

# HV Customer Connection – Application Form



This document is to be completed by the customer for new HV connections or modification to existing HV connections and will form the basis of the application for HV connections. Completed document to be submitted via email to [hvcustomer@ue.com.au](mailto:hvcustomer@ue.com.au).

## Amendment Record

Issue	Author (Name & Signature)	Date	Amendment Detail	Approved By (Name & Signature)

# HV Customer Connection – Application Form



## 1. Connection Applicant (Site Owner)

Check the box below if applicable and skip to the next section. If not applicable provide details in table below:

<input type="checkbox"/>	Same as previously provided in HV Customer Connection Preliminary Inquiry Form (UE-FM-2930.1).	Submission Date ( <b>DD/MM/YY</b> )

Business name		
ABN		
Contact name		
Address		
Telephone number		
E-mail address		
Check the box relevant to the Customer	<input type="checkbox"/> New HV Customer	<input type="checkbox"/> Existing HV Customer

## 2. Consultant/Contractor (Agent) acting/working on behalf of the above customer

Check the box below if applicable and skip to the next section. If not applicable provide details in table below:

<input type="checkbox"/>	Same as previously provided in HV Customer Connection Preliminary Inquiry Form (UE-FM-2930.1).	Submission Date ( <b>DD/MM/YY</b> )

Business name	
ABN	
Contact name	
Address	
Telephone number	
E-mail address	

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Check the boxes below relevant to this project:

Customer HV Asset	No Change	Modification (Change or Relocation)	New Installation
Main incomer cable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main HV switchgear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metering panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main incomer panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main incomer protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Project Summary (*please provide a brief description of the proposed work; attach project scope of works if available*)

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## 4. Main Switchgear Panel Detail

The following HV switchgear panel information shall be included on the manufacturer drawings. It is critical that this information be made available to UE as soon as possible. Note this information shall be site specific.

General	Make & model
	Frequency
	Rated Voltage (kV)
	Main busbar nominal current rating (A)
	Rated short time current (kA/s)
	Compliant standard
	No. of Phases
	Lightning Impulse Voltage
	Auxiliary Supply Voltage (V)
	Cable Entry
	Construction (e.g. GIS, metalclad, front & rear access, withdrawable)
	Degree of protection (IP rating)
Circuit Breaker	Make & model
	Rated short time current (kA/sec)
	Nominal current rating (A)
	Compliant standard
Protection Relay	Make & model
	Protection functions
	Compliant standard
HV Fuse	Make & model
	Type
	Rated current
	Compliant standard
CT	Make & model
	Compliant standard
	Ratio
	Class
	Rated burden (VA)
	Rated short time current (kA/sec)
	Lightning Impulse Voltage (kV)
VT	Make & model
	Compliant Standard
	Ratio
	Class
	Rated burden (VA)
	Voltage factor (kV peak / unit time)
	Lightning Impulse Voltage (kV)
Core Balance CT	Make & model
	Compliant Standard
	Ratio
	Class

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	Rated Burden (VA)
HV Cable	Size/Type
	Compliant Standard

## 5. Power Transformers

The following transformer(s) information shall be provided. It is critical that this information be made available to UE as soon as possible. Note this information shall be site specific.

- Manufacturer
- Compliant standard
- Rated power (kVA)
- Rated voltage (V) (primary/secondary)
- Rated current (A) (primary/secondary)
- Ratio
- Rated impulse voltage (kV) (BIL)
- Vector group
- Impedance (%)
- Insulation Medium

## 6. High Voltage Motors

Where applicable, the following HV motor(s) information shall be provided. It is critical that this information be made available to UE as soon as possible. Note this information shall be site specific.

- Manufacturer
- Compliant standard
- Rated power (kW)
- Power Factor
- Voltage (V)
- Current (A)
- Frequency (Hz)
- Phase
- Method of starting
- Type (i.e. induction / synchronous)

## 7. Generators

Where applicable, the following generator(s) information shall be provided. It is critical that this information be made available to UE as soon as possible. Note this information shall be site specific.

