



USER MANUAL: BEAM SOLAR TOOL

NSW Councils



Version Control

June 2022

Overview

Beam has created an online Solar Tool to undertake a solar assessment at your site of choice. This will enable you to identify solar projects testing a range of project sizes, cost and technical considerations for different solar scenarios.

The Solar Tool incorporates satellite imagery to map the maximum solar system for your site(s) the data from the electricity smart meter, invoice and local solar data. Outputs are extremely accurate and project costs and benefits of every solar configuration possible for the chosen site. The User is also able to drill down to see what the modelled system will do on any hour of the year.

The Solar Tool is designed to identify the optimal size array using a simple payback model over 25 years operation incorporating maintenance and inverter replacement. Alternative funding and operational models under a Power Purchase Agreement (PPA) are also able to be modelled in the Tool.

The Solar Tool can also account for the effect of incentives on cash flows including STC (small technology certificate) for systems below 99kW and systems larger than 99kW can generate LGCs (large generation certificates) which will improve system payback.

Beam Solar Disclaimer

The User (NSW Council) is granted the right, without any ongoing fee or cost, to use the Solar Tool for any purpose of creating a solar project for their site, information held within the Solar Tool is not to be used externally from the Tool for commercial purposes or sales. Any updates, bug-fixes, revisions or new versions will be discussed with the NSW Government on an as needs basis and may incur a fee. This manual describes the live version of the tool at the publication date of the manual, future versions may be updated as required.

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Glossary

Interval Data

Real time electricity usage recorded by the smart meter installed at the site. Depending on the meter type, usage is typically broken down into 30 or 15 minute intervals. This data can be requested from the retailer and is provided in Excel format. This can be requested by Beam once a Letter of Authority has been provided.

Large-scale Generation Certificates (LGCs)

Large-scale Generation Certificates (LGCs) are a form of carbon offset in Australia. LGCs are renewable energy certificates that are created under the Large-scale Renewable Energy Target (LRET) scheme. One LGC is equivalent to 1 Megawatt-hour (MWh) of renewable energy generation. LGCs are a robust carbon offset with high integrity which can be purchased and surrendered to offset Scope 2 emissions only as per the [Climate Active](#) guidelines.

However, the LRET scheme currently expires in 2030 and there is no current federal government policy to extend or replace the existing scheme. Further, as the emissions intensity of the grid reduces, LGCs may overtime become a relatively expensive form of abatement as you need to buy more LGCs for an equivalent amount of abatement.

Power Purchase Agreement

A potential financed option for solar installed on site is a Power Purchase Agreement (PPA). Site owners would pay no upfront cost to install the system, instead purchasing the electricity generated from the provider at a fixed rate that is typically cheaper than grid electricity resulting in a cashflow positive asset from day 1. There is also the option to purchase the system for \$1.00 at the end of the term which are typically 10 – 15 years.

Small-scale Technology Certificate (STC)

STC (small technology certificate) is a financial incentive that subsidises roughly a third of the capital cost of each system below 100kW, resulting in a shorter payback period.

Getting Started

To access the Solar Tool, navigate to NSW Council home page in the browser which is:
<https://www.beam.solar/nsw-council-start>

The information needed to complete a desktop solar assessment with the Solar Tool include:

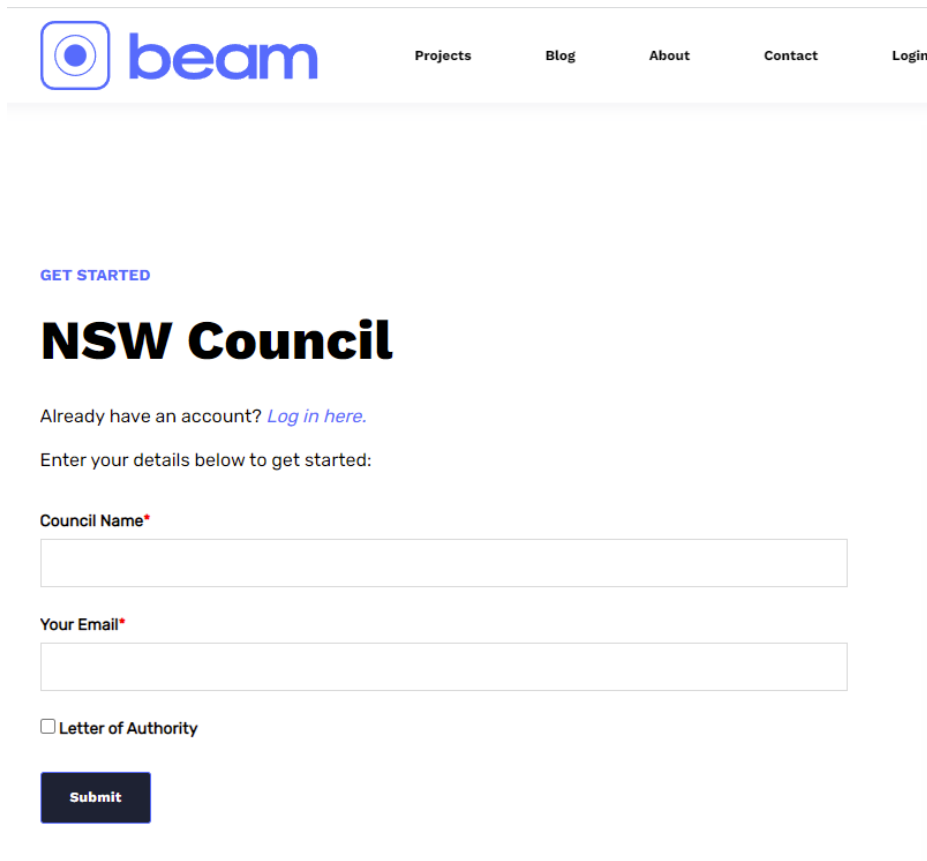
- Current email address
- A copy of the most recent electricity bill for the site(s) detailing energy costs and usage
- Street address for the site(s).
- Interval data in Excel format – see *Correctly Formatting the Interval Data & Requesting Interval Data* sections for more information
- Preferred browser – Google Chrome

Creating a User and Logging In

Creating a Primary User

Navigate to the landing page and create a login for a specific council:

<https://www.beam.solar/nsw-council-start>



The screenshot shows the 'NSW Council' creation page on the Beam Energy Labs website. The page has a header with the Beam logo and navigation links: Projects, Blog, About, Contact, and Login. Below the header, there is a 'GET STARTED' link and the title 'NSW Council'. A link 'Log in here.' is provided for existing users. The form asks for 'Council Name*' and 'Your Email*', both with text input fields. There is a checkbox for 'Letter of Authority' and a 'Submit' button.

