

POLICY FOCUS

EMP Threats and Disaster Preparedness

RECIPES FOR RATIONAL GOVERNMENT FROM THE INDEPENDENT WOMEN'S FORUM

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WHAT YOU NEED TO KNOW

EMPs (electromagnetic pulses) are created by natural or man-made causes, such as a terrorist attack. An EMP has the potential to critically damage our electrical grid and catastrophically disrupt communications, transportation, emergency services, and food and water supplies, possibly resulting in the loss of millions of human lives.

Most presume that the odds of an EMP must be highly unlikely, so there is no cause for concern. Yet analyses show that EMP is not an idle threat. We face two very real and serious possibilities: a solar flare event or a nuclear EMP attack. Indeed, experts say there is a **12-percent likelihood** of a solar superstorm happening in the next decade, and reports indicate that a nuclear EMP attack by a potential adversary is within the realm of possibility.

In 2004 and 2008, reports from the Congressionally-mandated EMP Commission urged that immediate action be taken to harden our electrical grid against EMP attacks. Despite this warning, however, the federal government has done little to address this threat and enhance EMP preparedness. Although certain tasks have been assigned, the Commission's recommendations have not yet been carried out.

Inaction is both unwise and unacceptable. Among government's core duties is to protect and defend our nation from significant security threats. Policymakers need to acknowledge EMP as a real concern and take meaningful steps towards preparedness, like securing the civilian electric grid.

WHY YOU SHOULD CARE

Our federal government exists to keep us safe. Yet Washington is failing to fulfill this core function by not protecting us against EMPs:

- **EMPs Could Create Catastrophic Damage:**

An EMP event could critically damage our electrical grid, communications, transportation, emergency services, and food and water supplies. In the worst-case scenario, up to 90 percent of the U.S. population could die within a year of a major EMP event.

- **EMP Is No Idle Threat:** Many presume that an EMP event is extremely unlikely to occur. However, the truth is that we face two very real threats: a solar flare event and a nuclear EMP attack. In fact, there is **12-percent likelihood** of a solar superstorm happening by 2022, and we know that rogue nations have considered EMP as a means of attack in the past.

- **Government Can Help Mitigate These Outcomes:** Protective equipment for the civilian grid is available and can be installed to prevent worst-case scenarios from occurring. Unfortunately, the departments of Homeland Security and Energy have failed to take any meaningful steps towards securing the grid.

The federal government should prioritize preparing for significant threats like this one, and take timely action.

MORE INFORMATION

EMPs' Potential Devastation

For decades now, it has been well known by our government that EMPs—pulses of electromagnetic energy created by natural or manmade causes, such as a terrorist attack—pose an existential threat to our society. Yet, very little has been done to address this threat and preparatory measures are still not underway.

EMPs have the potential to critically damage our electrical grid and catastrophically disrupt communications, transportation, emergency services, banking, and food and water supplies, virtually destroying the world we live in today. This would limit, or even completely cut off, our access to telephones, clean water, ATMs, automobiles, and so on.

As our reliance on technology has increased, so too has our vulnerability to an EMP and a long-term power outage. A prolonged, widespread power outage could have grave consequences. For instance, according to the 2013 **Lloyd's of London report**, a major EMP event has the potential to cause extended blackouts for 20-40 million Americans at a total economic cost of \$600 billion to \$2.6 trillion.

But that's not all—lives are at stake. This is how the EMP Commission—a special commission of experts created by Congress to study EMP and to identify ways to mitigate the risk—**summed** up the crippling nature of EMPs in its 2008 report:

“Should significant parts of the electrical power infrastructure be lost for any substantial period of time, the Commission believes that the consequences are likely to be catastrophic, and many people may ultimately die for lack of the basic elements necessary to sustain life in dense urban and suburban communities.”

