

**Feasibility Report, Example Client~1MW ground mounted system**

The results below show the predicted return on investment for a solar farm installed at *Example Client* with the following specifications.

**System Specifications**

Panel Type	REC385TP2SM72
Inverter Type	Delta M30A
Configuration	MPPTA 3 x 19 MPPT B: 2 x 19
DC capacity	1.024 MWp (2,660 Modules)
AC Capacity	840 kVA (28 Inverters)

PV Modules are mounted as 2 panels in portrait, tilted at 25 degrees facing due North. Distance from the front of 1 table to the table behind (pitch) is 7.5m.

Meter data for the period 1/10/2019-30/9/2020 was provided however, due to a significant increase in load just before June 2020, the data for June is assumed to be a better representation of the future energy usage for the site, therefore load data in all other months was replaced with data from June. The above system was then simulated to produce data that could be used to calculate the amount of solar that would be consumed on site and resulting maximum demand (kW and kVA) during each month of the year.

The \$ figures are based the following tariff structures

Tariff	Cost of Energy	Maximum demand kW threshold	Maximum demand cost per kW	Maximum demand kVA threshold	Maximum demand cost per kVA
45	\$0.12835/kWh	120 kW	\$22.8448/kW	135 kVA	\$20.5601/kVA
46	\$0.12835/kWh	400 kW	\$18.7374/kW	450 kVA	\$16.8641/kVA

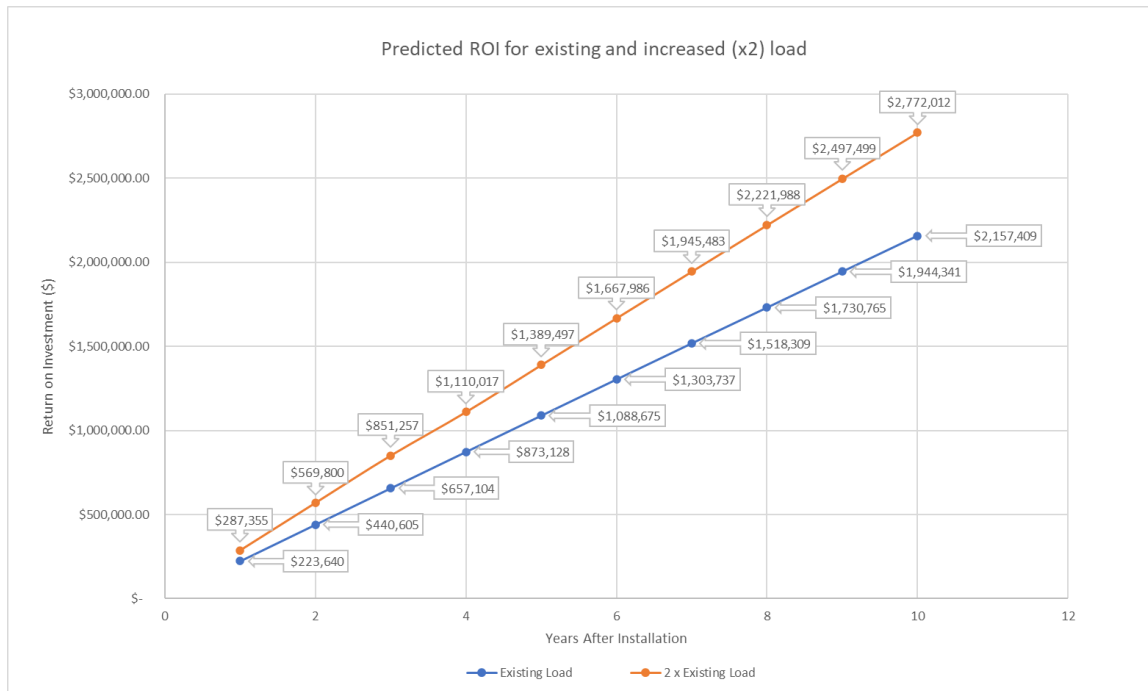
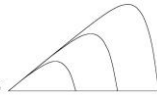
The savings that would come from the system above over a 10 year period are calculated in the table below for scenarios,

- i) With the existing load.
- ii) Where the load is twice the existing load.

