

Is Your City or County Prepared for Future Fuel Shortages and Power Outages?

by Mark Jeantheau

"Fuel shortages? Dude, what are you talking about? You must be flashing back three decades to the Arab embargo or something."

Nope, we're flashing forward. Fuel shortages are not mere artifacts of history—a number of factors make them increasingly likely in the future. Serious electrical outages are common now, and they too may become more frequent. Such problems impact businesses' ability to keep their stores open, factories' ability to continue producing, and citizens' ability to get around, keep food refrigerated, and maybe even stay warm.

But energy emergencies also have the potential to impair some things that may not be obvious at first:

- the mobility of police, fire-fighting crews, and other emergency personnel;
- the functioning of non-energy utilities like water and sewer;
- even the availability of food in local grocery stores.

This article provides a quick overview of the risks of energy emergencies and outlines what you should be expecting your city, town, or county to do to be prepared for future fuel shortages and power outages.

ENERGY EMERGENCIES — 1970s TO TODAY

The major disruptions in diesel and gasoline supplies that occurred during the oil crises of the 1970s are a distant memory. However, fuel shortages, even complete outages, have occurred in the US much more recently. Following Hurricane Katrina in 2005, as regional pipelines were shut down, towns as far from the bayou as North Carolina were left without gasoline. Municipalities seeking emergency rations from fuel stockpiles maintained

FACTORS IN FUTURE FUEL SHORTAGES

The three main risk factors for fuel shortages are:

1. Peaking Oil Supplies --- Oil producers have not been able to significantly increase output since 2005, despite a period of historically high prices. If demand once again outstrips supply, new price spikes and shortages are likely.
2. Insufficient Investment --- The financial crisis has taken its toll on consumer spending and industrial activity, depressing demand for oil slightly and easing pressure on oil prices. But the crisis has taken an even greater toll on investment in new energy projects, including new oil-drilling projects. It's likely that this investment pullback, combined with the natural depletion of oil production from existing wells, will combine to produce fuel shortages sometime in the next few years.
3. Dollar Crisis --- With the US Treasury and the big-bank-owned Federal Reserve creating new money at a feverish pace, there is a risk that the US dollar will get devalued. This could wreak havoc with imports, including the 2/3 of US oil that comes from abroad.

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by state governments were generally turned down—the state stockpiles were never sized to also handle municipalities' requirements.

Nationwide, electrical outages are more common (at least for now). On the afternoon of August 14, 2003, disruption of an electricity transmission line near Cleveland, Ohio (caused in part by a falling branch) took only seven minutes to spread through the interconnected transmission grid throughout most of the northeastern United States and southeastern Canada. More than 50 million people were affected by the blackout, and some were without electricity for up to three weeks.

In early 2009 in Grinning Planet's home state of Kentucky, the governor declared a state of emergency as ice storms took down power lines in much of the state, leaving many homes and businesses without electricity for a week, some for even longer. The emergency also made clear the interrelationship between energy and other critical services—within 24 hours, some area residents were being told to boil their water because the water treatment plant was unable to fully treat drinking water during the power outage. (If you have an electric stove, a good question to ask yourself is: How would I boil water during a power outage?)

Such overlapping, self-reinforcing disruptions will likely be more of a problem in the future. For instance, if Kentucky had already been experiencing a fuel shortage when the ice storm hit, crews trying to clear trees and repair downed power lines would have struggled even more without full availability of their equipment.

We are all highly dependent on regional, national, and even global energy supply networks, leaving us vulnerable to a variety of supply disruptions that may originate at some distance from where we live. The chance of such disruptions will increase in the future, as supplies of oil, natural gas and even coal become increasingly tight due to slowing—and ultimately peaking—global energy production. Electric-power experts are also voicing increasing concern about the reliability of the aging US grid.

There are a number of actions cities, towns, and counties can take ahead of future disruptions to enable them to keep essential services operational. Such must-have services include police and fire protection; emergency medical services and hospitals; pumping and treatment of water and sewage; and operation of key municipal buildings.

WHY IS THE GRID SO FRAGILE?

One word: deregulation. Two decades ago, free-marketeers told us that government should get out of the utility business and let the free market work its magic to make electric power generation as efficient as possible. Congress listened, and the power markets were deregulated.

The primary result was that energy companies—Enron being the most notorious—figured out how to efficiently increase their profits. At the same time, the newly independent electric power industry began failing to continue properly investing in grid upgrades that would keep pace with increasing electricity demand and changing generation/usage patterns. Profit trumped reliability. Today, the grid is being pushed to its limits, is prone to outages, and is far behind the state-of-the-art.

ISSUES, SOLUTIONS, ACTIONS

A good goal for any municipality is to reduce its overall use of energy and add substantial amounts of local generation capacity based primarily on renewable energy sources. Both of these measures will help reduce the impact of future fuel and electricity constrictions. But going "off-grid" is nearly impossible for a municipality in any timeframe that makes sense, so it's still smart for municipalities to be prepared for an increase in unexpected energy constraints or cut-offs. Plans for maintaining essential services should be reviewed and strengthened in light of the darkening energy picture.

