



Westmill PV Plant Asset Management - Report Addendum

Q3 2016 - July, August, September

Westmill Solar Co-op Ltd.

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Contents

1	Introduction.....	4
2	Plant Performance Analysis.....	5
2.1	Performance Ratio	5

1 Introduction

This summary reviews the measured Performance Ratio (PR) as an additional section for the Quarter 3 ('the Quarter' or 'Q3') report that was submitted in October 2016 for the period July, August, and September following a review of the calculation methodology that was incomplete at the time of the report submission.

Addendum summary

Actual PRs are calculated from the electrical energy generated relative to the amount of irradiation and the DC rating of the plant, as described in IEC 61724-1. OST has therefore used the onsite in plane-of-array pyranometer irradiation data as well as metered generation for the Quarter taken from the Export Meter generation figures provided by Good Energy.

The expected PRs are calculated using a methodology presented to Westmill in the Technical Due Diligence report submitted in August 2012. In order to update these expected PR figures from 1st year of operation, an annual linear degradation of 0.4% is applied to the PR. It is noted that the degradation rate stipulated in the O&M Contract is 0.3%. The data has been reviewed and rechecked against the generation figures available to ensure the effectiveness of the methodology and is presented in Section 2 below.

2 Plant Performance Analysis

In this addendum section, OST has analysed PR data presented with analysis and comments.

2.1 Performance Ratio

The following Table 1, Table 2, Figure 1 and Figure 2 show the plant PR including and excluding plant downtimes respectively.

The PR figure “Actual PR excl. downtimes (%)” takes into account the calculated plant availability which is described below and illustrated in Table 5. PRs have been verified using actual plant irradiation and generation for the Quarter taken from the Export Meter.

The OST expected PR is calculated using a methodology presented to Westmill in the Technical Due Diligence report submitted in August 2012. OST notes that the degradation rate stipulated in the O&M Contract is 0.3%. However, following a review, it is considered a linear degradation rate of 0.4%/yr. to be an appropriate assumption for inclusion in the project financial model.

In addition, the OST expected PR assumes an availability of 100% for the purposes of comparison to the actual PR respectively, including and excluding downtimes, as shown in the tables below.

Table 1: PR analysis including downtimes

Month	OST expected PR (%)	PR guaranteed (%)	Actual PR incl. downtimes (%)	Delta actual to OST expected (%)
Jul	78.7%	78.0%	82.2%	4.4%
Aug	78.4%	77.7%	81.0%	3.3%
Sep	79.4%	77.7%	81.6%	2.7%
Q3 2016 Total	78.8%	-	81.6%	3.5%
Q3 2015 Total	79.1%	-	85.3%	7.7%

