

# STORM WARNINGS

Vol. 3, Issue 1

Energy 101: There is a Better Way!



**R. Michael Conley**  
*Founder*

The *Storm Warnings* newsletter is part of a larger initiative by its founder, R. Michael Conley, to carry the message to others.

"The message is frightfully simple: We are heading into a perfect storm that will forever change our lives, and we need to act on it while there is still time," said Conley.

Under the overall umbrella of his company, Weathering the Storm, LLC, its mission to *awaken, engage and help others weather the storm* is carried out in a number of ways.

## Energy 101: There is a Better Way!

Energy is the omnipresent force that shapes global economies, sparks geopolitical conflicts and directly affects the lives of over 7.3 billion people inhabiting our planet. As a major contributor to the perfect storm, it is also misunderstood and "spun" by vested interests to either protect or change the status quo in ways that will most benefit them. Absent a national energy strategy, we are squandering time and resources on a hodge-podge of ineffective solutions. In this issue, R. Michael Conley, the publisher, discusses a framework for reengineering our energy systems and the transformational economic opportunities it could open up.

**WTS:** Why is it important to think about a new energy framework at this time?

**Conley:** Energy is the 800 pound gorilla in our global living room, and our addiction to oil – fueling over 93% of our transportation system and feedstock for many of the products we use daily – is truly our Achilles' heel. Without an alternative energy system of sufficient scale to replace this depleting resource, and with an aging grid system vulnerable to brownouts and cyber-attacks, we have a problem.

The clock is ticking, and Band-Aid fixes won't replace the major surgery that's needed. Let me suggest a framework for addressing our energy challenge and highlight some of the exciting transformational opportunities it could open up.

**WTS:** Good, let's start with solutions and cover the opportunities later. How do we start?

**Conley:** This is big picture stuff, and I'll use our oil and transportation systems as an example of the systemic approach we'll need to take. It encompasses a) the *raw fuel* – oil – that powers the system, b) the *apparatus* that turns it into useable energy – exploration, drilling, refining, etc., and c) the *infrastructure* that converts its power into a working system for

# STORM WARNINGS

Vol. 3, Issue 1

Energy 101: There is a Better Way!

"The *Storm Warnings* newsletter, which provides an in-depth quarterly look at a specific topic, is one way we hope to awaken and engage people, but we encourage folks to log in to our web-site for a full menu of offerings and services," Conley said.

([www.weatheringthestorm.net](http://www.weatheringthestorm.net))

The website will provide further details on other initiatives. Among them:

1. Lethal Trajectories – Conley's futurist novel on what it will be like to live through a perfect storm crisis
2. *Weathering the Storm Guide* – A guide on how to prepare for the storm
3. Weathering the Storm Seminars – In-depth seminars that are now available
4. Blog, links, other resources, and the Storm Warnings newsletter.

About the Founder: Mike Conley is the Founder of Weathering the Storm LLC, and currently serves as Chairman and CEO of the Conley Family Foundation. As a former Fortune 500 business executive, author, lecturer, and public policy

end-users; vehicles, roads, service stations and so forth. This three part model is applicable to all energy systems.

In this systemic framework, a threat to one component is a threat to all. Yet, our tendency is to fixate on a specific fuel and all but ignore the other parts. Without a strategic framework, it has led to a hodge-podge of fragmented – often counterproductive – solutions.

Make no mistake; developing a strategic energy plan is a daunting proposition. The political gridlock, short term thinking and vested interests so deeply etched in our national DNA are resistant to change. It would take an event of Pearl Harbor proportions to shake off our lethargy and galvanize the public in a national effort – something I'll cover later.