According to Dr. Peter Vincent Pry, the executive director of the Task Force on National and Homeland Security, EMPs pose “existential threats that could kill 9 of 10 Americans through starvation, disease, and societal collapse.” In other words, given the current state of unpreparedness, an electrical blackout could potentially wipe out 90 percent of the American population in a year’s time.

An EMP Is a Real Possibility

We know that a major EMP is a possibility. In fact, it’s happened before. In 1859, earth witnessed one of the largest, most powerful solar storms on record—known as a Carrington Event—causing telegraph lines across North America and Europe to fail. That was before technology was instrumental to daily survival, but today, a storm of similar magnitude could create a major economic disruption and loss of life. As Lloyd’s of London put it, “As the electric infrastructure ages and we become more and more dependent on electricity, the risk of a catastrophic outage increases with each peak of the solar cycle.”

We came close to finding out for ourselves just a few years ago. On **July 23, 2012**, a

Carrington-level storm almost struck Earth. According to scientists, the storm was “one of the strongest in recorded history” and “might have been stronger than the Carrington Event itself.” What’s the most significant difference between the 1859 Carrington Event and the 2012 storm? The 2012 storm just missed hitting the Earth’s surface.

Solar activity is cyclical and peaks every 11 years, and historical auroral records show that extreme storms—those capable of creating a power outage for 20 to 40 million Americans lasting from 16 days to one to two years—occur roughly every 150 years, suggesting it is **almost inevitable** that a major solar flare event will happen at some point in the future. In fact, scientists working alongside the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) estimate a **12-percent likelihood** of a solar superstorm happening by 2022.

It’s not just the sun that could generate an EMP. We also know that a nuclear EMP attack by a potential adversary is within the realm of possibility. As the 2004 EMP Commission **report** describes, the potential damage created by an EMP and our failure to prepare for such an attack, “makes EMP employment by an adversary an attractive asymmetric option.”

Moreover, China and Russia have considered “limited nuclear attack options that, unlike their Cold War plans, employ EMP as the primary or sole means of attack.” Iran is also of concern and is believed to have the capacity to launch an

EMP attack against the U.S., **according to** EMP Commission Chairman Dr. William Graham:

We have data indicating that the Iranians have launched their versions of Scuds off of the Caspian Sea – not from land, but from the sea – and launched them over land. And we’ve also seen them launch missiles that have gone up and apparently exploded near their highest altitude – when you put those two ideas together – that is an EMP attack.

Whether it’s a natural event or a man-made EMP, we ignore the EMP threat at our peril. An EMP is *not* unlikely to occur at any time and such an event has the potential to destroy our electrical grid and cripple our infrastructure.

Government Action Can Help

An EMP event has the potential to be disastrous for our economy and for humankind, but the good news is that action can be taken to mitigate those risks and protect us, and those protective measures are feasible and relatively inexpensive.

The EMP Commission offered 100 steps that policymakers could take to prepare our infrastructure so we can better weather an EMP. Importantly, the Commission strongly urged that immediate action be taken to harden our electric grid against EMP attacks.

The purpose of the Commission’s recommendations was to prompt action

from the federal government, specifically the departments of Homeland Security and Energy. Although certain tasks have been assigned, the Government Accountability Office recently **found** that neither department has actually carried out these recommendations. Even more troubling, as Joe Colangelo, a former Navy officer, **reports**, there has been no “comprehensive, holistic effort to address” the EMP Commission’s recommendations and “no designated lead for coordinating all these efforts.”

At the very least, our most critical transformers—which, if destroyed, would disrupt power for a long period of time—need to be protected as soon as possible. If the electrical grid were destroyed, it would take years to replace these critical transformers. About 200 to 700 transformers are considered critical to the power grid and could be protected against EMP for \$80 million to \$280 million, **according to Bill Harris** at the Foundation for Resilient Societies. For an additional \$8 million to \$28 million, these transformers could be protected against solar storms. This is a very modest investment in the scope of our gargantuan federal budget. In fact, the total combined cost of those measures is about \$1 per person in the United States, a worthy expense with millions of lives and trillions of dollars hanging in the balance.

