

## **Bianco, Todd (PUC)**

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**From:** billyhoran@aol.com  
**Sent:** Saturday, March 02, 2019 12:49 PM  
**To:** captbirdfish@gmail.com; Bianco, Todd (PUC); Governor (GOV); rep-mattiello@rilegislature.gov; sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; rep-ruggiero@rilegislature.gov; dsharp401@gmail.com  
**Cc:** townCouncil@middletownri.com; louis\_dipalma@yahoo.com  
**Subject:** [EXTERNAL] : projo today Based on the bst data available - Build the Burrillville power station today as a bridge to tomorrows disruptive technologies.

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Posted Mar 1, 2019 at 11:01 PM Updated Mar 1, 2019 at 11:01 PM

[\[providencejournal.com\]](http://providencejournal.com) [\[providencejournal.com\]](http://providencejournal.com) [\[addtoany.com\]](http://addtoany.com)

PROJO Benjamin C. Riggs (“Using more natural gas helps environment,” Commentary, Feb. 24) has it correct. Using more natural gas helps the environment, especially in Rhode Island and New England.

Rhode Island Gov. Gina Raimondo, it is time to approve the combined-cycle natural-gas-fueled power station at Burrillville. It is also time to upgrade and expand natural gas transmission lines into New England.

The Rhode Island wind and solar electricity agenda is environmentally unsound. It is an unachievable and expensive road map to nowhere. Yes, today, reliance on natural gas and, tomorrow, such disruptive technologies as thorium-fueled fission-reactor-based power stations will sustain our energy security.

**William F. Horan**

Middletown

# **Letters: William F. Horan: More natural gas use will protect the environment**

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## **Bianco, Todd (PUC)**

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**From:** billyhoran@aol.com  
**Sent:** Saturday, March 09, 2019 5:58 PM  
**To:** captbirdfish@gmail.com; Governor (GOV); rep-mattiello@rilegislature.gov; rep-ruggiero@aol.com; sen-ruggiero@rilegislature.gov; sen-dipalma@rilegislature.gov; letters@providencejournal.com; editor@newportri.com  
**Cc:** louis\_dipalma@yahoo.com; Bianco, Todd (PUC)  
**Subject:** [EXTERNAL] : Fwd: Electrical Blackout  
**Attachments:** Blackout.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

This reported Venezuela electrical black out is what can happen here in RI! Yes, under the Gov Gina Raimondo wind & Solar road map to nowhere. The solution is to Approve and build the Burrillville RI combined cycle natural gas power station thus providing time to bridge in tomorrows even cleaner disruptive technologies coming on line.

-----Original Message-----

From: Dino Roberti <dinorobertiri@gmail.com>  
To: William Horan <billyhoran@aol.com>  
Sent: Sat, Mar 9, 2019 9:49 am  
Subject: Blackout

Bill,

Could this happen in the U.S. ?

# THE WALL STREET JOURNAL.

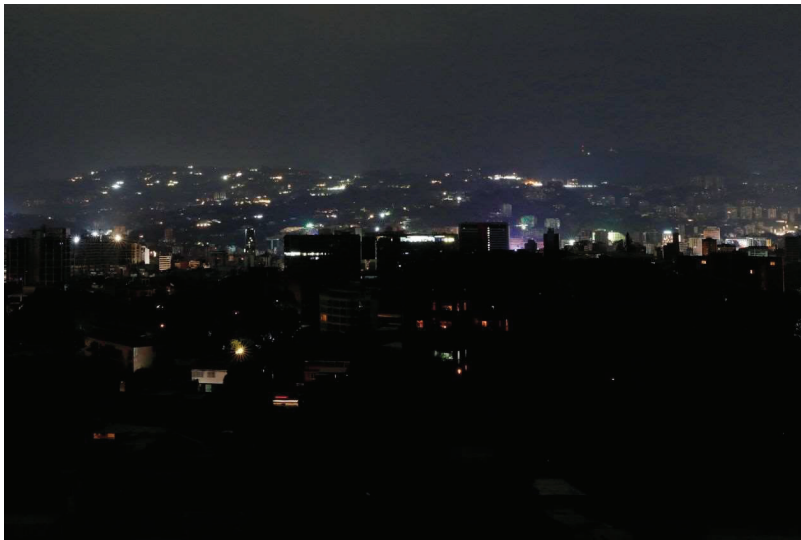
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<https://www.wsj.com/articles/venezuela-blackout-stretches-across-country-closing-schools-and-businesses-11552053011>

LATIN AMERICA

## Venezuela Blackout Plunges Millions Into Darkness

Maduro, without evidence, blames sabotage by local opponents and the U.S. for power outage



Caracas was almost completely dark Thursday and Friday. Officials blamed the country's biggest hydroelectric dam. Experts suspect the problem was faulty transmission lines that the government has failed to maintain. **PHOTO:** CARLOS JASSO/REUTERS

*By Ryan Dube and Maolis Castro*

Updated March 8, 2019 2:49 p.m. ET

CARACAS—The biggest blackout in Venezuela's history entered its second day on Friday, as dialysis patients went without treatment, airlines canceled flights and factories and schools shut their doors in a nation reeling from an economic collapse.