Enter the User Council name and email address which you wish to use as the primary access to the Solar Tool.

From this primary login, the user can invite other users to contribute to the council assessments.

Tick the “Letter of Authority” box if interval data has not already been collected – See *Requesting Interval Data* section for more information

Follow the prompts in the email sent to the primary email address which will provide a link to create a password.

Once the password has been created, the Council and Primary User has been created and the Solar Tool home page below will be displayed.

Test Council

Assess Procure Operate

Sites Assessments Recommendations

New Site New Quick Assessment

Export

Columns

Q

Site Name Address State Zoning Existing Solar? Existing Solar Size (kW) Actions

No Results

Inviting New Users

New users can be invited to contribute to the Council assessments. To invite a new User, navigate to the **cog** in the top right corner of the screen and select **“Customer Users”**



This will navigate to the Users page below, where the primary user is listed with a status of **“Registered”**. Select the **“+ Invite User”** button to invite users to contribute and view solar assessments.

Users

+ Invite User

Email Status Actions

emma.faire+aglttest@beam.solar

Registered

Delete

The prompt below will appear on the screen allowing the primary user to enter the email address of the new User. An email inviting the new user will contain a link to set a password and provide access to the Council site.

Close

Invite User

Inviting a user gives access to manage Test Council

User Email

Invite

Users

[+ Invite User](#)

Email	Status	Actions
emma.faure+aglttest@beam.solar	Registered	Delete
emma.faure+demouser@beam.solar	Pending	Delete

The User will remain with a Status of **“Pending”** until the email link has been activated and a password created.

Customer Users are also able to be deleted from this view under **“Actions”** by selecting **“Delete”**.

Requesting Interval Data

If the User has checked the “Letter of Authority” box upon sign in, an email will automatically be sent to the User which will navigate to the Beam DocuSign page which can also be found at the following link:

<https://na3.docusign.net/Signing/?insession=1&ti=e2c524bdd134478ea6d02ef2ba8b9af4>

Complete the Letter of Authority to enable Beam staff to contact the Councils electricity retailer directly to acquire interval data on behalf of the User.

Navigation

At the top left of the screen there is a navigation bar which can be used to return to the main council page by selecting the Council name.

➡ Test Council / Account Users

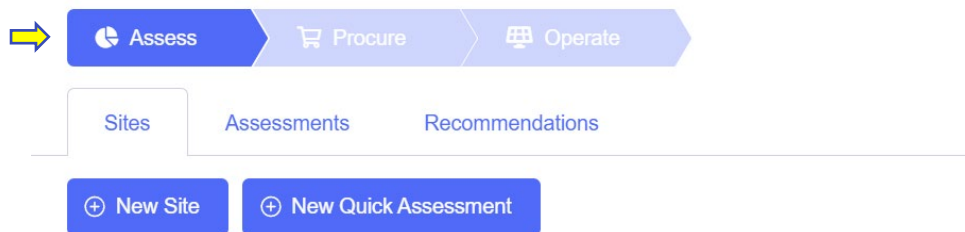
Users

Council Home Page

The Council Home Page is where all assessments created.

Test Council / Sites

Test Council

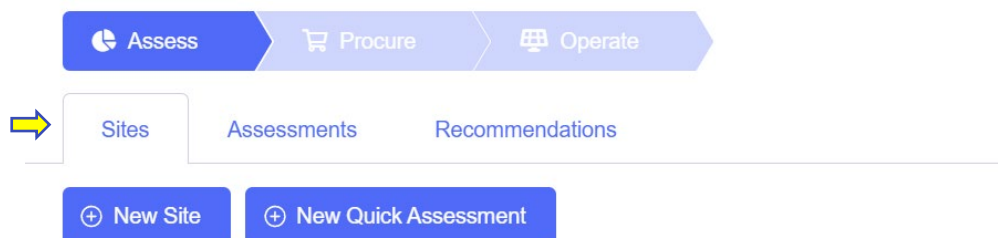


The tool bar underneath the Council name shows the flow of solar assessments from **“Assess”** to **“Procure”** and finally **“Operate”**. The NSW Government at this time intends only to unlock the functionality of the **“Assess”** component of the Solar Tool which is outlined in this manual.

The tabs underneath the tool bar **“Sites”**, **“Assessments”** and **“Recommendations”** is where the Council User will be primarily engaged.

Test Council / Sites

Test Council



The **“Sites”** tab will display all sites that have been created for the council. A site is a location with a unique address from which a solar assessment can be created. The **“Assessments”** tab is where all solar assessments created for the Council are listed. From the list of assessments the user can select specific assessments to be represented and tabled in the **“Recommendations”** – this is covered in subsequent sections of this manual.

Create, Edit and Delete Sites

Create a New Site

From the main Council Home Page, new sites can be created. This can be done by selecting **“+ New Site”** on the sites tab. The data entry window will open for input the site-specific information.

The latitude and longitude will auto populate from the address entered. Alternatively you can enter the latitude and longitude first and the address will auto populate.

Select the **“Zoning”** identifier that best describes the use of the site and tick the **“Existing Solar”** box if it is known to be solar at the site (ticking this box will then allow you to enter the solar size in kW).

Click **“Create”** and the site will now appear in the Council Home Page.

New Site

Site Name

Address

Latitude



Longitude

Zoning

☐ Existing solar?

Edit and Delete a Site


The User may edit/delete site detail from the **“Actions”** menu on the right of screen.



<div> <div>Sites</div> <div>Assessments</div> <div>Recommendations</div> </div> <div> <div>New Site</div> <div>New Quick Assessment</div> <div>Export</div> <div>Columns</div> <div></div> </div> <div> <div></div> <div></div> </div>						
Site Name	Address	State	Zoning	Existing Solar?	Existing Solar Size (kW)	Actions
Test Head Office	268-274 CANTERBURY RD, SURREY HILLS VIC 3127	VIC	Commercial/Business	x		 

Create, Edit & Delete Assessments

Create a New Assessment

To create an assessment, select the **“Site Name”** (blue text) for which the assessment is to be created, this will direct to the **“Assessments”** tab.



<div> <div>Sites</div> <div>Assessments</div> <div>Recommendations</div> </div> <div> <div>+ New Site</div> <div>+ New Quick Assessment</div> <div>Export</div> <div>Columns</div> <div>Q</div> </div>							
Site Name	Address	State	Zoning	Existing Solar?	Existing Solar Size (kW)	Actions	
Test Head Office	268-274 CANTERBURY RD, SURREY HILLS VIC 3127	VIC	Commercial/Business	x		 	

From within the Assessment tab the user can choose to create either a **“+New Assessment”** or a **“+New Quick Assessment”**

Assessments

+ New Assessment

+ New Quick Assessment

Click **“+New Assessment”** and the following window for completion will be shown:

New Assessment

Assessment Name

Interval Data

Invoice

NMI / Meter Device Id

1. Provide an assessment name for example – Initial Assessment.
2. Chose an Interval data file to load with the correct formatting (refer to the section *Correctly Formatting Interval Data*).
3. Load a copy of the most recent electricity bill including all pages and tariff charges.
4. Enter the National Meter Identifier (NMI) from the bill.
5. Scroll down to the tariff structure entry (see image overleaf). This is required to be entered from the most recent retail electricity bill.