**WTS:** Suppose a triggering event happened? How would you respond?

**Conley:** Well first, I hope we awaken to the threats we'll face from shortages of *affordable* oil and/or our antiquated grid system before it's too late. Assuming we do, I would suggest a six point framework that looks something like this:

1) Vision and prerequisites: Start with a vision that extends out at least a couple of decades or more. Factor in climate change, the availability of domestic raw fuels, infrastructure needs and more. Institute a national mandate to preempt the inevitable legal and bureaucratic hurdles to change, and provide clarity for the "rules of engagement" that'll take the unpredictability out of the effort. For illustrative purposes, let's call this effort our "VISION 2030" Plan:

2) Strategies and objectives: Next, establish measureable objectives for VISION 2030 and engage the marketplace in strategies for getting there. Key objectives for 2030 might include:

- Total independence from foreign oil with all energy produced domestically

# STORM WARNINGS

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Energy 101: There is a Better Way!

activist, Conley has written and spoken frequently on topics related to the perfect storm. He graduated from the University of Minnesota, after serving in the United States Navy, and later completed a post-graduate program at Stanford University. He is also active on several boards and advisory groups.

- 35% of all energy generated to come from renewables or nukes
- Transformed electrical grid system that runs on a new national energy "highway"
- Carbon footprint targets that are integrally tied to our new energy system
- Demand reduction and energy conservation efforts as cornerstone features

3) Blended fuel mix strategy: We are too dependent on oil and coal to replace either cold turkey. Accordingly, we'll need a blended energy mix that is gradually phased in. I would focus on an electrical energy transformation – the one energy system with

the scalability, portability and sustainability to supersede oil. As an energy "carrier," and not a raw fuel per se, electricity can be generated from a variety of fuels including fossils, renewables and nuclear energy. Targets and tactics for achieving an optimal energy blend might include:

a) Oil reduction: Reduce domestic oil consumption by 5% per annum for the next 8-10 years to become domestically self-reliant and *independent* of foreign oil on or before 2030

b) Coal usage: Target all coal burning plants to employ cleaner burning power stations with advanced technologies including CCS (Carbon Capture and Sequestration).

c) Nukes: Ramp up nuclear capacity using new generation nuclear technologies now available and fast-track thorium reactor development

d) Natural gas: Use natural gas as our workhorse "bridging" fuel to smooth the migration to a new energy mix; Resist attempts to export large quantities of LNG, and

e) Renewables: Go at it with everything we can muster with priority funding and urgency.

The *apparatus* and *infrastructure* required to support these energy mixes are crucial to the equation. Wind and solar power, for example, is limited without an energy grid system that can accommodate renewable power, and an energy storage capacity that can mitigate energy intermittency on windless and cloudy days. Fracked natural gas, with tight environmental controls, could provide our transitional bridging fuel, and our transportation infrastructure will require a retrofit to run on electricity and compressed gas.

4) A new energy grid system: Our electrical transformation will require an "electrical highway"

# STORM WARNINGS

Vol. 3, Issue 1

Energy 101: There is a Better Way!

equivalent in scope to the national highway system built in the 50s. Our transformed grid system should be able to do things like transmit wind-generated power from the windy plains of Southern Minnesota and move solar power from the Nevada deserts to energy-starved areas hundreds of miles away. Loaded with smart grid capabilities, sensors, high voltage power lines, connectivity to distributed and renewable energy sources, enhanced storage capacity, and protected power stations and transformers, we must systematically replace the antiquated grid system built over a half century ago.

Recent physical and cyber-attacks on our energy grids – and an increasing number of costly brownouts – have heightened the need for a new energy grid. The Wall Street Journal recently reported that “The U.S. could suffer a coast-to-coast blackout if saboteurs knocked out just nine of the country’s 55,000 electric-transmission substations on a scorching summer day.”

But, with a safe and secure grid system carrying cleaner, **domestically produced** energy generated from more energy-efficient power plants, we’ll have the ingredients for true energy independence. As our vehicle fleet, trains and high speed rail systems migrate to electrical, compressed gas or other hybrid fuels, a new supportive infrastructure will also emerge.

5) Implement a robust demand reduction strategy: Given the pervasive waste in both our energy systems and consumption practices, the real low hanging fruit will be found in the areas of demand reduction and conservation. Applied across all fronts – from commercial buildings to residential housing; from massive power plant retrofits to home furnace upgrades, and, above all, behavioral changes – it should actually take priority over supply-side solutions.

