cooling)	airconditioningCooling	Number	Total kW.
Cooktop type	cookTop	Categorical	GAS, ELECTRIC, ELECTRIC_INDUCTION
Oven type	ovenType	Categorical	GAS, ELECTRIC
Swimming pool	swimmingPool	Boolean	
Swimming pool heater	swimmingPoolHeater	Categorical	NA, GAS, ELECTRIC, SOLAR_ONLY, OTHER
Number of stay-at-home occupants	numOccupants	Number	

System Information Specification

Note: All data under this Schedule is single instance data, reported once per installation to the Data Coordinator.

Name	Field Name	Data Type	Notes/Description/Example
Time stamp of packet	timeStamp	Date/time	
Packet type	packetType	Categorical	CUSTOMER_DATA, **SYSTEM_DATA**, INSTALLATION_DATA, OPERATIONAL_DATA
Proponent ID	proponentID	String	*Unique string, consistent over time, identifying the proponent providing this data*
Premises ID	premisesID	HashString	*Unique 16 character hash string, consistent over time, identifying the premises from which this data is being sourced*
Commissioning date	commissionDate	Date/Time	
Configuration type	configurationType	Categorical	DC, AC
Battery type/model	batteryType	String	*As per Material Safety Data Sheet*
Maximum battery rated output	maxBatteryOutput	Number	kW
Battery sustained peak output	sustainedPeakOutput	Number	kW
Battery total storage capacity	totalBatteryCapacity	Number	kWh
Maximum recommended depth of discharge	maxDischarge	Number	%

Name	Field Name	Data Type	Notes/Description/Example
Maximum solar PV rated output	maxSolarOutput	Number	kW
Control system type	controlSystem	String	*System name uniquely identifying the specific control system used, details of which are to be documented and stored separately.*
Applicable tariff code	tariffCode	String	*Tariff code uniquely identifying the specific tariff structure used, details of which are to be documented and stored separately.*
Time of use tariff	timeOfUse	Boolean	
Network support agreement	networkSupportAgreement	Boolean	
Wholesale market signalling	wholesaleMarketSignalling	Boolean	
House connection phase	connectionPhase	Categorical	A_PHASE, B_PHASE, C_PHASE, 3_PHASE
System connection type	systemConnection	Categorical	SINGLE_PHASE, THREE_PHASE
Feeder ID	feederID	String	*Refer to DNSP feeder list*

Additional fields, if using a DC configuration (ie. configurationType = "DC")

Name	Field Name	Data Type	Notes/Description/Example
'Smart' inverter type	smartInverterType	String	*Inverter type uniquely describing the type used, details of which are to be documented and stored separately.*
'Smart' inverter maximum rated output	smartInverterMaxRatedOutput	Number	kW
'Smart' inverter Peak Sustained Ouptut	smartInverterPeakSustainedOutput	Number	*kW. Maximum rated sustained output of the inverter for a period of not less than one hour as measured at the network connection side of the inverter.*

Additional fields, if using an AC configuration (ie. configurationType = "AC")

Name	Field Name	Data Type	Notes/Description/Example
Solar inverter type	solarInverterType	String	*Inverter type uniquely describing the type used, details of which are to be documented and stored separately.*
Solar inverter maximum rated output	solarInverterMaxRatedOutput	Number	kW
Solar inverter Peak Sustained Output	solarInverterPeakSustainedOutput	Number	*kW. Maximum rated sustained output of the inverter for a period of not less than one hour as measured at the network connection side of the inverter.*
Battery inverter type	batteryInverterType	String	*Inverter type uniquely describing the type used, details of which are to be documented and stored separately.*
Battery inverter maximum rated output	batteryInverterMaxRatedOutput	Number	kW
Battery inverter Peak Sustained Output	batteryInverterPeakSustainedOutput	Number	*kW. Maximum rated sustained output of the inverter for a period of not less than one hour as measured at the network connection side of the inverter.*

Installation Data Specification

Note: All data under this Schedule is single instance data, reported once per installation to the Data Coordinator.