Energy Charges

Peak	c/kWh	Off Peak	c/kWh
Solar Feed	c/kWh		

Network Charges

Peak	c/kWh	Off Peak	c/kWh
Peak Demand	\$/kVA	Off Peak Demand	\$/kVA
Access	\$/Day		

Regulated Charges

Participant	c/kWh	Ancillary	c/kWh
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Environmental Charges

VEET	c/kWh	LRET	c/kWh
SRES	c/kWh		

Metering, Retail & Services Charges

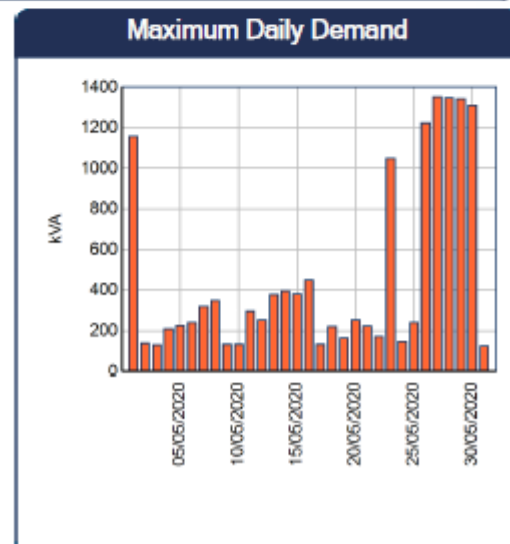
Metering	\$/Day	Service	\$/Month
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A sample retail bill has been provided below which indicate where all relevant charges for this site can be found.

Retailers may have different tariff charges as such some fields will remain blank.

Pricing Details		Account: AUMS01_002		
Charges	Usage	Unit Price	Loss Factor	Total Price (excl GST)
Retail Charges				
NSW Peak	18,511.200 kWh	10.5702 c/kWh	1.01105	\$1,978.29
NSW Off Peak	36,356.400 kWh	6.5781 c/kWh	1.01105	\$2,417.99
NSW Shoulder	44,363.400 kWh	8.8418 c/kWh	1.01105	\$3,965.87
Environmental Schemes				
ESC	99,231.000 kWh	0.1950 c/kWh	1.03200	\$199.69
LRECs	99,231.000 kWh	0.6643 c/kWh	1.03200	\$680.29
SRECs	99,231.000 kWh	0.9748 c/kWh	1.03200	\$998.26
Network Charges				
BHND3AO - Peak	7,830.900 kWh	3.0613 c/kWh		\$239.73
BHND3AO - Shoulder	55,043.700 kWh	2.7346 c/kWh		\$1,505.23
BHND3AO - Off Peak	36,356.700 kWh	2.2244 c/kWh		\$808.72
BHND3AO - Demand Peak	1,167.000 kVA	8.7449 \$/kVA/Mth		\$10.30
BHND3AO - Demand Off Peak	1,311.000 kVA	2.3676 \$/kVA/Mth		\$3,103.92
BHND3AO - Demand Shoulder	1,355.000 kVA	7.9120 \$/kVA/Mth		\$10,720.76
BHND3AO - Supply Charge	31 Days	18.3599 \$/Day		\$569.16
Market Operator Charges				
AEMO Ancillary Fee	99,231.000 kWh	0.1529 c/kWh	1.03200	\$156.58
AEMO Market Fee	99,231.000 kWh	0.0368 c/kWh	1.03200	\$37.69
AEMO Market Fee	31 Days	0.3633 c/day	1.00000	\$0.11
Metering Charges				
Meter Charge		3.00 \$/mtr/yr		\$189.40
GST				\$3,775.69
Total (excl GST)				\$37,758.99
TOTAL for NMI BEAMDEMO				\$41,532.68

NMI Profile Summary			
Highest actual metered demand this period:		1,354.86 kVA	
(Recorded 27/05/2020 08:00)			
Power Factor at time of highest metered demand:		0.991	
Load Factor		9.9%	
Carbon Intensity		0.71634	
Distribution Loss Factor		1.03200	
Transmission Loss Factor		0.97970	
Net Loss Factor		1.01105	
TOTAL USAGE		99,231.00 kWh	
Meter	Usage (kWh)	Meter	Usage (kWh)
E1-PED041600005	0.00	E2-PED041700021	99,231.00



Incentives

LGC Sold	\$/MWh	VEET Rebate	\$/MWh
Capital Contribution	\$	Capital Discount	%

Solar

Existing Solar	kW	Include Solar in STC/LGC?	Yes
----------------	----	---------------------------	-----

Battery

Operation	No Battery
-----------	------------

Generator

Operation	No Generator
-----------	--------------

Any known incentives can be populated in this section.

Capital contribution can also be added with a capital discount in line with any financial frameworks specific to the council. Alternatively, can remain blank.











Simple battery model can be selected to be incorporated into the assessment

Solar Layout Image

Choose File

Solar Arrays

Paste Helioscope Data Here (replaces existing arrays)

Description	kW	Tilt	Azimuth	Panel Type	Actions
Field Segment 1	26.748407	10	0	Roof Top (Flush)	 
Field Segment 2	26.748407	10	90	Roof Top (Flush)	 
Field Segment 3	26.748407	10	180	Roof Top (Flush)	 
Field Segment 4	26.748407	10	270	Roof Top (Flush)	 
				Roof Top (Flush)	 

Create

The solar layout is automatically generated from the location data, no inputs are required here.

You can choose to edit the solar array such as tilt, azimuth, kW and panel/mounting type to suite site conditions.

Click “Create” – it may take a few minutes for the assessment to complete

Field segments and solar arrays are automatically populated based on satellite imagery for the location entered and other in-built default factors to calculate the maximum solar system that will fit on the site roof. These segments are with a 10 degree tilt and north, east, south and west orientation to mimic real world scenarios. It is recommended that the auto generated segments are used for an initial assessment, they can be changed at a later time if solar module mapping is going to be used. More information can be found in the section – **Optimising an Assessment Configuration**.

Once the assessment is complete, the Tool will select the system size which is most optimal, this is likely to be 99kW system due to the STC rebate available improving the overall payback of the system.

