

about 14 kWh on June 20 based on the solar radiation and PV modules' temperature. Thus the energy loss caused by the shading effect was about 1.4 kWh for the Shell's PV modules, which is accounted for 10% of the ideal energy output. These results agree well with the I-V testing results which were mentioned above. The energy loss for the Solgro's PV modules was about 3.5 kWh, which is account for 25% of the ideal energy output. This energy loss was mainly caused by the both effects of edge-shading and pillar-shading, as well as the PV modules' performance degradation.

In a word, it can be concluded that the main reasons causing the energy loss of the PV system are the shading problems. If the edge-shading and pillar-shading problems are solved, the annual energy output of the PV system could increase about 20%-24%.

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7. References

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