- Generator Type (e.g. inverter, synchronous etc.)
- Manufacturer
- Compliant standard
- Rated power (kVA)
- Power Factor
- Rated voltage (V)
- Rated current (A)
- Synchronous, transient and sub transient reactance

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- Generator neutral earthing
- Type of excitation
- Voltage regulation
- Speed regulation

Note that if the embedded generators have the possibility of synchronising with UE's network, please submit an embedded generation application form. Refer to UE's website.

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## 8. Overall Requirements

The customer is responsible for supplying and installing all high voltage electrical plant & equipment beyond the designated point of supply on their property, including the main incoming circuit breaker, protection system, metering and all transformer(s). The ownership of the high voltage equipment is the responsibility of the customer. The customer is also responsible for the operation, testing and ongoing maintenance of the high voltage installation.

This section outlines some of the requirements associated with customer HV assets in relation to UE. These requirements are not intended to be applied as a design, installation, modification or construction standard for an electrical installation or system and do not replace or cover requirements for such specifications.

It is customer responsibility to ensure compliance with all statutory regulation governing their work and assets, including but not limited to SIR, NER and relevant Australian Standards.

Item	Requirements	Customer Acceptance / Compliant	
		(Yes/No)	Comment
Voltage Rating	<div><div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></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Item	Requirements	Customer Acceptance / Compliant	
		(Yes/No)	Comment
	<ul style="list-style-type: none"> <li>No other devices apart from metering equipment (with the exception of anti-condensate heaters) shall be located within the HV chamber.</li> <li>The customer shall procure the appropriate NATA tested metering current and voltage transformers including a suitable enclosure satisfying the SIR requirement to house the metering equipment.</li> <li>The metering transformers shall be solely for metering purposes and are not to be used for other purposes such as protection or load monitoring.</li> </ul>		
Protection and control	<ul style="list-style-type: none"> <li>The customer's high voltage installation shall be fitted with a protection system such that it can be coordinated with UE's high voltage protection system.</li> <li>The customer shall discuss the protection requirements with UE prior to any detailed design work or equipment order placement and shall adhere to UE's requirements in order to establish and maintain connection to UE's high voltage distribution system.</li> <li>As a minimum Overcurrent, Earth Fault and Sensitive Earth Fault protections will be required at the HV customer's main incoming HV circuit breaker. Additional requirements could be specified subject to the individual HV customer project.</li> <li>Customer's primary phase fault protective devices for faults at the voltage level of the supply shall detect and clear the bolted short circuit faults not greater than 150 milliseconds at the fault level nominated at the point of supply. Any proposed operating time greater than 150 milliseconds shall be discussed with UE at an early stage.</li> </ul>		
Testing and commissioning	<ul style="list-style-type: none"> <li>As per SIR section 9, Routine test reports on all high voltage electrical equipment up to and including the main circuit breaker shall be submitted to UE for approval prior to supply being made available.</li> <li>Site Acceptance Testing on all high voltage electrical equipment up to and including the main circuit breaker shall be submitted to UE for approval prior to supply being made available.</li> </ul> <p><i>(Refer to Section 9 for detail document submission)</i></p>		
Safety Procedure	<p>The Customer shall implement a 'HV Safety and Operating Procedure' or an equivalent 'Electrical Safety Management Scheme' (ESMS) as per blue book requirements.</p> <p><i>(Refer to Section 9 for detail document submission)</i></p>		
Maintenance	As per SIR Section 9:		

## HV Customer Connection – Application Form



Item	Requirements	Customer Acceptance / Compliant	
		(Yes/No)	Comment
procedure	<ul style="list-style-type: none"> <li>The Customer shall provide a written maintenance proposal for the Main Incoming Circuit Breaker before supply is made available.</li> </ul> <i>(Refer to section 9 for detail document submission)</i>		
Trained Operators	As per SIR Section 9: <ul style="list-style-type: none"> <li>Completed UE-FM-2930.3 HV Customer Authorised Contact List</li> </ul>		