Test Head Office

Assess Procure Operate

Assessments





+ New Assessment

+ New Quick Assessment

Export

Columns

Q

Assessment Name ↑	Site Name	Project Status	NMI	Selected Solar Size	Annual Savings	Estimated Cost	Simple Payback	Actions
Initial Assessment	Test Head Office	-	VEEEE00003938	99 kW	\$21,731	\$109,100	5.0 years	   

From the Council Home view, the assessment is now visible with all project variable listed including system size, annual savings, estimated install cost (outright purchase) and simple payback.

Clone, Edit and Delete an Assessment

Once an assessment is created, it is possible to clone, edit and delete the assessment from the main council home page view – under the “Actions” menu on the far right of the screen.

Test Head Office

Assess Procure Operate

Assessments

+ New Assessment





+ New Quick Assessment

Export

Columns

Q



Assessment Name ↑	Site Name	Project Status	NMI	Selected Solar Size	Annual Savings	Estimated Cost	Simple Payback	Actions
Initial Assessment	Test Head Office	-	VEEEE00003938	99 kW	\$21,731	\$109,100	5.0 years	   



Select to view tariff charges entered



Clone an assessment



Edit an assessment



Delete an assessment

Create a New Quick Assessment

Alternatively a **Quick Assessment** can be created, this uses satellite imagery to automatically calculate roof area and maximum solar size. Electricity usage and costs are estimated based on roof area, standard commercial load shape and default flat electricity rate. Inputs can be updated once the Quick Assessment has been created.

Correctly Formatting Interval Data

When assessments fail, it is most likely due to the interval data file not been formatted correctly. Interval data comes directly from the retailer in Excel and can be provided in a variety of formats with any number of columns, worksheet tabs, header rows, or include null data.

A sense check and clean-up of the data may be required for the assessment to run successfully. The following are key things to check to ensure the data file is correctly formatted:

- No header rows – the first row should contain the column name
- A total of three columns is required
 - A date and time column is required – this can be 30 or 15min steps
 - A column is required for either kW or kWh
 - A column for kVA
- Ideally 12 months of data is required
- No more than one tab in the spreadsheet– delete all other tabs
- Check for bad data – e.g. ensure that kVA \geq kW, no missing data, errors, etc

Optimising an Assessment

Once an assessment has been created, the User can optimise the assessment by viewing and comparing system sizes and finance options in the assessment flow.

First step would be to Clone the assessment, leaving the default Initial Assessment for later comparison. Rename the assessment and select this assessment from the Home page once it have been created – this make take a few minutes.

Test Council / User Test Office / Assessments







NSW Planning, Industry & Environment

User Test Office

Assess Procure Operate

Assessments

New Assessment New Quick Assessment Export Columns


Assessment Name ↑	Site Name	Project Status	NMI	Selected Solar Size	Annual Savings	Estimated Cost	Simple Payback	Actions
Assessment User	User Test Office	-	VEEER33200	99 kW	\$43,438	\$81,700	1.9 years	  
Assessment User Clone	User Test Office	-	VEEER33200	99 kW	\$43,438	\$81,700	1.9 years	  

The assessment screen below will then be displayed:

Site Overview > Solar > Battery > Power Factor > Contract


Review your Site




We've reviewed your sites electricity data and mapped the maximum solar that will fit on your roof to provide the following insights:



Choose System Size >

Assessment User Clone
CITY PLAZA 432 PEEL ST, TAMWORTH NS...



Solar	99 kW
Battery	0 kWh
Power Factor	1.00
Annual Savings	\$43,438
Payback	1.9 years
Estimated Cost	\$81,700
Details	  

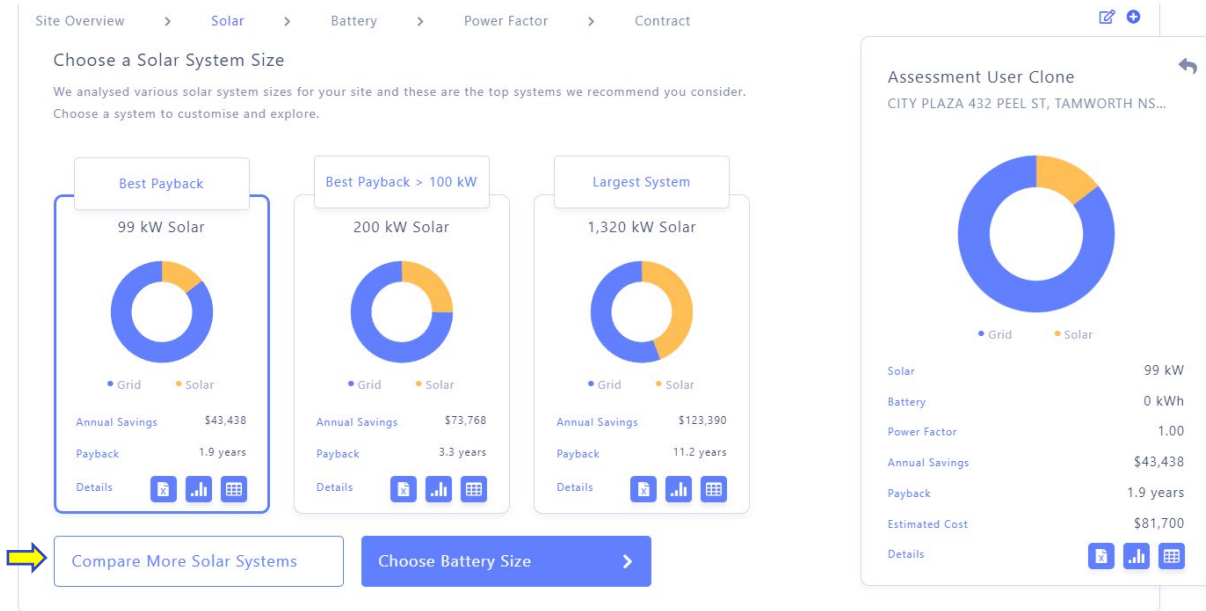
There are two different ways to optimise the assessment as part of the assessment flow, this can be achieved by stepping through each of the items on the top row – **Site Overview > Solar > Battery > Power Factor > Contract**, OR by selecting the buttons at the bottom of the page, stepping the user through each assessment requirement.

This manual will detail the process flow by selecting the buttons at the bottom of the card.

The assessment flow screen also displays the Google satellite image of the site and an Assessment Card showing what is currently selected for the project detail. This card can be flipped to show more detail by selecting the grey arrow to reveal annual electricity cost, usage and power factor.

