=Crystal Highways=

===Clean Grid===

====Contention 1 is a clean grid====

====Two scenarios for blackouts====

====First is extreme weather====

\*\*Kennedy 8/14\*\* (Bruce Kennedy was a professor at numerous colleges but is now a Reporter and Editor for MSN, "Aging US power grid faces game-changing threats," MSN Money, 8/14/13, [[http://money.msn.com/now/post—severe-weather-power-outages-cost-the-us-billions-http://money.msn.com/now/post--severe-weather-power-outages-cost-the-us-billions]] //Bobby)

We~’re entering a dangerous stretch of the Atlantic hurricane season. The Weather Channel says

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although another Hurricane Katrina or Superstorm Sandy could easily push those figures higher.

====Second is cyber terrorism====

\*\*McClam 13 \*\*(Erin 2/19, Staff Writer for NBC News, Successful hacker attack could cripple U.S. infrastructure, experts say, NBC News, http://usnews.nbcnews.com/\_news/2013/02/19/17019005-successful-hacker-attack-could-cripple-us-infrastructure-experts-say?lite //Bobby)

A report tying the Chinese military to computer attacks against American interests has sent a

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raised the specter of intentionally derailed trains, contaminated water and widespread blackouts.

====Even a slight power grid downage means widespread nuclear meltdown – that outweighs global nuclear war and causes immediate extinction====

\*\*IBT Science 11\*\*("Solar Flare could unleash nuclear ~~holocaust~~ across planet earth forcing hundreds of nuclear power plants into total meltdowns" September 14, 2011 (NaturalNews) http://au.ibtimes.com/articles/213249/20110914/solar-flare-could-unleash-nuclear-holocaust-across-planet-earth-forcing-hundreds-of-nuclear-power-pl.htm //Bobby) EDITED FOR OFFENSIVE LANGUAGE

Why does all this matter? To understand that, you have to understand how nuclear power plants function. Or, put another way, how is nuclear material prevented from "going nuclear" every single day across our planet? Every nuclear power plant operates in a near-meltdown state All nuclear power plants are operated in a near-meltdown status. They operate at very high heat, relying on nuclear fission to boil water that produces steam to drive the turbines that generate electricity. Critically, the nuclear fuel is prevented from melting down through the steady circulation of coolants which are pushed through the cooling system using very high powered electric pumps. If you stop the electric pumps, the coolant stops flowing and the fuel rods go critical (and then melt down). This is what happened in Fukushima, where the melted fuel rods dropped through the concrete floor of the containment vessels, unleashing enormous quantities of ionizing radiation into the surrounding environment. The full extent of the Fukushima contamination is not even known yet, as the facility is still emitting radiation. It~’s crucial to understand that nuclear coolant pumps are usually driven by power from the electrical grid. They are not normally driven by power generated locally from the nuclear power plant itself. Instead, they~’re connected to the grid. In other words, even though nuclear power plants are generating megawatts of electricity for the grid, they are also dependant on the grid to run their own coolant pumps. If the grid goes down, the coolant pumps go down, too, which is why they are quickly switched to emergency backup power – either generators or batteries. As we learned with Fukushima, the on-site batteries can only drive the coolant pumps for around eight hours. After that, the nuclear facility is dependent on diesel generators(or sometimes propane) to run the pumps that circulate the coolant which prevents the whole site from going Chernobyl. And yet, critically, this depends on something rather obvious: The delivery of diesel fuel to the site. If diesel cannot be delivered, the generators can~’t be fired up and the coolant can~’t be circulated. When you grasp the importance of this supply line dependency, you will instantly understand why a single solar flare could unleash a nuclear ~~holocaust~~ ~~[extinction~~] across the planet. When the generators fail and the coolant pumps stop pumping, nuclear fuel rods begin to melt through their containment rods, unleashing ungodly amounts of life-destroying radiation directly into the atmosphere. This is precisely why Japanese engineers worked so hard to reconnect the local power grid to the Fukushima facility after the tidal wave — they needed to bring power back to the generators to run the pumps that circulate the coolant. This effort failed, of course, which is why Fukushima became such a nuclear disaster and released countless becquerels of radiation into the environment (with no end in sight). And yet, despite the destruction we~’ve already seen with Fukushima, U.S. nuclear power plants are nowhere near being prepared to handle sustained power grid failures. As IBtimes reports: "Last month, the Nuclear Regulatory Commission said U.S. plants affected by a blackout should be able to cope without electricity for at least eight hours and should have procedures to keep the reactor and spent-fuel pool cool for 72 hours. Nuclear plants depend on standby batteries and backup diesel generators. Most standby power systems would continue to function after a severe solar storm, but supplying the standby power systems with adequate fuel, when the main power grids are offline for years, could become a very critical problem. If the spent fuel rod pools at the country~’s 104 nuclear power plants lose their connection to the power grid, the current regulations aren~’t sufficient to guarantee those pools won~’t boil over — exposing the hot, zirconium-clad rods and sparking fires that would release deadly radiation." (http://www.IBTimes.com/articles/194...) Now, what does all this have to do with solar flares? How the end of modern civilization will most likely occur