# HV Customer Connection – Application Form



Additional references for HV customers to consult.	<ul style="list-style-type: none"> <li>Services and Installation Rules : <a href="http://www.victoriansir.org.au/">http://www.victoriansir.org.au/</a></li> <li>Electricity Safety : <a href="http://www.esv.vic.gov.au/">http://www.esv.vic.gov.au/</a></li> <li>Blue Book : <a href="https://esv.vic.gov.au/technical-information/electrical-installations-and-infrastructure/the-blue-book/">https://esv.vic.gov.au/technical-information/electrical-installations-and-infrastructure/the-blue-book/</a></li> </ul>
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## 9. Document Submission

HV customer is required to submit the documents listed in this section to UE for review within the specified time frame, in order to obtain UE approval for energisation (**Sanction for Energisation**). Additional documentation may be required specific to each project/customer. Note that the summary of this section is provided in UE-FM-2930.2 HV Customer Document Submission Checklist. All documents to be submitted via email to [hvcustomer@ue.com.au](mailto:hvcustomer@ue.com.au)

Item	Description	Preliminary	Certified Final	Comments
		Required By	Required By	
<b>1.</b>	<b>Drawings</b>			
1.1	Electrical single line diagram	with this application	8 weeks before construction	Drawings shall include the following information: <ul style="list-style-type: none"> <li>Demarcation of existing and new equipment</li> <li>Circuit voltages</li> <li>Facility main isolation point with respect to United Energy</li> <li>Main lockable isolation point with respect to facility setup</li> <li>Meter location and details</li> <li>All isolation device ratings</li> <li>Protection, control, interlocking scheme</li> <li>Relevant system/equipment layouts</li> <li>All equipment schedule, specification and technical detail</li> <li>If drawing does not contain detail equipment specification and technical data (e.g. CB, VT, CT, Protection Relay, TX, motors etc.), separate datasheet and technical specification of the equipment shall be submitted.</li> <li>List of compliant standards</li> </ul> <b>Note:</b> <ul style="list-style-type: none"> <li><b>Only formally drafted drawings and documents can be accepted</b></li> </ul>
1.2	General arrangement of HV plant and equipment			
1.3	Electrical schematic diagram of protection, control, interlocking and alarm scheme inclusive of Trip circuit power supply (i.e. DC supply system). Manufacturers Drawings.			
1.4	Earthing system arrangement and layout			

# HV Customer Connection – Application Form



Item	Description	Preliminary	Certified Final	Comments
		Required By	Required By	
				<ul style="list-style-type: none"> <li><b>Approximate UE review time 2 weeks</b></li> </ul>
<b>2</b>	<b>Technical reports &amp; system studies</b>			
2.1	Protection coordination study including but not limit to: <ul style="list-style-type: none"> <li>Detail functional description and control scheme/philosophy.</li> <li>Protection relays settings</li> <li>Coordination and grading graphs</li> <li>Monitoring schemes of tripping supply system and other critical assets (HV CB status, UPS status etc...)</li> </ul>	with this application	8 weeks before energisation	<b>Note:</b> <ul style="list-style-type: none"> <li><b>Approximate UE review time 2 weeks</b></li> </ul>
2.2	Earthing system report and assessment to comply safety in terms of touch, step voltages	with this application	4 weeks before energisation	<b>Note:</b> <ul style="list-style-type: none"> <li><b>Approximate UE review time 2 weeks</b></li> </ul>
2.3	Power quality study (if applicable)	with this application	8 weeks before construction	<b>Note:</b> <ul style="list-style-type: none"> <li><b>Approximate UE review time 2 weeks</b></li> </ul>
<b>3</b>	<b>Procedures, plans &amp; schedule</b>			
3.1	Project Schedule	with this application	8 weeks before construction and upon change	UE shall be notified of any changes to the project schedule and timing. Customer to share project schedule updates to UE on regular basis
3.2	Installation and commissioning test plan (inclusive of ITP)	8 weeks before energisation	4 weeks before energisation	Installation and commissioning test plan is referring to the overall Site acceptance test sequence and ITP document/s that outline the list of required tests during installation and commissioning <ul style="list-style-type: none"> <li><b>Approximate UE review time 2 weeks</b></li> </ul>
3.3	HV Safety Procedure	8 weeks before energisation	4 weeks before energisation	Customer shall provide a HV Safety Procedure per blue book requirements <ul style="list-style-type: none"> <li><b>Approximate UE review time 2 weeks</b></li> </ul>