Choose Solar System Size

The User can select the solar system size by selecting the card indicating “Best Payback”, “Largest System” or “Custom Size” (the Best Payback is the default selection). Alternatively select “Compare More Solar Systems” button to display the solar scenarios table below from which different solar systems up to the maximum solar size can be selected.

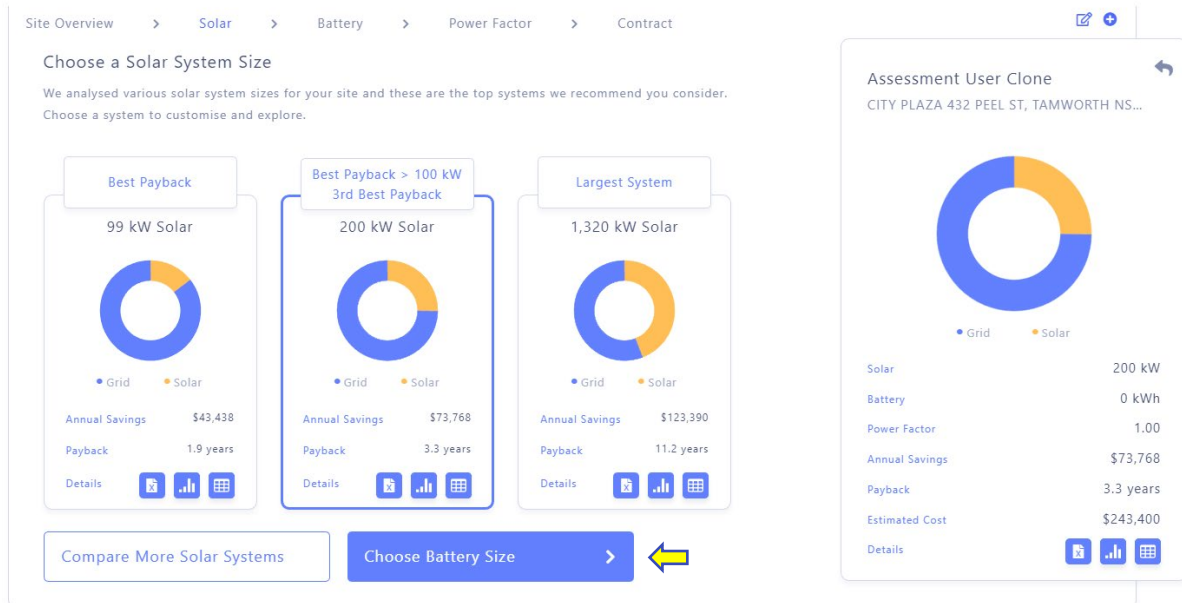


Solar Scenarios

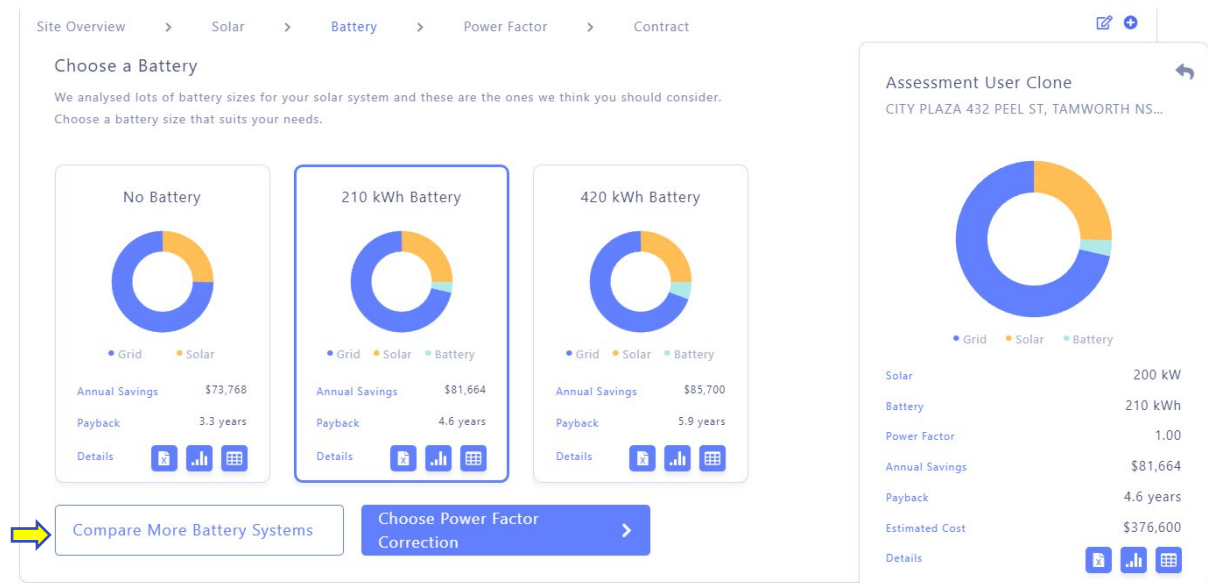
System Name	Solar Size	Battery Size	Solar Used	Solar For Export	Solar For Export	Annual Savings	Cost Estimate	Payback
0 kW Solar	0 kW	0 kWh	0 kWh	0 kWh	0.0%	\$0	\$0	N/A
99 kW Solar	99 kW	0 kWh	130,942 kWh	15,813 kWh	10.8%	\$43,438	\$81,700	1.9 years
100 kW Solar	100 kW	0 kWh	132,089 kWh	16,148 kWh	10.9%	\$43,815	\$82,500	1.9 years
200 kW Solar	200 kW	0 kWh	227,033 kWh	69,443 kWh	23.4%	\$73,768	\$243,400	3.3 years
300 kW Solar	300 kW	0 kWh	284,064 kWh	160,649 kWh	36.1%	\$91,908	\$353,700	3.8 years
400 kW Solar	400 kW	0 kWh	317,236 kWh	271,613 kWh	46.1%	\$101,986	\$461,200	4.5 years
500 kW Solar	500 kW	0 kWh	338,966 kWh	392,256 kWh	53.6%	\$108,000	\$566,500	5.2 years
600 kW Solar	600 kW	0 kWh	354,362 kWh	519,233 kWh	59.4%	\$112,037	\$670,200	6.0 years
700 kW Solar	700 kW	0 kWh	365,496 kWh	648,057 kWh	63.9%	\$114,970	\$772,500	6.7 years
800 kW Solar	800 kW	0 kWh	373,456 kWh	776,412 kWh	67.5%	\$117,185	\$873,800	7.5 years
900 kW Solar	900 kW	0 kWh	379,857 kWh	906,327 kWh	70.5%	\$118,937	\$974,000	8.2 years
1,000 kW Solar	1,000 kW	0 kWh	385,210 kWh	1,036,660 kWh	72.9%	\$120,364	\$1,073,400	8.9 years
1,100 kW Solar	1,100 kW	0 kWh	389,817 kWh	1,161,945 kWh	74.9%	\$121,479	\$1,171,900	9.6 years
1,200 kW Solar	1,200 kW	0 kWh	393,740 kWh	1,287,915 kWh	76.6%	\$122,424	\$1,269,800	10.4 years
1,300 kW Solar	1,300 kW	0 kWh	397,124 kWh	1,414,423 kWh	78.1%	\$123,240	\$1,367,100	11.1 years

Choose Battery Size (optional)

The User can select to incorporate a battery as part of the assessment, this is only a viable option if the solar energy generated by the solar system size is greater than what is utilised at the site.



