



ASSET MANAGEMENT  
CASE STUDY  
CALIFORNIA CENTRAL VALLEY

Portfolio  
Specifications



SIZE DC:	30+ MW
CONFIGURATION:	HORIZONTAL TRACKER
INVERTERS:	SMA
OWNER:	(name withheld)
LOCATION:	CALIFORNIA CENTRAL VALLEY



## ASSET OPERATIONS: WEATHER ADJUSTED PRODUCTION & AVAILABILITY

### IN HOUSE TEAM

Month	Availability	Actual Yield (kWh/kW)	Expected Yield (kWh/kW)	Variance
Apr	100%	232	236	-2.1%
May	99%	234	250	-6.5%
Jun	96%	240	245	-2.3%
Jul	100%	261	267	-2.2%
Aug	100%	229	251	-9.7%
Sep	96%	181	201	-10.9%
Oct	100%	152	164	-7.7%
Nov	100%	89	97	-9.4%
Dec	100%	102	104	-2.2%
Jan	100%	101	106	-4.9%
Feb	100%	98	102	-4.5%
Mar	100%	168	173	-2.8%
<b>Average: 99.16%</b>		<b>2086</b>	<b>2195</b>	<b>-5.2%</b>

### RADIAN TEAM (following year)

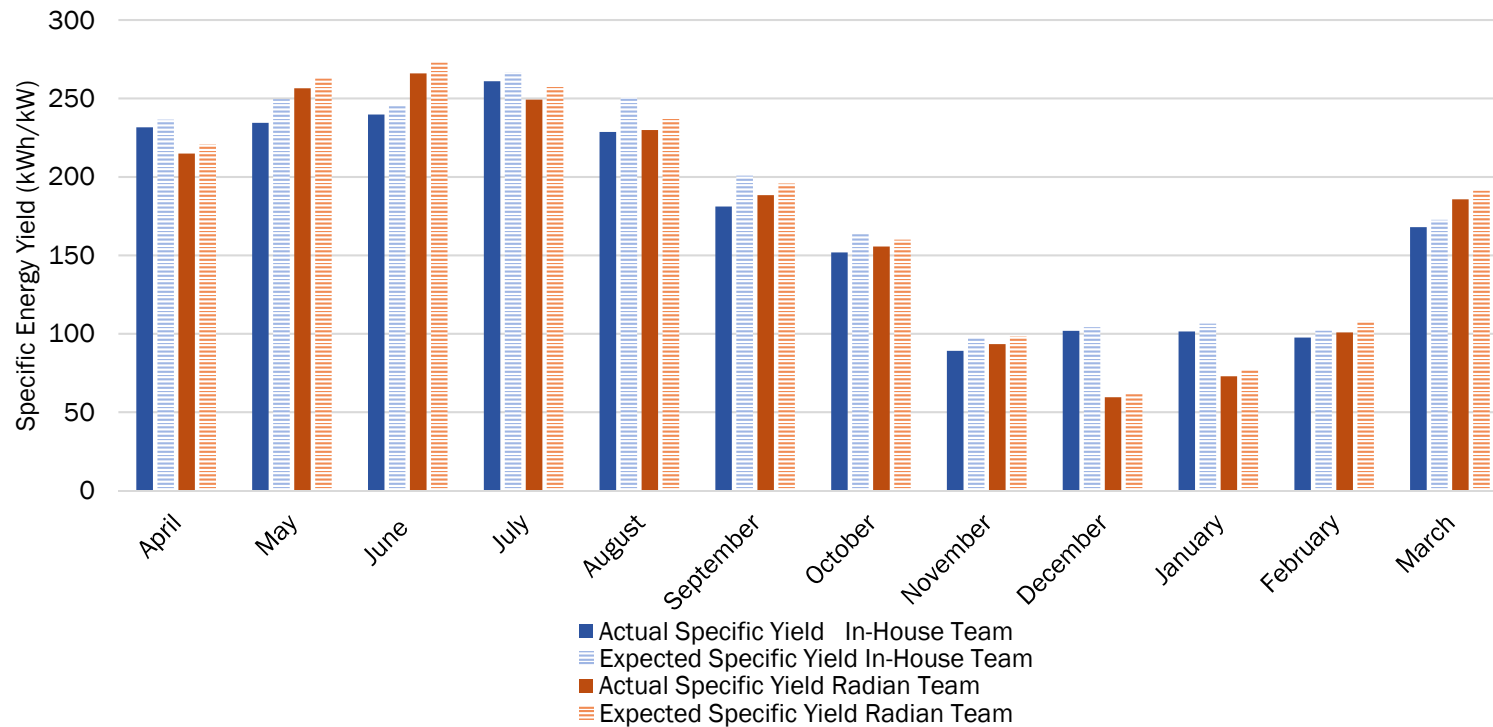
Month	Availability	Actual Yield (kWh/kW)	Expected Yield (kWh/kW)	Variance
Apr	100%	215	221	-2.7%
May	100%	257	263	-2.5%
Jun	100%	266	273	-2.6%
Jul	100%	249	258	-3.4%
Aug	100%	230	238	-3.4%
Sep	100%	188	196	-4.0%
Oct	100%	156	160	-2.8%
Nov	100%	93	98	-5.2%
Dec	100%	60	62	-3.4%
Jan	100%	73	77	-6.1%
Feb	100%	101	108	-7.3%
Mar	100%	186	191	-3.0%
<b>Average: 100%</b>		<b>2073</b>	<b>2144</b>	<b>-3.4%</b>