Electricity went out Thursday afternoon, plunging some 30 million people into darkness in a country mired in political turmoil and hyperinflation. Power was restored only briefly to parts of the capital on Friday afternoon before going out again.

The blackout was caused by problems at the massive El Guri hydroelectric dam in eastern Venezuela that supplies most of the country's power, government officials said.

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- Hyperinflation Shatters Venezuelan Manufacturing
- Trump, Unpopular Elsewhere, Has Lots of Fans in Venezuela
- Venezuela Plans to Deport American Journalist, Expels German Ambassador

Once a regional energy powerhouse, Venezuela's power grid slowly has decayed over the past decade due to what economists and former officials say is mismanagement, corruption and Latin America's

deepest economic crisis on record, leading the government to virtually abandon public investment.

Electricity Minister Luis Motta initially said Thursday the issue would be resolved in three hours. But residents woke up Friday with the power still out as they fretted about hard-to-buy food rotting in their refrigerators, the collapse of communications and the lack of official information as to when the lights will be on again.

"We don't know what's going on and we're scared," said Carla Blanco, a 55-year-old public employee in Caracas, a city of two million people which residents described as a ghost town Friday, with most businesses closed.

Because Caracas' subway system had also shut down, she walked two hours to get home on Thursday through the darkened streets of one of the world's most violent cities.

By late Friday, Defense Minister Vladimir Padrino said the army would increase street patrols to keep the peace and avoid looting.

Electricity outages are common in Venezuela as the economy has contracted by more than half in the past six years. But this blackout was unprecedented as it hit the entire country at once and lasted a full day. The length and breadth of the current outage likely reflects serious damage, experts said.

Miguel Lara, an expert on power generation in Venezuela, said the blackout can likely be traced to transmission lines that connect El Guri in the east to the population centers farther west.

Opposition politicians, doctors and rights activists say blackouts have had deadly consequences, resulting in 79 people dying in hospitals from November to February. They fear the fate of hospital patients, already facing severe shortages of medical supplies, as the outage drags on.

Francisco Valencia, director of Caracas-based health-sector watchdog Codevida, said that about 90% of dialysis operations had stopped nationwide, putting at risk thousands of patients.

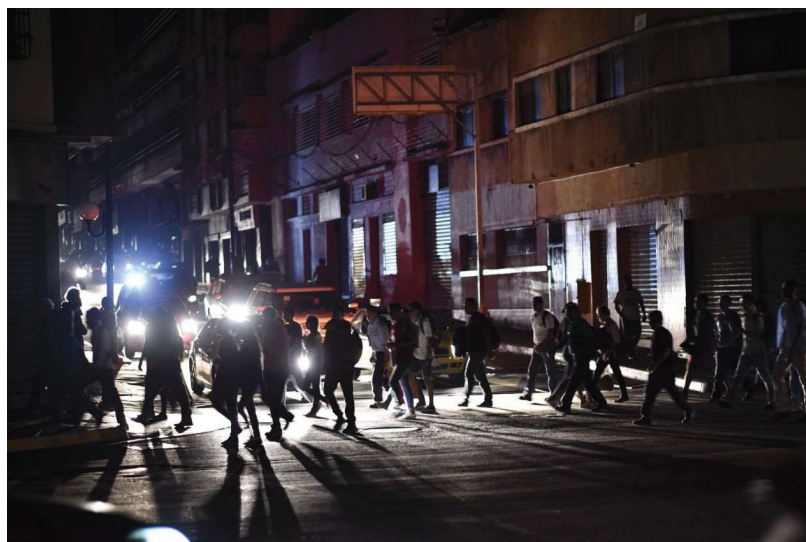
“There are probably going to be more deaths of people on dialysis,” he said Friday. “The situation is very grave.”

Operations were delayed at hospitals across Caracas on Friday as few doctors were able to make it to work and operating rooms were unusable. At the Supreme Commander Hugo Chávez Maternity Hospital nurses told pregnant women to go somewhere else due to the lack of light and water.