The User can select the battery size by selecting the card outlining the battery options with the best payback, alternatively select **“Compare More Solar Systems”** button to see more options.



Battery Scenarios

System Name	Solar Size	Battery Size	Solar Used	Solar For Export	Solar For Export	Annual Savings	Cost Estimate	Payback
0 kW Solar	0 kW	0 kWh	0 kWh	0 kWh	0.0%	\$0	\$0	N/A
99 kW Solar	99 kW	0 kWh	130,942 kWh	15,813 kWh	10.8%	\$43,438	\$81,700	1.9 years
99 kW Solar, 105 kWh Battery	99 kW	105 kWh	131,185 kWh	7,710 kWh	5.3%	\$45,280	\$151,300	3.3 years
99 kW Solar, 210 kWh Battery	99 kW	210 kWh	131,313 kWh	3,436 kWh	2.3%	\$46,122	\$214,900	4.7 years
100 kW Solar	100 kW	0 kWh	132,089 kWh	16,148 kWh	10.9%	\$43,815	\$82,500	1.9 years
100 kW Solar, 105 kWh Battery	100 kW	105 kWh	132,336 kWh	7,934 kWh	5.4%	\$45,687	\$152,100	3.3 years
100 kW Solar, 210 kWh Battery	100 kW	210 kWh	132,466 kWh	3,578 kWh	2.4%	\$46,551	\$215,700	4.6 years
200 kW Solar	200 kW	0 kWh	227,033 kWh	69,443 kWh	23.4%	\$73,768	\$243,400	3.3 years
200 kW Solar, 210 kWh Battery	200 kW	210 kWh	227,970 kWh	38,206 kWh	12.9%	\$81,664	\$376,600	4.6 years
200 kW Solar, 420 kWh Battery	200 kW	420 kWh	228,562 kWh	18,473 kWh	6.2%	\$85,700	\$503,800	5.9 years
300 kW Solar	300 kW	0 kWh	284,064 kWh	160,649 kWh	36.1%	\$91,908	\$353,700	3.8 years
300 kW Solar, 210 kWh Battery	300 kW	210 kWh	285,466 kWh	113,905 kWh	25.6%	\$104,109	\$486,900	4.7 years
300 kW Solar, 630 kWh Battery	300 kW	630 kWh	287,260 kWh	54,115 kWh	12.2%	\$116,914	\$741,300	6.3 years
400 kW Solar	400 kW	0 kWh	317,236 kWh	271,613 kWh	46.1%	\$101,986	\$461,200	4.5 years
400 kW Solar, 420 kWh Battery	400 kW	420 kWh	320,284 kWh	170,013 kWh	28.9%	\$128,127	\$721,600	5.6 years

Power Factor Correction


Typically, as part of solar installation, Power Factor Correction is installed to ensure the site is effectively utilising its power supply. The site power factor should be as close to 1 as possible to decrease network demand charges.

Site Overview > Solar > Battery > Power Factor > Contract

Choose a Battery

We analysed lots of battery sizes for your solar system and these are the ones we think you should consider. Choose a battery size that suits your needs.

No Battery




Grid Solar

Annual Savings \$73,768

Payback 3.3 years

Details

210 kWh Battery




Grid Solar Battery

Annual Savings \$81,664

Payback 4.6 years

Details

420 kWh Battery



Grid Solar Battery

Annual Savings \$85,700


Payback 5.9 years

Details

Compare More Battery Systems
Choose Power Factor Correction

Assessment User Clone

CITY PLAZA 432 PEEL ST, TAMWORTH NS...



Grid Solar Battery

Solar 200 kW

Battery 210 kWh

Power Factor 1.00

Annual Savings \$81,664

Payback 4.6 years

Estimated Cost \$376,600

Details

In this example, the current power factor is 1 hence this site does not require this option in the assessment.

Site Overview > Solar > Battery > **Power Factor** > Contract




Choose Power Factor Correction

We analysed the power factor at your site with the selected system to see if power factor correction (PFC) will improve the returns. Choose whether to add PFC to your system.

Current Power Factor

1.00




Annual Savings: \$81,664
Payback: 4.6 years

Details   

Power Factor with PFC


0.99

Annual Savings: \$81,374
Payback: 4.7 years

Details   




[Choose Contract Structure >](#)

Assessment User Clone
CITY PLAZA 432 PEEL ST, TAMWORTH NS...



• Grid • Solar • Battery

Solar	200 kW
Battery	210 kWh
Power Factor	1.00
Annual Savings	\$81,664
Payback	4.6 years
Estimated Cost	\$376,600

Details   

Choose Contract Structure


The User can choose to compare different financial models for how the system is contracted outlining annual cost, savings and payback. More information on the contract types can be found in the Glossary. Select the **“Choose Contract Structure”** button to view options.

Site Overview > Solar > Battery > Power Factor > **Contract**

Choose a Contract Type

We have estimated the price of your selected system. Choose how you want to contract your system: As an Outright Purchase or as a Power Purchase Agreement (PPA).


Outright Purchase



• Annual Savings • Annual Costs

Annual Savings	\$81,664
Annual Costs	\$0
Net Annual Savings	\$81,664
Payback	4.6 years
Estimated Cost	\$376,600

15 Year Power Purchase Agreement




• Annual Savings • Annual Costs

Annual Savings	\$81,664
Annual Costs	\$44,959
Net Annual Savings	\$36,705
Payback	-
Estimated PPA Price	15.2c/kWh




[Compare More Contract Types](#)
[Request Initial Offers >](#)

Assessment User Clone
CITY PLAZA 432 PEEL ST, TAMWORTH NS...



• Grid • Solar • Battery

Solar	200 kW
Battery	210 kWh
Power Factor	1.00
Annual Savings	\$81,664
Payback	4.6 years
Estimated Cost	\$376,600

Details   

Options for outright purchase or 15 year Power Purchase Agreement (PPA) are provided with outright purchase being the default option. This window allows to User to clearly compare the different financial models comparing annual net savings, pay back also estimating a PPA price with current market data.

