



Meet the Scientist Turning CO2 Into Ethanol

MIT Breaks a World Record For Nuclear Fusion

The Nintendo Switch Was Hiding In Plain Sight

10 of the Coolest Digital Car Gauges Ever Made

Seeing Numbers as Triangles Makes Math Gorgeous

Texas May Become a Testing Ground for Defending the Grid From EMPs

Electromagnetic pulse weapons might be rare, but The Lone Star State is starting to take them seriously.



By Eric Tegler Oct 4, 2016 1.6k [Facebook] [Twitter] [Email]

An electromagnetic pulse (EMP) attack could wreak real havoc on the electrical system that powers our lives. It's something defense experts have been worrying about for years, given the vulnerable state of America's grid. Now, one Texas-based think tank says its home state is the perfect place to test how to defend the country's infrastructure from such an attack.

Simply put, an EMP is a strong pulse of electromagnetic energy with the power to disable or even destroy electronics over a wide geographic area. Such an effect could come from high-altitude detonation from a nuke or from natural disturbances caused by solar storms.

Why Texas? Its historically independent nature aside, Texas is the world's 10th largest economy by GDP and is home to 11 percent of the U.S. military population. The state is also the nation's largest energy producer. But the key, according to the Dallas-based National Center for Policy Analysis (NCPA), is Texas' state-controlled electrical grid.

The U.S. national grid consists of three systems. One serves the east half of

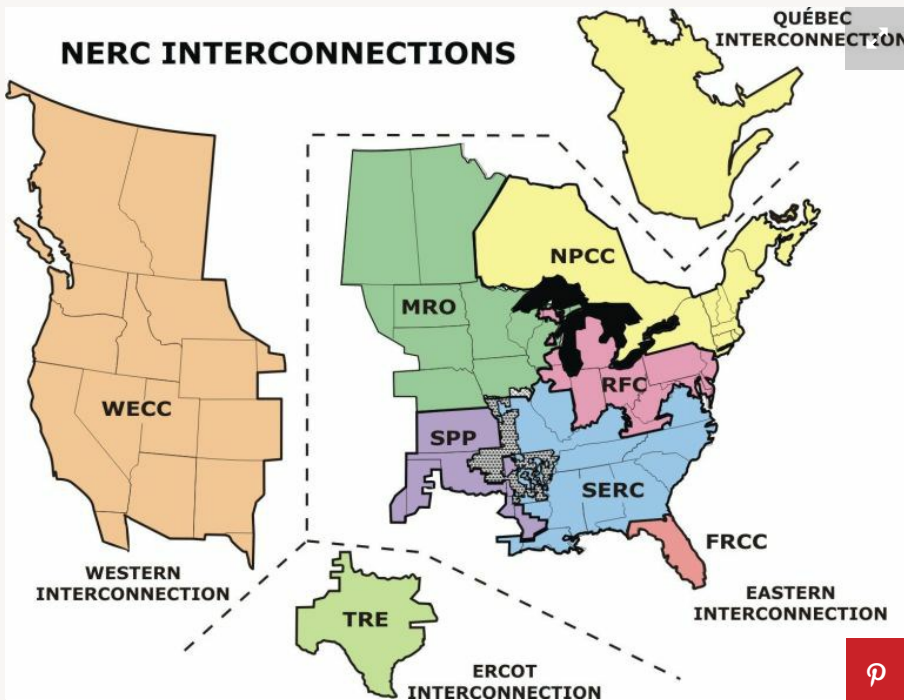
MOST POPULAR



Scientists Accidentally Discover Efficient Process To Turn CO2 Into Ethanol



the country, the second serves the western half. But the Lone Star State has its own independent grid, and the [NCPA says](#) this fact makes Texas well-positioned to implement EMP defenses. However, it also makes the state an attractive target.



Ercot

The electric power industry has been aware of the potential threat of EMPs, but until recently, no detailed research has been conducted about how to counter its possible threats. Last year the Electric Power Research Institute (EPRI) an industry non-profit, began a three-year EMP research program, which was welcome news to David Grantham, author of the [report on the Texas grid and national security](#).