All municipalities have some level of emergency preparedness already in place. However, such plans invariably are oriented towards rare, short-term disruptions that are not widespread. Below we present a quick checklist of things city and county managers should be doing to better gird against future fuel shortages and power outages.

a. **OFFICIAL PLANS:** Each municipal department should have a recent assessment of how fuel or electricity disruptions of various severity would impact operations, determine areas of unacceptable risk, and propose methods for mitigation of the risks. Lack of fuel and electricity to run essential vehicles and buildings would be the main focus of such an assessment, but it would also be worth examining how such disruptions would impact the ability of employees to get to work. Each department's results should be published as a formal fuel/electricity disruption plan. The plans—and any requests for budget items needed to achieve the appropriate level of risk mitigation—should be presented to the appropriate elected officials.

b. **BACKUP POWER:** Some municipalities already have backup electrical generation capacity at key facilities. Those that don't should consider this a top priority. A number of different types of backup-power solutions are available, but the most usual one, the diesel generator, may itself prove to be unreliable in the future if simultaneous fuel shortages and power outages become more common.

c. **FUEL DEPOT:** Similarly, some municipalities already have dedicated fuel depots where city vehicles tank up. For those that do, an assessment should be done to ensure that the reserve capacity of the depot would be enough to keep police cars, fire engines, ambulances, and utility repair equipment operational during an extended fuel outage. For those that don't—well, another top priority! Longer term, as equipment is replaced, there should be a strong focus on vehicles with better mileage, including hybrids and electric vehicles.

Municipalities should also develop priority list for who gets fuel first (and how much) during a fuel disruption. This list would apply primarily to rations from the fuel depot but could also apply to fuel from retail gas stations. Finally, the municipality should define and make public the criteria it will use to declare a fuel emergency. A multi-level approach based on the severity of the problem would likely add flexibility.

d. FOOD: As a result of today's "just in time" inventory systems, supermarkets are said to have approximately 3 days worth of food on their shelves at any given time. A week-long transportation fuel outage would likely create food shortages. Increasing the amount of home gardening, farmers market traffic, and other sources of local food production will all be helpful in mitigating the impact of future food outages.

Some Peak Oil-aware communities in non-grain-producing areas are exploring the possibility of creating local granaries, but a municipally maintained food larder sufficient to mitigate against even a short-term disruption in the food supply is likely to be impractical for many towns or counties. That said, it would be worthwhile to include fuel-disruption-based food shortages in other analyses, especially those related to the potential for increased crime and more requests for emergency medical services.

More broadly, the municipality should consider making public recommendations that citizens be more prepared with respect to their own food stocks. One approach to this would be for the city/county to publish and mass-distribute a "food security" pamphlet (or perhaps a more general "emergency preparedness" pamphlet that has an emphasis on maintaining adequate stores of non-perishable food).

e. COMMUNICATING PLANS: In general, discussing with the community the emergency preparedness measures the city/county is taking—and those that it may implement in an emergency—will help ensure that any actions taken will seem wise and foresighted rather than alarmist and authoritarian. Spurring citizens towards better self-preparedness will help reduce the pressure on city/county response teams during an emergency. Establishing a Community Outreach committee may be a useful approach to getting suggestions, feedback, and buy-in from the public regarding municipal energy-emergency plans.

f. GOVERNMENT-TO-GOVERNMENT COOPERATION: There are likely a number of areas where partnering and coordination between regional cities, towns, and counties can reduce the cost and increase the effectiveness of area plans for energy emergencies.

g. REVIEW EXISTING ORDINANCES: After municipal departments have completed their fuel/electricity disruption plans, all relevant ordinances and laws should be reviewed to ensure that they are up-to-date and adequate in the event of an energy emergency.

Fuel Shortages and Power Outages

WRAP-UP

There is some cost inefficiency associated with a city, town, or county being prepared for energy-emergency scenarios that may never happen. But there is public-safety risk in preparing insufficiently. Finding the correct balance is essential. With future energy availability looking more volatile, now is a good time for reevaluation and adjustment.

Citizens may be tempted to think "I'm sure 'they' are already thinking about this stuff and have it under control." That would be a bad assumption. Politicians are prone to hyper-

optimism when it comes to the economy and energy supplies. (If they weren't, the US would already have rational energy and economic policies!) It will take grassroots pressure to get city and county leaders to reevaluate their preparedness and correct deficiencies.

Feel free to send this article electronically or on paper to your elected officials or local municipal manager.

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Additional resource: The report of the Sebastopol Ad Hoc Citizens Advisory Group on Energy Vulnerability — available at <http://postcarboncities.net/node/134> — provides an in-depth model for assessing municipal energy vulnerabilities and a set of recommendations for addressing them.

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