The User can choose either of the default options above or select **“Compare More Contract Types”** button to view the table below

More Contracts

Contract	Cost (±10%)	Annual Savings	Annual Costs	Net Annual Savings	Payback
Outright Purchase	\$376,600	\$81,664	\$0	\$81,664	4.6 years
5 Year PPA	34.3 c/kWh	\$81,664	\$101,725	-\$20,061	N/A
6 Year PPA	29.5 c/kWh	\$81,664	\$87,324	-\$5,660	N/A
7 Year PPA	26.0 c/kWh	\$81,664	\$77,078	\$4,586	N/A
8 Year PPA	23.4 c/kWh	\$81,664	\$69,429	\$12,235	N/A
9 Year PPA	21.4 c/kWh	\$81,664	\$63,511	\$18,153	N/A
10 Year PPA	19.8 c/kWh	\$81,664	\$58,805	\$22,859	N/A
11 Year PPA	18.5 c/kWh	\$81,664	\$54,979	\$26,685	N/A
12 Year PPA	17.5 c/kWh	\$81,664	\$51,814	\$29,850	N/A
13 Year PPA	16.6 c/kWh	\$81,664	\$49,157	\$32,507	N/A
14 Year PPA	15.8 c/kWh	\$81,664	\$46,899	\$34,765	N/A
15 Year PPA	15.2 c/kWh	\$81,664	\$44,959	\$36,705	N/A
16 Year PPA	14.6 c/kWh	\$81,664	\$43,279	\$38,385	N/A
17 Year PPA	14.1 c/kWh	\$81,664	\$41,811	\$39,853	N/A
18 Year PPA	13.7 c/kWh	\$81,664	\$40,521	\$41,143	N/A
19 Year PPA	13.3 c/kWh	\$81,664	\$39,380	\$42,284	N/A

Viewing Assessment Data

At each stage of the assessment flow the user can choose to view assessment data in chart or table format by selecting the blue icons in the bottom left corner of each card.



Download Interval Data

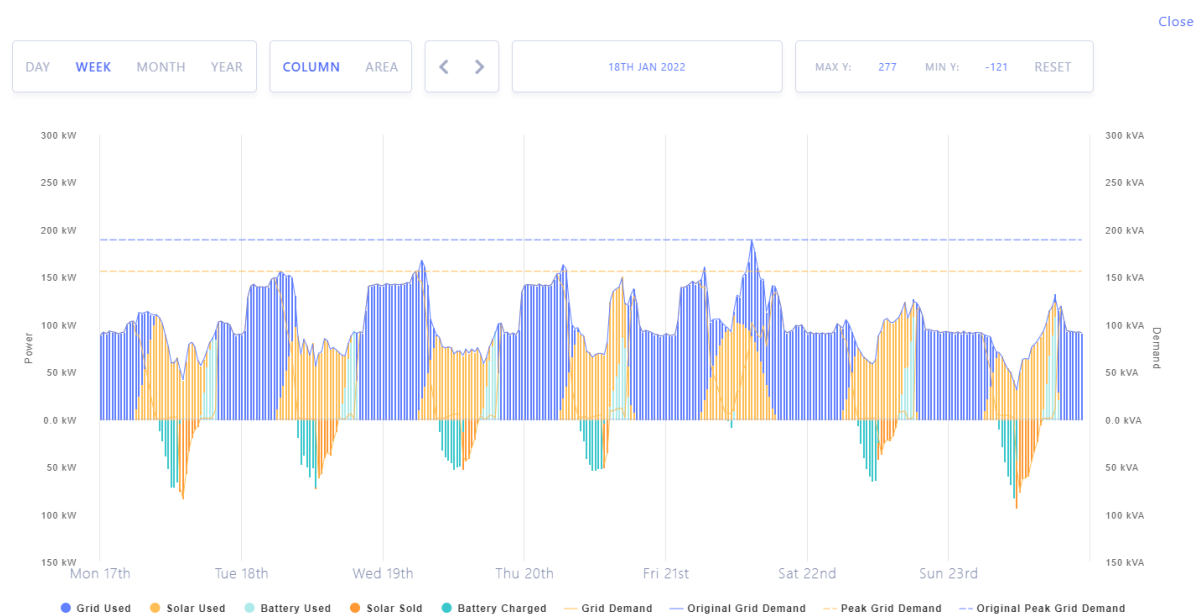


Interval Data Chart



Table Breakdown

Interval Data Chart



Download CSV

Table Breakdown

[Download as CSV](#)

Project Financials	Upfront	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Total
▼ Net Position (\$)	-\$376,600	\$7,073	\$6,218	\$4,262	\$4,795	\$5,192	\$5,205	\$6,906	\$7,076	\$8,119	\$8,893	\$8,796	\$9,129	\$81,664
> Investment & Costs (\$)	-\$376,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
> Savings & Incentives (\$)	\$0	\$7,073	\$6,218	\$4,262	\$4,795	\$5,192	\$5,205	\$6,906	\$7,076	\$8,119	\$8,893	\$8,796	\$9,129	\$81,664

Project Energy Impact	Upfront	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Total
> Solar Produced (kWh)	-	25,768	28,438	20,710	16,412	16,164	17,228	22,215	25,733	28,657	30,368	31,438	33,344	296,475
> Max Demand Reduction (kVA)	-	71	15	25	16	29	21	32	9	42	25	61	43	389
> Other Project Components														
Emissions Reduction (tCO2-e)	-	20	22	16	13	13	14	18	20	23	24	25	26	234

Energy Use & Cost — Current	Upfront	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Total
> Electricity Consumption (KWh)	-	-33,956	-34,200	-21,138	-72,926	-88,414	-109,370	-105,603	-91,909	-90,702	-93,431	-83,507	-76,141	-901,295
> Maximum Demand (kVA)	-	-194	-136	-93	-183	-204	-235	-226	-174	-222	-217	-236	-247	-2,367
> Retail (\$)	-	-\$7,442	-\$7,347	-\$4,481	-\$14,242	-\$17,196	-\$21,200	-\$20,018	-\$16,812	-\$16,147	-\$17,808	-\$15,446	-\$14,226	-\$172,364
> Environmental (\$)	-	-\$238	-\$239	-\$148	-\$510	-\$619	-\$766	-\$739	-\$643	-\$635	-\$654	-\$585	-\$533	-\$6,309
> Network (\$)	-	-\$4,740	-\$3,720	-\$2,442	-\$5,842	-\$6,754	-\$8,038	-\$7,680	-\$6,212	-\$6,932	-\$7,112	-\$7,028	-\$6,976	-\$73,474
> Market (\$)	-	-\$291	-\$318	-\$293	-\$365	-\$375	-\$410	-\$405	-\$380	-\$387	-\$382	-\$378	-\$369	-\$4,353
> Project Cost (\$)	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total (\$)	-	-\$12,710	-\$11,624	-\$7,363	-\$20,959	-\$24,944	-\$30,413	-\$28,842	-\$24,046	-\$24,101	-\$25,955	-\$23,437	-\$22,104	-\$256,501

Create Assessment Report in PDF

Following the detailed assessment flow, the council home page – assessment tab will now be populated with several assessments for the chosen site, as created by the User. Select and open the assessment to be created in pdf format.