### Radian Results:

- + 1.8% more productive
- + 1,168,000 kWh Additional Energy
- + \$175,000 Additional Revenues



## ASSET OPERATIONS: WEATHER ADJUSTED PRODUCTION



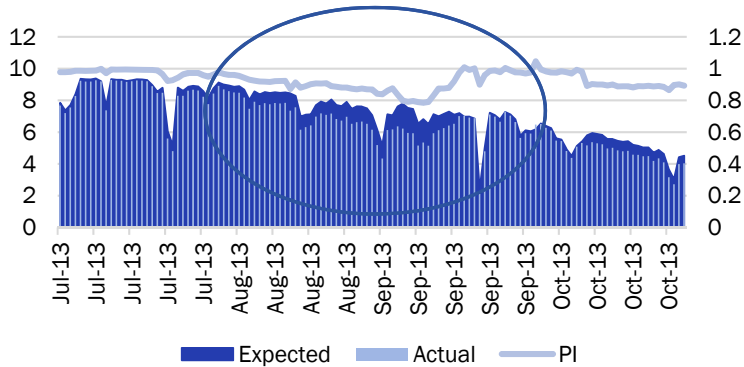
Radian consistently bridged the gap in variance between the actual and the expected specific yield. Understanding this variance, production trending, and analysis thereof allowed the Radian team to identify performance issues not inherently obvious in O&M availability reporting.



## ASSET OPERATIONS: UNDERSTANDING & MANAGING SOILING

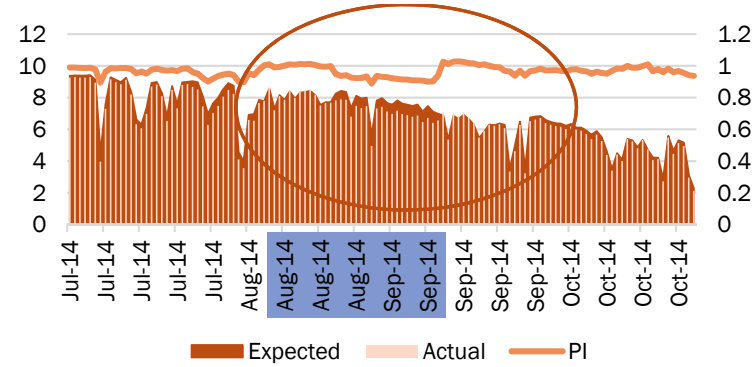
### IN HOUSE TEAM

Month	Actual Yield (kWh/kW)	Expected Yield (kWh/kW)	Variance
Aug	229	251	-9.7%
Sep	181	201	-10.9%
Oct	152	164	-7.7%
<b>AVERAGE VARIANCE</b>			<b>-9.43%</b>



### RADIAN TEAM (following year)

Month	Actual Yield (kWh/kW)	Expected Yield (kWh/kW)	Variance
Aug	230	238	-3.4%
Sep	188	196	-4.0%
Oct	156	160	-2.8%
<b>AVERAGE VARIANCE</b>			<b>-3.4%</b>



Radian performed two washings (once in early August and once in mid-September). These washings directly attributed to bridging the gap between actual and expected yield and mitigated soiling losses.



