AMMP

Reducing the cost of operations and maintenance for remote off-grid energy systems

The impact of remote monitoring

Topics and Methodology

- The paper explores the benefits of remote monitoring for off-grid energy systems, with a focus on reducing the cost of operations and maintenance (O&M)
- Impact analysis is done on the basis of real-world operation of a portfolio of PV-hybrid mini-grid systems in rural Tanzania
- The paper evaluates both the impact of basic monitoring (e.g. many of the bundled vendor solutions), and that of more advanced monitoring solutions

Key Findings

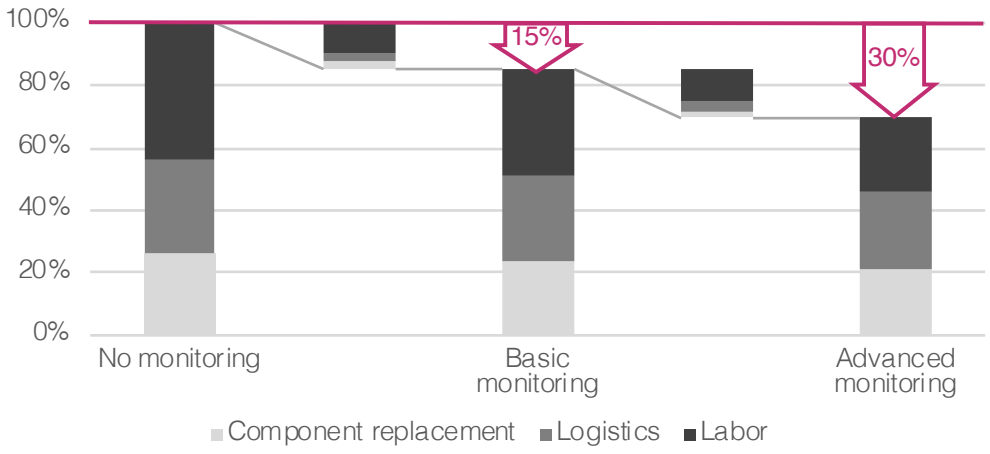
The analysis shows that monitoring, data access, and data analytics impact every major O&M cost driver. Basic and, even more so, advanced monitoring solutions can reduce:

- frequency of component replacements
- # of technical site trips
- time for issue detection and troubleshooting

Cost saving vs baseline	Component replacement	Logistics	Labor
Basic	-9.3%	-8.8%	-22.6%
Advanced	-18.7%	-17.8%	-46.1%

Overall Impact of Remote Monitoring on O&M Costs

The analysis indicates that even basic monitoring solutions can lead to a roughly 15% overall cost saving, while more advanced solutions can reduce the O&M costs by ~30%, with respect to a baseline where no remote monitoring is in place.



Download the full paper at
https://www.ammp.io/remote-monitoring-cost-reduction/