Test Council / Assessments

Test Council

Assess Procure Operate

Sites Assessments Recommendations

Export

Columns

Q

Assessment Name ↑	Site Name	Project Status	NMI	Selected Solar Size	Annual Savings	Estimated Cost	Simple Payback	Actions
Assessment User	User Test Office	-	VEEER33200	99 kW	\$43,438	\$81,700	1.9 years	   
Assessment User Clone	User Test Office	-	VEEER33200	200 kW	\$81,664	\$376,600	4.6 years	   
Clone Assessment	Test Head Office	-	VEEE00003938	50 kW	\$9,048	\$122,000	13.5 years	   
Initial Assessment	Test Head Office	-	VEEE00003938	50 kW	\$8,790	\$52,400	6.0 years	   

In the open assessment click the share symbol in the top right hand corner of the screen and select **“Print PDF”**

Test Council / User Test Office / Assessment User Clone


Assessment User Clone

Assess Procure Operate

Site Overview
Solar
Battery
Power Factor
Contract

Review your Site


We've reviewed your sites electricity data and mapped the maximum solar that will fit on your roof to provide the following insights:



Choose System Size

Assessment User Clone

CITY PLAZA 432 PEEL ST, TAMWORTH NS...



Grid Solar Battery

Solar 200 kW

Battery 210 kWh

Power Factor 1.00

Annual Savings \$81,664

Payback 4.6 years

Estimated Cost \$376,600

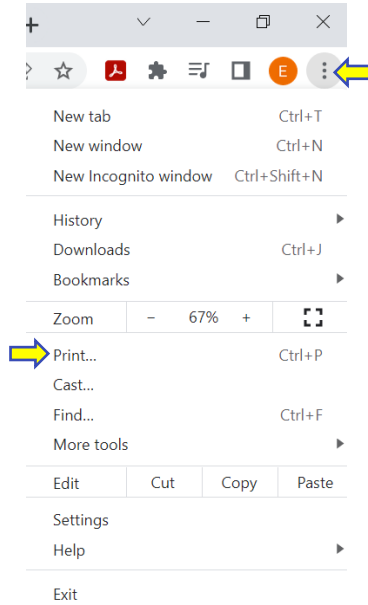
Details

Create Magic Link



Print PDF

The web version of the pdf report will now be displayed in the web browser. To print and save this as pdf select the 3 dots in the browser menu bar in the top right hand corner of the screen (Chrome is used in this example) and click **“Print”**.



The following print settings are recommended when saving to the local drive

- Print all pages
- Layout in landscape
- Expand the More Setting Menu
 - Ensure headers and footers are unchecked
 - Ensure background graphics is checked

Creating a Recommendation & Offer Request

Creating a Recommendation

Following the detailed assessment flow, it is possible to create a recommendation to be added to an Offer Request or to export into Excel table format to include in reports as desired by the User.

Navigate to the **Recommendations** tab from the Council Home page, recommendations can then be added by selecting the “+New Recommendation” button. The purpose of the recommendation tab is to create a list of assessments the User would like to pursue for installation after testing and creating multiple scenarios in the Assessments Tab.

Test Council / Recommendations

Test Council

Assess Procure Operate

Sites Assessment Recommendations

+ New Recommendation Add to Offer Request Export Columns

Site Name	Assessment Name	Solar Size	Battery Size	EV Charger Size	PFC	Contract	Estimated Cost	STC Rebate	VEEC Rebate	LGC	Annual Cost	Annual Savings	Net Annual Savings	Payback	Emissions Reduction	Actions
No Results																

The window below will appear, select the desired assessment in the from the search bar and drop down menu, the select “Add Recommendation” button.

New Recommendation

Select an assessment to use as the basis for the new recommendation

User Test Office | Assessment User Clone

Assessment Name	Assessment User Clone		
Site Name	User Test Office		
Solar Size	200	kW	
Inverter Size	160	kVA	
PFC Size	0	kVAr	
Battery Size	210	kWh	
EV Charger Size	0	kW	
Contract	Outright Purchase		▼

Add Recommendation

The recommendation will now appear in the recommendation tab main window as seen below. Recommendations can be edited and deleted via the Actions menu.



Test Council / Recommendations

Test Council

Assess Procure Operate

Sites Assessments Recommendations

New Recommendation Add to Offer Request Export Columns

Site Name	Assessment Name	Solar Size	Battery Size	EV Charger Size	PFC	Contract	Estimated Cost	STC Rebate	VEEC Rebate	LGC	Annual Cost	Annual Savings	Net Annual Savings	Payback	Emissions Reduction	Actions
User Test Office	Assessment User Clone	200 kW	210 kWh	0 kW	0 kVA	Outright Purchase	\$376,600	\$0	\$0	\$0	\$0	\$81,664	\$81,664	4.6 years	234 tCO ₂	 

Create Offers Request

Once the User is happy with the recommendation and would like to engage suppliers in a quote, select the **"Add to Offer Request"** button. This will send an alert to Beam to review the recommendation prior to supplier submission.



Test Council / Recommendations

Test Council

Assess Procure Operate

Sites Assessments Recommendations

New Recommendation Add to Offer Request Export Columns

Site Name	Assessment Name	Solar Size	Battery Size	EV Charger Size	PFC	Contract	Estimated Cost	STC Rebate	VEEC Rebate	LGC	Annual Cost	Annual Savings	Net Annual Savings	Payback	Emissions Reduction	Actions
User Test Office	Assessment User Clone	200 kW	210 kWh	0 kW	0 kVA	Outright Purchase	\$376,600	\$0	\$0	\$0	\$0	\$81,664	\$81,664	4.6 years	234 tCO ₂	 

Submitting an Offer Request will provide access to the Beam Solar marketplace for trusted solar suppliers where a comprehensive brief for your preferred solar system is generated and registered suppliers are invited to submit initial and final offers. We evaluate all initial and final offers with our best-practice evaluation tools and recommend suppliers for shortlisting.

Add to Offer Request

Add all recommendations to the offer request.

Cancel

Confirm

Note that all recommendations will be added to the request, the User must manage the list and delete options not required.