

Where's the Juice?

Tom Schumacher, Housing and Safety Signals Team

How do you keep the lights on during the next big power outage? The answer might be right in your refrigerator.

Factors converging in the direction of distributed energy storage might one day make your home more energy resilient. **Batteries** are taking centerstage in this transition, and advances in battery technology are making the scenario more feasible.

At the top end are large scale battery packs like the Tesla Powerwall, introduced in 2015 as a component of a solar panel system, providing backup power when the sun doesn't shine or in other times of need. Tesla shares this space with other companies like Geneverse, which also makes portable units that can be placed wherever power is needed at home and away.

In the future we can expect to find batteries embedded in major appliances like dryers, water heaters, refrigerators, freezers and cooking ranges. As battery costs come down, it's possible to imagine backup power reserves in smaller appliances such as computers, home network devices, furnaces and sump pumps. Collectively, these devices could form the backbone of a whole-house battery backup system that manages power during an outage and keeps the lights on while repairs are being made.

The next big cost breakthrough in battery technology might come in the form of solid-state sodium ion batteries, where plentiful sodium takes the place of the lithium used in electric vehicles and most rechargeable systems today. I encourage you to learn more about this possible new energy source:

- [Are Battery-Powered Home Appliances in Our Future?](#) Heidi Mitchell, Wall Street Journal
- [Discovery brings all-solid-state sodium batteries closer to Practical Use](#) Osaka Metropolitan University
- [Tesla Powerwall](#)
- [Geneverse PowerPillar](#)