====US transmission assistance is key to black-out proof energy transfers====

\*\*Bawa 12\*\* (Harmeet, Head of Communications – ABB~’s Power Products and Power Systems, "Strengthening the electricity bond between the US and Mexico," http://www.abb-conversations.com/2012/12/strengthening-the-electricity-bond-between-the-us-and-mexico/)

Interconnections between countries help optimize power systems, bring energy efficiency benefits and increase power

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link will supply electricity from a Mexican wind farm to the California market.

===Plan===

====Thus the plan: The United States federal government should develop cross-border and interconnected grid, transmission, and distribution infrastructure with Mexico.====

===Green Tech===

====Contention two is green tech====

====Scenario one is leadership====

====The US is falling behind now in green tech innovation====

\*\*Liebrich et al, 10 \*\*- Chairman and Chief Executive of the New Energy Finance ~~[World Economic Forum, "Green Investing 2010: Policy Mechanisms to Bridge the Financing Gap," January 2010, http://www3.weforum.org/docs/WEF\_IV\_GreenInvesting\_Report\_2010.pdf SJE~~]

While new financial investment – i.e. excluding corporate and government research,

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development spending, plus small-scale projects accounted for the remaining investment.

====Reducing emissions and spurring green tech is key to US leadership====

\*\*Eizenstat, 8 \*\*– has held numerous senior positions in government as Deputy Secretary of the Treasury, Under Secretary of State for Economic Affairs, U.S. Ambassador to the EU ~~[Stuart Eizenstat, "The U.S. Role In Solving Climate Change: Green Growth Policies Can Enable Leadership Despite The Economic Downturn," Energy Law Journal, http://www.felj.org/docs/elj301/1\_-\_eizenstat.pdf SJE~~]

The third point is that the United States must show leadership if we are to

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much more difficult standard for the United States," he told the press.

====Only federal action spurs international action on climate change====

\*\*Ivanova and Esty 8\*\* (Assistant Professor of Government and Environmental Policy at The College of William and Mary and the Director of the Global Environmental Governance Project at the Yale Center for Environmental Law and Policy, and Hillhouse Professor of Environmental Law and Policy at Yale University, 2008, "Reclaiming U.S. Leadership in Global Environmental Governance " Vol 28 No. 2. <http://mxivan.people.wm.edu/Ivanova&Esty-SAIS%20Review-2008.pdf> //evan)

In this article, we address these core questions. We argue that the next

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about international entanglements and international organizations—even those related to protecting the planet

====Two impacts – first, the crunch====

====Lack of ecologically sustainable policies causes extinction====

Julien \*\*Jowit 8\*\* –The Guardian, World is facing a natural resources crisis worse than financial crunch, http://www.guardian.co.uk/environment/2008/oct/29/climatechange-endangeredhabitats

The world is heading for an "ecological credit crunch" far worse than the

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on planet Earth," said Chief EmekaAnyaoku, the president of WWF International.

====Second, soft power – ====

====Failure to take the lead on climate change collapses American soft power====

\*\*Romm 12\*\* (Joe Romm, Fellow at American Progress and the editor of Climate Progress, "U.S. Global Warming Denial Will Help China Overtake America, Experts Warn" 4-5-12 http://thinkprogress.org/climate/2012/04/05/456978/us-global-warming-denial-will-help-china-overtake-america-experts-say/ //evanrunburg)

The legendary Peter Raven has a must-see ABC News interview. Bill Blakemore

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Mail criticizes you for denialism, you know you have gone way overboard.