Name	Field Name	Data Type	Notes/Description/Example
Time stamp of packet	timeStamp	Date/time	
Packet type	packetType	Categorical	CUSTOMER_DATA, SYSTEM_DATA, **INSTALLATION_DATA**, OPERATIONAL_DATA
Proponent ID	proponentID	String	*Unique string, consistent over time, identifying the proponent providing this data*
Premises ID	premisesID	HashString	*Unique 16 character hash string, consistent over time, identifying the premises from which this data is being sourced*
Date of first customer contact	dateFirstContact	Date	
Date of customer order lodged	dateOrderLodged	Date	
Date of Energy Storage System delivery to premises	dateESSDelivered	Date	
Date of request for Certificate of Electrical Safety	dateRequestSafetyCertificate	Date	
Date of first AccessCanberra inspection	dateFirstAccessCanberraInspection	Date	
Date of second AccessCanberra inspection	dateSecondAccessCanberraInspection	Date	
Date of receipt of Certificate of Electrical Safety	dateReceiptSafetyCertificate	Date	
Date of request for ActewAGL connection agreement	dateRequestConnectionAgreement	Date	
Date of receipt of ActewAGL connection agreement	dateReceiptConnectionAgreement	Date	
Date of connection of the ESS by the DNSP (commissioning)	dateCommissioned	Date	

Deed Schedule 4 - Next Generation Energy Storage Grants Data Platform, Version 6

Operational Data Specification

Note: All data under this Schedule is to be sampled every Interval period as specified in the proponent's Deed of Entitlement.

Name	Field Name(s)	Data Type	Notes/Description/Example
Time stamp of packet	timestamp	Date/time	
Packet type	packetType	Categorical	CUSTOMER_DATA, SYSTEM_DATA, INSTALLATION_DATA, **OPERATIONAL_DATA**
Proponent ID	proponentID	String	*Unique string, consistent over time, identifying the proponent providing this data*
Premises ID	premisesID	HashString	*Unique 16 character hash string, consistent over time, identifying the premises from which this data is being sourced*
Sampling interval	Interval	Number	Length of interval (in seconds) as specified in the Deed of Entitlement
Customer gross load	minPspecLoad, minQspecLoad, maxPspecLoad, maxQspecLoad meanPspecLoad, meanQspecLoad	Number	kW, kVAr

Additional fields, if using a DC configuration (ie. see Schedule B, configurationType = "DC"):

Battery state of charge	batterySOC	Number	*Percent state of charge.*
'Smart' inverter power output	minSmartInverterP, minSmartInverterQ, maxSmartInverterP, maxSmartInverterQ, meanSmartInverterP, meanSmartInverterQ	Number	kW, kVAr
Battery real power output	minBatteryP, minBatteryQ, maxBatteryP, maxBatteryQ, meanBatteryP, meanBatteryQ	Number	kW
Meter export power	minExportP, minExportQ, maxExportP, maxExportQ, meanExportP, meanExportQ	Number	kW, kVAr
Meter voltage (network-side)	minV, maxV, meanV, instV	Number	
Meter frequency	Freq	Number	Hertz

Additional fields, if using an AC configuration (ie. see Schedule B, configurationType = "AC"):

Battery state of charge	batterySOC	Number	*Percent state of charge.*
Solar PV inverter power output	minSolarInverterP, minSolarInverterQ, maxSolarInverterP, maxSolarInverterQ, meanSolarInverterP, meanSolarInverterQ	Number	kW, kVAr
Battery inverter power output	minBatteryInverterP, minBatteryInverterQ, maxBatteryInverterP, maxBatteryInverterQ, meanBatteryInverterP, meanBatteryInverterQ	Number	kW, kVAr
Meter export power	minExportP, minExportQ, maxExportP, maxExportQ, meanExportP, meanExportQ	Number	kW, kVAr
Meter voltage (network-side)	minV, maxV, meanV, instV	Number	
Meter frequency	Freq	Number	Hertz