How do you even harden an electric grid against such an attack? According to [the EPRI](#), utilities are deploying tactics that include shielding control rooms with Faraday cages, using new grounded metallic relay houses, grounding and shielding power supply and communications cables, installing robust surge protectors/arresters, increasing use of fiber optic cables for communication, and neutral blockers for transformers.

So there are lots of tools in the toolbox for EMP mitigation, but the electric power industry doesn't want to pay the costly price until they know more about the actual risks. The Edison Electric Institute, an industry trade association, [echoes similar caution](#). It says that "electric utilities plan for a number of threats to the grid" and that "they identify the likelihood and consequence of each threat to understand their security priorities." For example, it's far more likely for electric infrastructure to be attacked through a computer rather than a ballistic weapon.

For now, EMPs rank low on the industry's list of threats. But those priorities could shift as more countries develop EMP weapons. Right now, the U.S. Air Force Research Laboratory is developing [its own tactical EMP weapons, called CHAMP](#). And when there is one weapon in the works, more usually follow.

Regardless of how remote the possibilities, Texas' electric grid could become a model for infrastructure protection in this new and growing piece of

Here's BAE Systems' Proposal For A New Light Army Tank



Our Latest Look At China's New Stealth Fighter

technological warfare.

"I tend to fall on the side which views [EMP] as a remote possibility," Grantham says, "but it remains a possibility....Having worked in counterintelligence in the Air Force for several years, I think hardening the grid is well worth the investment."

Advertisement - Continue Reading Below

READ NEXT:

More From **RESEARCH**



The 10 Coolest Drones at the World's Biggest Robot War Games



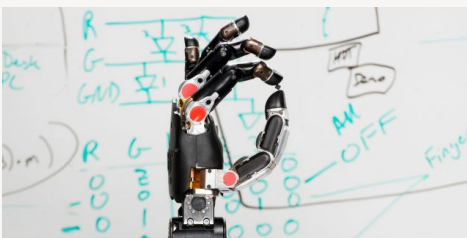
China is Designing Portable Nuclear Reactors



The U.S. Is Upgrading Its Tiniest Killer Drones Before It Even Gets Them



The Pentagon Wants to Use Bitcoin Technology to Guard Nuclear Weapons



DARPA Has a Podcast Now



U.S., NATO Already Planning the Next Generation of Fighter Jets



China Claims It Developed "Quantum" Radar To See Stealth Planes



Lockheed to Build a Mach 20 Hypersonic Weapon System



How the Air Force Will Attack Its Tiniest Enemy: Plane-Corroding Bacteria



Why DARPA Needs AI to Defeat Enemy Radar

MILITARY

RESEARCH

EMP

TEXAS

AIR FORCE

MILITARY

LONE STAR ENERGY: WHY TEXAS WILL RESIST THE CALL FOR A UNIFIED GRID

FALLOUT FROM UNIVERSAL STUDIOS BLAZE CENTERS ON FAKE CITY'S GRID

TINY CAR TIRES GENERATE ELECTRICITY FROM THE GROUND

THE ARMY IS TESTING BODY ARMOR MADE FROM GENETICALLY ENGINEERED SPIDER SILK

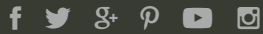
VOLVO RECHARGE CONCEPT TO BECOME C30 PLUG-IN HYBRID: LIVE FROM FRANKFURT MOTOR SHOW

LIVE FROM LAKE COMO: THE WILD BMW CONCEPT ROADSTER MOTORCYCLE THAT COULD BECOME A REALITY



MORE FROM RESEARCH

**POPULAR
MECHANICS**



[Newsletter](#)

[Press Room](#)

[About Our Ads](#)

[Give a Gift](#)

[Why Did I Get This Ad?](#)

[Digital Editions](#)

[Contact Us](#)

[Customer Service](#)

[Events & Promotions](#)

[BestProducts](#)

[About Us](#)

[Community Guidelines](#)

[Subscribe](#)

[Giveaways](#)

[Media Kit](#)

[Advertise Online](#)

[Other Hearst
Subscriptions](#)

[Being Green](#)

HEARST *men's group*

A PART OF HEARST DIGITAL MEDIA

©2016 Hearst Communications, Inc. All Rights Reserved.

[Privacy Policy](#)

[Your California Privacy Rights](#)

[Terms of Use](#)

[Site Map](#)

EVO PDF Tools Demo