## HV Customer Connection – Application Form



Item	Description	Preliminary	Certified Final	Comments
		Required By	Required By	
3.4	Operations Procedure	8 weeks before energisation	4 weeks before energisation	<p>Customer shall provide to UE a copy of the Customer's high voltage operating procedures, prepared in accordance with the "Blue Book"</p> <ul style="list-style-type: none"> <li>• <b>Approximate UE review time 2 weeks</b></li> </ul>
3.5	Maintenance Procedure	8 weeks before energisation	4 weeks before energisation	<p>As a minimum, customer shall provide a written maintenance proposal for the Main Incoming Circuit Breaker and any related systems (including protection relay, tripping supply system, etc...) before supply is made available</p> <ul style="list-style-type: none"> <li>• <b>Approximate UE review time 2 weeks</b></li> </ul>

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Item	Description	Certified Final	Comments
		Required By	
	<ul style="list-style-type: none"> <li>Lamp test of all indication</li> <li>Test auxiliary relays</li> <li>Mimic panel indication verification</li> <li>Testing of alarms and SCADA</li> </ul>		
4.4	<b><u>Auxiliary Power Supplies Testing</u></b> Tripping power supply system test report including but not limited to: <ul style="list-style-type: none"> <li>Visual inspection of batteries</li> <li>Battery test – e.g. battery analyser test or discharge test</li> <li>Battery charger performance</li> <li>Verification of status and alarm monitoring</li> </ul>	14 days before energisation	
4.5	Earth grid installation and testing <ul style="list-style-type: none"> <li>Switchgear earthing connection test report</li> <li>Touch and step potential test measurements</li> </ul>	7 days before energisation	
4.6	Switchgear power frequency withstand test	Within 48hrs of energisation	Test conducted more than 48hrs before energisation won't be accepted
4.7	HV Cable VLF testing	Within 48hrs of energisation	Test conducted more than 48hrs before energisation won't be accepted
<b>5</b>	<b>Certification</b>		
5.1	Metering CT test certificate	4 weeks before energisation	NATA certification required
5.2	Metering VT test certificate	4 weeks before energisation	NATA certification required
5.3	Prescribed CES (Certificate of Electrical Safety)	Within 48hrs of energisation	Shall be issued by an ESV authorised independent inspector
5.4	HV metering field setup report issued by metering provider	Before energisation	This is an official field document issued by meter provider which captures the meter specific setup information and declares the HV meter has been setup appropriately & ready for HV energisation
5.5	HV Clearance	On the day of energisation	This is an official signed statement by the proponent or its' agent to state that all



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Item	Description	Certified Final	Comments
		Required By	
		supplied to UE authorised HV operator <b>AND</b> email a copy to <a href="mailto:hvcustomer@ue.com.au">hvcustomer@ue.com.au</a> no later than 3 days after energisation	design, construction, testing & commissioning of the facility/plant has been satisfied according to relevant codes, standards & rules to be deemed appropriate for HV energisation. If multiple entities involved, then all key stakeholders must sign off.  This is 'Blue Book' requirements
<b>6</b>	<b>Miscellaneous</b>		
6.1	HV connection and or reserve capacity agreement	4 weeks before energisation	All customers are required to enter into HV supply agreement.  Reserve agreement may apply to HV supply customers
6.2	Facility authorised HV officers/operators and HV contact detail (24/7 access)	4 weeks before energisation	Fill and return UE-FM-2930.3 HV Customer Authorised Contact List