For year 1, the system generates 1,754 MWh, the ratio of power generated that is consumed on site to power fed into the grid is,

- For existing load case: 0.81
- For 2 x existing load 0.96, giving the 2 x load case the better ROI.

	Single load			Double load		
	Energy offset		max demand	Energy offset		max demand
	Energy (kWh)	\$	\$	Energy (kWh)	\$	\$
Year 1	1421233.213	182415.3	41224.38597	1684490.428	216204.3	71150.61985
Year 2	1404654.617	180287.4	36678.23185	1647175.126	211414.9	71029.64674
Year 3	1401200.617	179844.1	36654.14867	1639672.409	210452	71005.4521
Year 4	1397700.426	179394.8	36630.06542	1632161.096	209487.9	49272.54615
Year 5	1394160.593	178940.5	36605.98211	1624638.983	208522.4	70957.06278
Year 6	1390576.871	178480.5	36581.89872	1617110.123	207556.1	70932.86811
Year 7	1386943.506	178014.2	36557.81527	1609573.653	206588.8	70908.67344
Year 8	1383272.782	177543.1	34912.96304	1602028.683	205620.4	70884.47875
Year 9	1379554.266	177065.8	36509.64817	1594472.074	204650.5	70860.28406
Year 10	1375786.8	176582.2	36485.56452	1586886.563	203676.9	70836.08936



The chart above takes into account the yearly savings from energy that generated from solar assumed to be consumed on site.

In addition to the assumptions above, the following assumptions have also been made,

- Power not used on site and fed into the grid is assumed not to provide any financial return
- NPV has not been taken into account.
- Maximum demand is based on import only, no fees have been assumed for maximum export.
- Panel degradation of 2.5% in the first year and 0.5% in every year after.
- Maintenance costs have not been taken into account.
- June 2020 is an accurate representation of future load profiles.
- Future weather is similar to past weather in the area.

Maximum demand has been calculated for each month as shown on the bill and the savings accumulated over the year, an example of this is shown below for year 1.

Max Demand for each month	kVA	No Solar			1 MWp with Original Load			1 MWp with 2 x Load				
		\$	kW	\$	kVA	\$	kW	\$	kVA	\$	kW	\$
January	738.5	12454.5	722.2	13532.2	628.5	10599.2	620.4	11624.2	1275.8	21514.6	1271.8	23829.7
February	738.5	12454.5	722.2	13532.2	619.4	10445.3	620.4	11624.2	1266.5	21359.0	1262.5	23656.4
March	738.5	12454.5	722.2	13532.2	633.6	10684.7	620.4	11624.2	1280.9	21600.9	1276.9	23926.0
April	738.5	12454.5	722.2	13532.2	659.2	11117.2	620.4	11624.2	1306.8	22037.4	1302.9	24412.4
May	738.5	12454.5	722.2	13532.2	659.2	11117.2	620.4	11624.2	1306.8	22037.4	1302.9	24412.4
June	738.5	12454.5	722.2	13532.2	659.2	11117.2	620.4	11624.2	1306.8	22037.4	1302.9	24412.4
July	738.5	12454.5	722.2	13532.2	659.2	11117.2	620.4	11624.2	1306.8	22037.4	1302.9	24412.4
August	738.5	12454.5	722.2	13532.2	659.2	11117.2	620.4	11624.2	1306.8	22037.4	1302.9	24412.4
September	738.5	12454.5	722.2	13532.2	659.2	11117.2	620.4	11624.2	1306.8	22037.4	1302.9	24412.4
October	738.5	12454.5	722.2	13532.2	654.5	11037.4	620.4	11624.2	1302.0	21956.9	1298.1	24322.7
November	738.5	12454.5	722.2	13532.2	644.9	10875.4	620.4	11624.2	1292.3	21793.4	1288.4	24140.5
December	738.5	12454.5	722.2	13532.2	639.2	10779.7	620.4	11624.2	1286.6	21696.8	1282.6	24032.9
<b>Total</b>		<b>\$ 149,453.76</b>		<b>\$ 162,385.80</b>		<b>\$ 131,124.94</b>		<b>\$ 139,490.24</b>		<b>\$ 262,146.02</b>		<b>\$ 290,382.48</b>
<b>Saving p.a.</b>								<b>\$ 41,224.39</b>				<b>\$ 71,150.62</b>