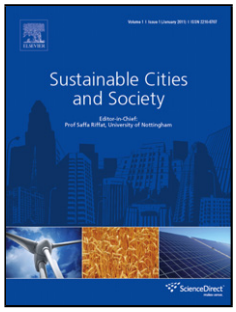

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Power Distribution System Improvement Planning under Hurricanes Based on a New Resilience Index

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Highlights

- A new resilience index based on social welfare is proposed. The resilient distribution system planning problem and restoration problem are solved in such a way that decreases the dependency of operation of water network to power network failures and the aim is that most of the loads access to power and water rapidly after natural disasters.
- For accurately investigating water network operation, the water network is modeled in EPANET.
- An innovative approach is proposed for restoration of distribution systems.
- Multiple strategies which are appropriate for resilience improvement are implemented.
- The duration time of studying the distribution system after outages is until the full recovery of the system.