## ASSET CONTRACTS: PERFORMANCE GUARANTEE



O&M provider requested 50% share of over-performance revenue. Radian's close analysis of assumptions saved the owner **\$85,000**

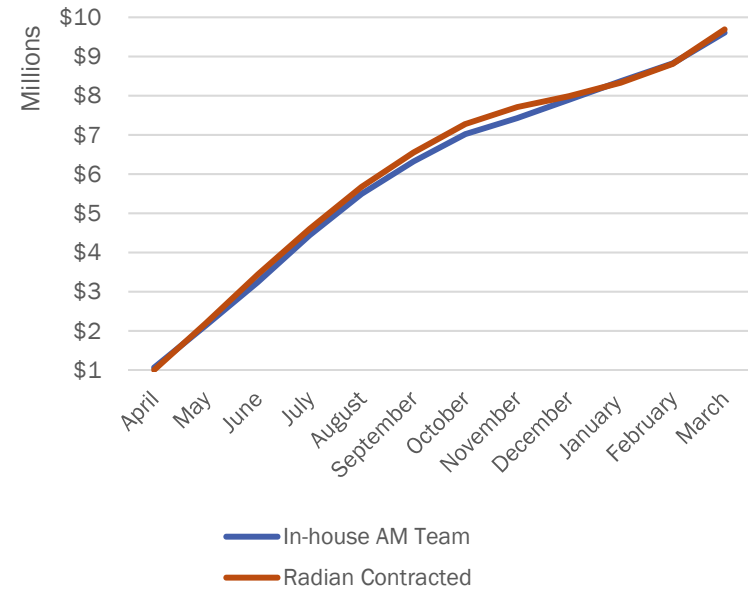
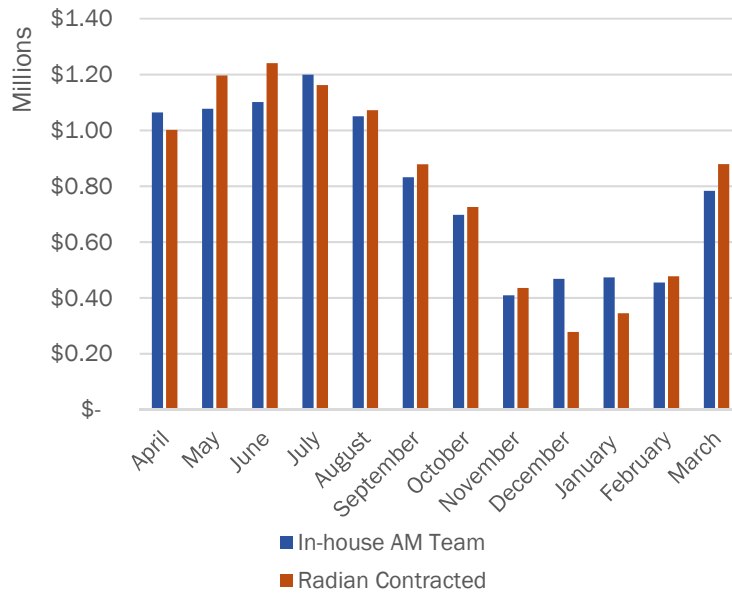
ORIGINAL O&M CLAIM:	\$120,000
FINAL AMOUNT PAID TO O&M:	\$35,000
<b>SAVINGS:</b>	<b>\$85,000</b>

Radian identified 2 issues with the requested payment assumptions:

- O&M used sum of inverter output instead of the revenue-grade meter
- O&M's calculation of system losses deviated from contractually-agreed formulae



## ASSET FINANCES: REVENUE



<b>Δ Production Variance</b>	<b>Added kWh</b>	<b>Added Revenue</b>
<b>+1.8%</b>	<b>1,168,000+</b>	<b>\$175,000</b>



## THE RADIAN SOLUTION

Radian's expertise & services target the three pillars of asset management.

**TOTAL SAVINGS:**  
**\$261,921**



### ASSET OPERATIONS

+1.8% production,  
+1,168,000 kWh,  
100% availability



### CONTRACT COMPLIANCE

Contractual Savings  
\$87,635



### FINANCIAL MANAGEMENT

Additional Revenue  
\$174,286