====That~’s key to deter escalatory war and genocide and solves all of their impacts====

\*\*Nye 96\*\* (Joseph Nye, Dean, John F. Kennedy School of Government, Harvard University, 1996, W. Q., p ln //evan)

While generally less threatening to U.S. interests than global or regional balance

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of bilateral alliances, regional security organizations and alliances, and global institutions.

====Scenario two is warming====

====Renewable development on the border will remain limited through 2030, but joint cooperation between the US and Mexico will boost the industry====

Al \*\*Sweedler\*\* \*\*et al\*\*, \*\*2012\*\*, The U.S.-Mexican Border Environment: Progress and Challenges for Sustainability (eds., Erik Lee and Paul Ganster), "Chapter 11: Energy for a Sustainable Border Region in 2030," p. 321-322

Energy poses a formidable challenge to those working to achieve sustainable development goals. Energy

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foundations of a low-carbon U.S.-Mexican border region.

====Mexican renewable energy development is modeled globally – that solves warming, but will fail now without sufficient investment ====

\*\*W.W.F.,\*\* 6/4/\*\*13\*\*, (World Wildlife Fund), "WWF welcomes Mexico~’s 2050 Climate Vision; now global funding must be made available to implement such strategies,"

Mexico~’s launch today of a 2050 Climate Change Vision report is a welcome next step

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keep global warming below 2°C will be thwarted," she added.

====A modernized grid would use renewable energy====

\*\*Rodriguez 12\*\* ~~[Diana, U.S. Chamber of Commerce, "Enhancing the U.S.-Mexico Economic Partnership," 4/24/12, http://www.uschamber.com/sites/default/files/reports/1204EnhancingtheUS-MexicoEconomicPartnership.pdf~~]

In early 2009, President Calderón and President Obama announced plans to strengthen and deepen

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capital to modernize their operations and/or invest further in their sector.

====Emissions are key to warming – scientific consensus proves====

\*\*Stern 7\*\* (Nicholas Head of the British Government Economic Service, (Former Head Economist for the World Bank, I.G. Patel Chair at the London School of Economics and Political Science, "The Economics of Climate Change: The Stern Review", The report of a team commissioned by the British Government to study the economics of climate change led by Siobhan Peters, Head of G8 and International Climate Change Policy Unit, Cambridge University Press, p. 7-8)

The causal link between greenhouse gases concentrations and global temperatures is well established, founded

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current levels of aerosols in the atmosphere (discussed later in this chapter).

====Must act now – 2015 is the brink of irreversible climate change====

\*\*Sackett 09\*\* (Professor Penny D. Sackett, PhD in theoretical physics from University of Pittsburgh, has held positions at Amherst College (USA), the Institute for Advanced Study (Princeton, USA), and the Kapteyn Astronomical Institute (NL), has served on Australian, Dutch, European, and US science and advisory panels, including several committees for Next Generation Telescopes, appointed Director of the ANU Research School of Astronomy and Astrophysics and Mount Stromlo and Siding Spring Observatories in 2002-2007, Elected International Fellow of the Royal Astronomical Society and has served on the AURA Board of Directors, which governs, among other astronomical centers, the Gemini Observatory and the Hubble Space Telescope Science Institute, "Why we must act now to reduce greenhouse gas emissions" 11-25-2009, <http://www.chiefscientist.gov.au/2009/12/why-we-must-act-now-to-reduce-greenhouse-gas-emissions/> //evanrunburg) EDITTED FOR POTENTIALLY OFFENSIVE GENDERED LANGUAGE

The world is at a crossroads. We must contain and then reduce our greenhouse

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wheel, because time is short and the clock is ticking - loudly.

====Warming is real and anthropogenic – most qualified studies prove - 97% consensus on the issue====

\*\*Nuccitelli 13 \*\*(Dana 5/16, writing about a survey that The Guardian did, "Survey finds 97% of climate science papers agree warming is man-made," The Guardian, http://www.theguardian.com/environment/climate-consensus-97-per-cent/2013/may/16/climate-change-scienceofclimatechange //Bobby)

97% of scientific papers taking a position on climate change say it is man

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should not be at all controversial. Global warming cannot have suddenly stopped.

====Warming ensures extinction – all scientific consensus is on our side====

\*\*Deibel\*\*, Professor of IR @ National War College, \*\*07\*\* (Terry L. "Foreign Affairs Strategy: Logic for American Statecraft", Conclusion: American Foreign Affairs Strategy Today)

Finally, there is one major existential threat to American security (as well as

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States, but potentially to the continued existence of life on this planet.

