

control method verifies that the proportional load power sharing is well achieved regardless of the load variation.

6. Conclusion

In this study, a centralized control method was developed by inserting the shifted voltage into the local voltage control loop. The shifted voltage is adaptively adjusted by using the feedback power sharing error for output voltage regulation. By using the proposed shifted voltage technique, the voltage drop caused by the droop controller was effectively compensated to obtain proportional and accurate load power sharing. Despite doubling the load power, the proposed control method retains the correct power sharing without output voltage degradation.

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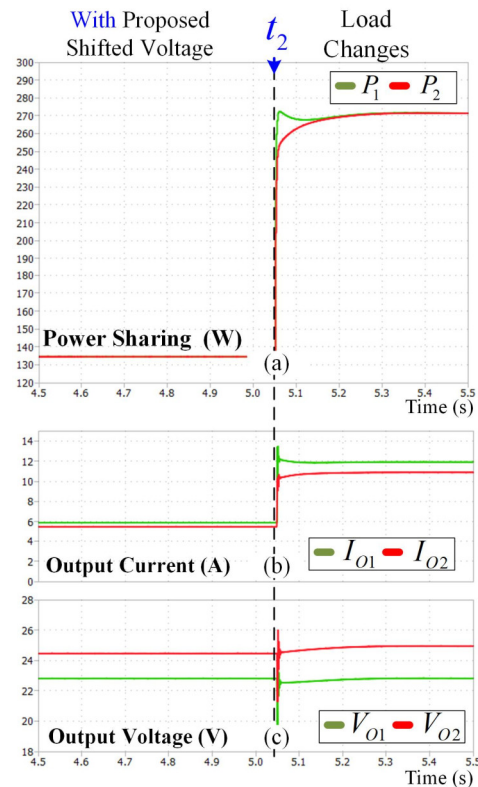


Fig. 8 Performance of the microgrid with the proposed shifted voltage during load changes. (a) power sharing (b) RES output current (c) output voltage.