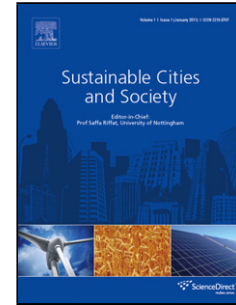


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## **A novel method for optimal placement of vehicle-to-grid charging stations in distribution power system using a quantum binary lightning search algorithm**

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### Highlights

- >we proposed novel algorithm for optimal placement of EV charging stations.
- >the optimization is based on power system loading and quality.
- >results are compared with other optimization algorithm.
- >the impact of EV charging stations on power system is also studied.

### **Abstract**

Vehicle-to-Grid (V2G) technology is currently used in plug-in hybrid electric vehicles (PHEV) during the discharging mode. This technology has become a considerable mechanism to provide a backup power source for distribution networks. In the meanwhile, these vehicles need Charging Stations (CSs) to receive power from the grid. Therefore, determining the optimal CS placement in the distribution network to utilize the V2G technology of PHEV

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