====Independently, emissions acidify the ocean – that causes extinction====

\*\*Romm 12\*\* (Joe Romm is a Fellow at American Progress and is the editor of Climate Progress, "Science: Ocean Acidifying So Fast It Threatens Humanity~’s Ability to Feed Itself," 3/2/2012, <http://thinkprogress.org/romm/2012/03/02/436193/science-ocean-acidifying-so-fast-it-threatens-humanity-ability-to-feed-itself> //evan)

The world~’s oceans may be turning acidic faster today from human carbon emissions than they

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corals, mollusks and some plankton need for reef and shell-building.

====It also exacerbates every conflict – warming accelerates global violence ====

\*\*Climate News Network 2013\*\* (August 5^^th^^, "Is Climate Change Creating More World Violence?," Earth Techling, <http://www.earthtechling.com/2013/08/is-climate-change-creating-more-world-violence/> //Bobby)

Stand by for more violence. As planetary temperatures rise, so does the likelihood

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21 showed a positive relationship between higher temperatures and raised levels of violence.

====Don~’t evaluate the negative~’s evidence—they~’re paid off by special interests and are just hoping that the impact isn~’t that bad. ====

\*\*NAS 10\*\* (National Academy of Science, "CLIMATE CHANGE AND THE INTEGRITY OF SCIENCE," http://www.pacinst.org/climate/climate\_statement.pdf)

Many recent assaults on climate science and, more disturbingly, on climate scientists by

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activities, especially the burning of fossil fuels and deforestation. (iii)

====Climate change comes first – it~’s an existential risk – action NOW is key====

\*\*Mazo 10\*\* (Jeffrey Mazo, PhD in Paleoclimatology from UCLA, Managing Editor, Survival and Research Fellow for Environmental Security and Science Policy at the International Institute for Strategic Studies in London, 2003-10, "Climate Conflict: How global warming threatens security and what to do about it," pg. 122, May 12, 2010)

Without early and severe reductions in emissions, the effects of climate change in the

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adaptation to these extremes would mean profound social, cultural and political changes.

===Solvency===

====Contention 3 is solvency====

====Mexico says yes to the plan====

Amanda \*\*Maxwell\*\*, 11/30/\*\*2012\*\*, "US Mexico presidential meeting highlights opportunity for climate cooperation across the border," Switchboard, http://switchboard.nrdc.org/blogs/amaxwell/us\_-\_mexico\_meeting\_highlights.html

Mexican President-elect Enrique Peña-Nieto visited U.S. President Barack

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on securing a clean energy and low carbon future for our two countries.

US-Mexico grid expansion is key – the plan creates pilot projects that spill over to developing countries and make renewable energy successful

Bruns 11 (Adam, Managing Editor – Site Selection (Magazine about Real Estate Strategy and Economic Development, "Crossing Boundaries," Site Selection, August, <http://www.siteselection.com/theEnergyReport/2011/aug/energy-storage.cfm>)

Founded by a man from Denmark, currently based in the UAE, and with

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such as technology parks, economic free zones, agriculture or mineral exploration."

Grid interconnectivity is key – enhances grid security and generates additional investment into renewables

Ibarra-Yunez 12 (Dr. Alejandro, Professor of Economics and Public Policy – Instituto Tecnologico de Estudios Superiores de Monterrey (Mexico), "Economic and Regulatory Challenges and Opportunities for US-Mexico Electricity Trade and Cooperation," Policy Research Project Report 174, May, <http://repositories.lib.utexas.edu/bitstream/handle/2152/17560/prp_174-econ_reg_challenges_US_Mex_electricity-2012.pdf?sequence=5>)

Growth in energy demand and generating capacity is outpacing growth in the transmission and distribution

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increase overall grid reliability and induce capital investment in generation and transmission capacity.

Grid construction creates demand for renewables

Richford 6-14 (Megan, Executive Marketing Assistant – North American Production Sharing, "Vision for Renewable Energy in Mexico Looks Promising," Cision, 2013, [http://news.cision.com/north-american-production-sharing—inc-/r/vision-for-renewable-energy-in-mexico-looks-promising,c9428687](http://news.cision.com/north-american-production-sharing--inc-/r/vision-for-renewable-energy-in-mexico-looks-promising,c9428687))

When it comes to renewable energy investments, Mexico is at the forefront for foreign

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the development of solar and wind energy sources and other renewable resource programs.