Through a carbon tax, a “decoupled” incentive system designed to reward utility companies and consumers for conservation and not consumption, and other inducements, it would include: a) reducing demand and peak-time usage, b) energy efficiency – doing the same things using less energy, and c) energy conservation – cutting back and changing behaviors like biking to the store versus driving. The payback is enormous and it should be an integral part of our energy systems package. (See Best Practices – EnerChange)

6) Education and metrics: Policy-making is hindered by our lack of any common understanding regarding energy, energy systems and the metrics of energy. Two examples:

The arcane *language* of energy is a formidable barrier. We measure electricity in kilowatt hours, natural gas in cubic feet (or therms), oil by the barrel and coal by its tonnage. How, for example, can we discuss wind energy as a replacement for oil without knowing that a barrel of oil has an energy equivalent of 3,412 kilowatts of electricity? By contrast, a Btu metric would provide the relative energy value of each fuel system and clarify, for example, the enormous amount of wind energy it would take to replace just one barrel of oil. It’s a good way to inject realism into our planning process.

# STORM WARNINGS

Vol. 3, Issue 1

Energy 101: There is a Better Way!

Another metric: In considering new energy sources, we need to factor in their respective “*net energy*” values. Specifically, how much energy does it take to produce a unit of energy? Eighty years ago, it took about one unit of energy to produce 100 units of oil energy. Today that 100:1 ratio is more like 12:1 for oil – and far less if fracking for shale oil. Corn-based ethanol has an even lower net energy value, and fusion energy or hydrogen fuel cells require more energy to make than the energy they produce. This data is critical in considering future energy systems.

**WTS:** Your six strategy framework is ambitious, but is it achievable and what “carrots” would you offer to make it worth the effort?

**Conley:** It’s formidable, but we’ve done remarkable things before. Our all-out effort to win WWII, complete the Manhattan Project and beat the USSR to the moon exemplifies what we can do if pressed to the wall. The problem is we *are* being pressed but have no sense of urgency to respond; time is running out. Perhaps our best approach is to highlight the “carrots” and not the threats.

Taking that track, imagine, if you will, the transformational impact of a clean-energy system not reliant on foreign oil; an economy that once again features America’s technological prowess and exports those services to other countries. Imagine that our number one work force problem is to fill labor shortages, not struggle with unemployment. It can happen...

The beauty of a VISION 2030-like plan is that the actions required to solve our problems could become the catalysts for transformational – and sustainable – growth. Some examples:

\* Conservation & Demand Reduction Industries: A thrust toward energy conservation technologies and services, building retrofits and clean energy programs will create a plethora of new cottage industries and “shovel ready” job opportunities.

\* Electrical Transformation: Rebuilding America’s grid system and developing an infrastructure to support our new energy systems will create sustainable job streams for decades to come.

\* Transportation Systems: A migration to ramped-up public transportation systems, rail and high speed rail networks, and a vehicle fleet fueled by alternative energy systems will be a long term economic stimulant.

\* Synthetics: Replacing petroleum-based products – paints, plastics, etc. – with synthetics could be a catalyst for new industries and technologies similar to NASA’s space program.

\* Education and Training: Universities and colleges will benefit from basic research grants, and

# STORM WARNINGS

Vol. 3, Issue 1

*Energy 101: There is a Better Way!*

vocational-tech schools will train millions to run our new economy.

**WTS:** You've covered a lot of ground; can you quickly summarize your key points?

**Conley:** The six-point framework I've suggested is but one example of how we can transform our energy systems to meet our future energy needs. Though challenging – and a major threat to the status quo – it may be our only way out. I'll leave you with three thoughts:

1) The threat: Our energy systems are aging and our addiction to oil is our Achilles' heel. The transition to new energy systems is a long and daunting challenge, but we are not responding.

2) Solutions: Complex energy challenges require systemic solutions. We need a strategic vision, a framework for connecting the dots, and a bias to act before it's too late.

3) Opportunities: Our solutions could become the catalysts for a transformed economy, a more sustainable planet, and a better future for those following us. Change is not the enemy; it's the energizer.

For more information, please visit our website at: [www.WeatheringtheStorm.net](http://www.WeatheringtheStorm.net)