Figure 1: PR analysis including downtimes

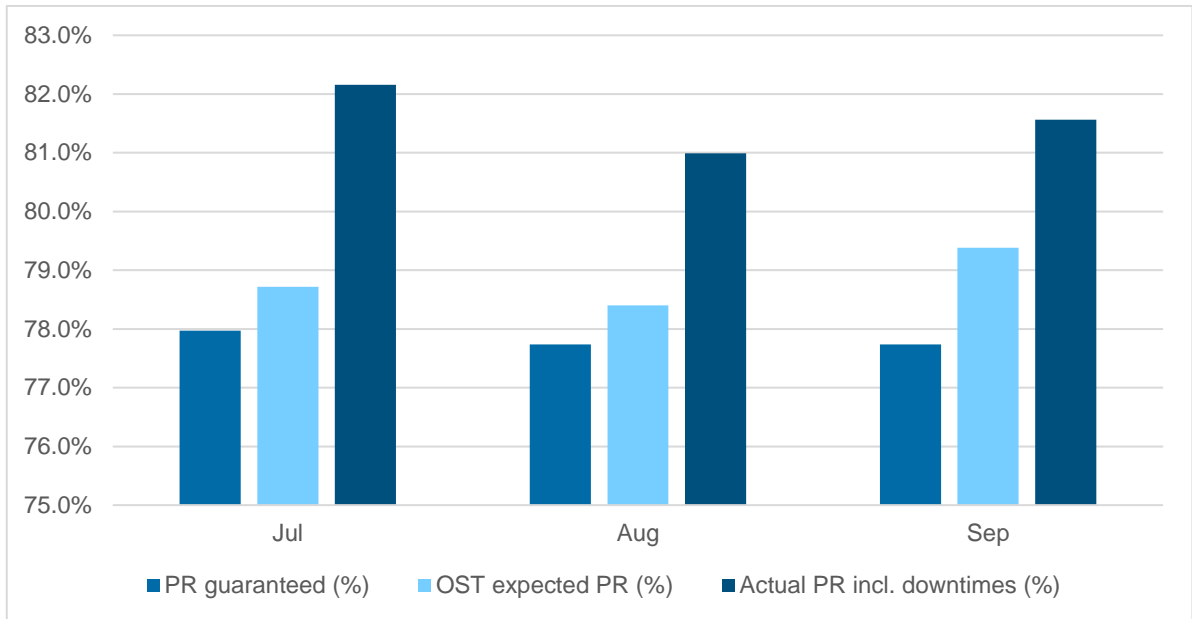
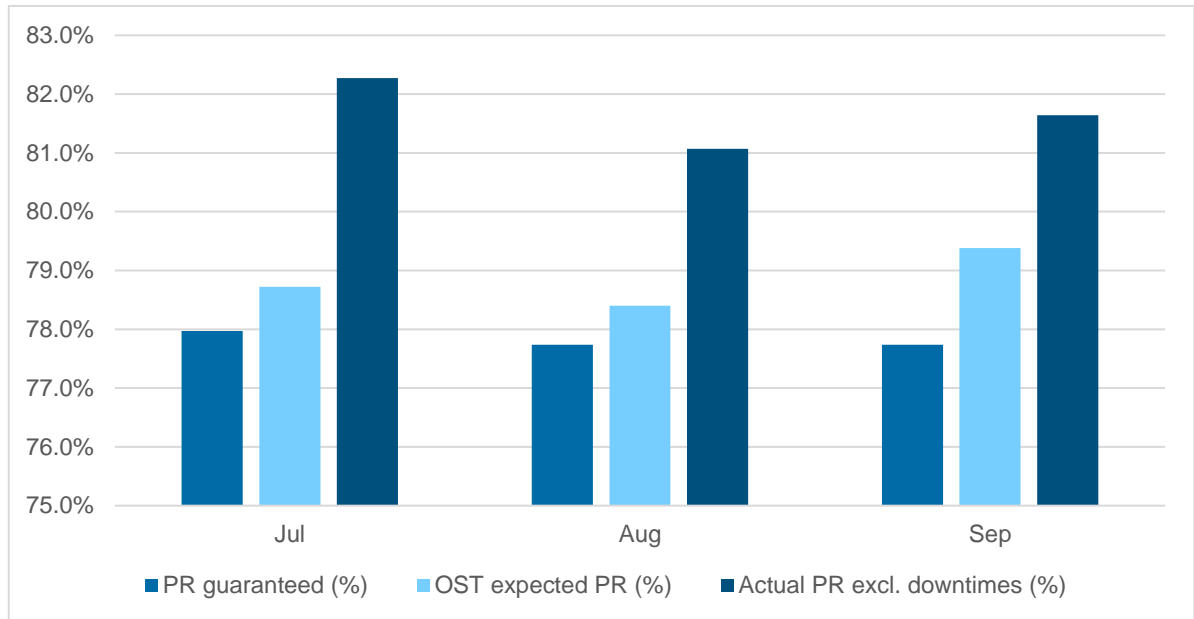


Table 2: PR analysis excluding downtimes

Month	OST expected PR (%)	PR guaranteed (%)	Actual PR excl. downtimes (%)	Delta actual to OST expected (%)
Jul	78.7%	78.0%	82.3%	4.5%
Aug	78.4%	77.7%	81.1%	3.4%
Sep	79.4%	77.7%	81.6%	2.8%
Q3 2016 Total	78.8%	-	81.7%	3.6%
Q3 2015 Total	79.1%	-	85.6%	8.2%

Figure 2: PR analysis excluding downtimes



Considering both PRs including and excluding downtimes, actual plant performance has exceeded both the guaranteed and OST's expected PRs for each month during the Quarter.

Overall, the PR including and excluding downtimes for the Quarter are both lower than the same Quarter in 2015. This reflects the expected module degradation as well as indicates higher PV system losses due to the irradiation in the Quarter, and ultimately generation, being higher than those observed for the same Quarter in 2015.

Target and actual availability is shown in Table 5 below.

Table 5: Target and actual availability

Month	Target availability (%)	Actual availability (%)	Difference (%)
Jul	99.0%	99.9%	0.9%
Aug	99.0%	99.9%	0.9%
Sep	99.0%	99.9%	0.9%
Q3 2016 Total	99.0%	99.9%	0.9%
Q3 2015 Total	99.0%	99.6%	0.6%

Actual availability during the three months period and overall for the Quarter was 99.9% which is above the target and in line with expectations for a well maintained plant.

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