The House and Senate too have failed to act despite recognizing the threat EMP poses. In recent years, several pieces of legislation have been introduced in an attempt to address our

electrical grid's vulnerabilities, like the GRID Act and the Shield Act. Sadly, none have passed despite gaining bipartisan support.

A new bill, the Critical Infrastructure Protection Act (CIPA), was introduced in the House (H.R. 1073) and in the Senate (S. 1846) last year. If passed, it would empower the Department of Homeland Security to take steps necessary to protect the electrical grid, like implementing the EMP Commission's recommendations. The passage of the CIPA would be a positive first step towards protecting our grid and infrastructure from a future EMP.

Conclusion: Government Accountability

A lack of knowledge about and the complexity of EMPs contributes to the current failure to take preventative action, but clearly lawmakers must take action to prepare our infrastructure to handle an EMP. Given how high the stakes are, it is unconscionable that our electrical grid hasn't been shored up against a potentially devastating threat.

Surely protecting ourselves against a threat of such high magnitude is money well spent. After all, the cost of prevention is far lower than the consequences of inaction. Rather than discounting EMP as an idle threat, it's high time for policymakers to acknowledge EMP and take actual steps towards preparedness. Congress should pass the Critical Infrastructure Protection Act, and the departments of Homeland Security and Energy ought to swiftly carry out the EMP Commission's recommendations.

Solar Scientist: We Must Prepare For Inevitable Future Solar Storms

The 2012 solar explosion that nearly struck Earth prompted many leading experts, including Dr. Daniel Baker—a solar scientist and the director of University of Colorado-Boulder's Laboratory for Atmospheric and Space Physics—to **urge** lawmakers to take action:

"My space weather colleagues believe that until we have an event that slams Earth and causes complete mayhem, policymakers are not going to pay attention... The message we are trying to convey is that we made direct measurements of the 2012 event and saw the full consequences without going through a direct hit on our planet."

"The Carrington storm [of 1859] and the 2012 event show that extreme space weather events can happen even during a modest solar cycle like the one presently underway. Rather than wait and pick up the pieces, we ought to take lessons from these events to prepare ourselves for inevitable future solar storms."

Let's hope it doesn't take an event slamming earth to get policymakers' attention. Rather than waiting for a catastrophe to occur, Washington should act now so we are prepared.

WHAT YOU CAN DO

Help compel the government to do its job and protect our country from an EMP.

- **Get Informed:** Learn more about EMP. Visit:
 - The Independent Women's Forum
 - Secure the Grid
 - Consumers' Research
- **Talk to Your Friends:** Help your friends and family understand these important issues. Tell them about what's going on and encourage them to join you in getting involved.
- **Become a Leader in the Community:** Get a group together each month to

talk about a political/policy issue (it will be fun!). Write a letter to the editor. Show up at local government meetings and make your opinions known. Go to rallies. Better yet, organize rallies! A few motivated people can change the world.

- **Remain Engaged Politically:** Too many good citizens see election time as the only time they need to pay attention to politics. We need everyone to pay attention and hold elected officials accountable. Let your Representatives know your opinions. After all, they are supposed to work for you!

ABOUT THE INDEPENDENT WOMEN'S FORUM

The Independent Women's Forum (IWF) is dedicated to building support for free markets, limited government, and individual responsibility.

IWF, a non-partisan, 501(c)(3) research and educational institution, seeks to combat the too-common presumption that women want and benefit from big government, and build awareness of the ways that women are better served by greater economic freedom. By aggressively seeking earned media, providing easy-to-read, timely publications and commentary, and reaching out to the public, we seek to cultivate support for these important principles and encourage women to join us in working to return the country to limited, Constitutional government.

We rely on the support of people like you! Please visit us on our website www.iwf.org to get more information and consider making a donation to IWF.

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