“I don’t know what’s going to happen to me and my baby,” said Melisa Torres, who is 9 months pregnant and was in pain from labor contractions. “They told me they aren’t doing cesareans, to find another hospital.”

At the central hospital in Maracay, a central Venezuelan city, hospital staff were taking turns using hand respirators for children who needed artificial respiration, said Dr. Julio Castro, a medical professor at the Central University in Caracas.

The blackout fueled Venezuela’s political crisis as embattled authoritarian President Nicolás Maduro faces the biggest challenge yet to his hold on power.



Caracas was in darkness on Thursday night. Businesses and schools were forced to close on Friday. PHOTO: YURI CORTEZ/AGENCE FRANCE-PRESSE/GETTY IMAGES

Mr. Maduro and his allies blamed the outage, without providing proof, on sabotage by local opponents and the U.S. as part of their bid to oust him, feeding into the ruling Socialist Party’s narrative that they are constantly under siege by Washington.

“The electricity war announced and directed by the imperialist United States against our people will be defeated,” said Mr. Maduro. His government ordered schools and businesses closed on Friday as they try to restart power.

Juan Guaidó, the head of the National Assembly who has declared himself interim president, said that corruption and incompetence were to blame for the crisis, and called on Mr. Maduro to make way for a new government that could solve the country's economic and political crisis.

Secretary of State Mike Pompeo denied the U.S. is responsible, placing the blame on a government that created a humanitarian crisis.

“Power shortages and starvation are the result of the Maduro regime's incompetence,” he said. “Maduro's policies bring nothing but darkness.”

Sen. Marco Rubio (R., Fla.), a key player in Washington's efforts to remove Mr. Maduro, mocked the sabotage claim after Venezuela's Communications Minister Jorge Rodríguez accused the senator on state-run television of personally orchestrating the blackout.



People waited in long lines Friday to fill up at one of the few gas stations in Caracas that was working. PHOTO: EDILZON GAMEZ/GETTY IMAGES

“My apologies to people of Venezuela,” Mr. Rubio responded on Twitter. “I must have pressed the wrong thing on the ‘electronic attack’ app I downloaded from Apple. My bad.”

The opposition is planning to hold nationwide street protests on Saturday after efforts last month failed to convince the military to rebel against Mr. Maduro by disobeying orders and allowing humanitarian aid into Venezuela.

There was more bad news for Venezuela's cash-strapped government on Friday. An international arbitration tribunal on awarded ConocoPhillips \$8.75 billion for the 2007 nationalization of the company's stakes in several oil projects there. Venezuela has the world's biggest oil reserves.

Venezuela's power grid was once the envy of Latin America. Electricidad de Caracas, the largest power provider in the country, was bought by U.S. based AES Corporation in 2000, but a wave

of nationalizations by then President Hugo Chávez forced AES to sell to state oil company PdVSA in 2007. It was then folded into the national utility Corpoelec.

Like gasoline, the state heavily subsidizes power, making it practically free and discouraging new investment. As the economy collapses driving Venezuelans into poverty amid the world's highest inflation, power consumption remains high because it is essentially free.

Technocrats at state companies were largely replaced by political partisans or military men loyal to Mr. Maduro, say energy experts who have tracked the sector. Mr. Motta, the current head of the state utility, for instance, is a former National Guard general with no previous experience in the sector.

Experts in energy generation in Venezuela have long warned that a dearth in investment in turbines, transmission lines and other equipment was leaving the country exposed to intermittent power failures that would at some point lead to a nationwide collapse. Venezuelan businessmen who have weathered one blackout after another for years say the big one was bound to hit the country, where about 70% of power generation comes from hydroelectric power, mostly El Guri, which is one of the biggest hydroelectric dams on earth.

The blackout also caused serious damage to equipment used by state-owned Venalum to make aluminum, crippling that entire industry in Venezuela, said employees at the plant.



The blackout plunged millions of people into darkness, including at Caracas' main international airport. PHOTO: YURI CORTEZ/AGENCE FRANCE-PRESSE/GETTY IMAGES

“We knew for many months that a general blackout would happen because of the lack of maintenance,” said Juan Pablo Olalquiaga, head of the chamber that represents Venezuelan industry.

In 2009, the country was hit by blistering drought which put a strain on Venezuela's power grid and led to widespread blackouts. In early 2010, Mr. Chávez declared an energy emergency, and

expedited the bidding process for thermoelectric power plants to increase energy supply.

In the following years, the state oil company, *Petróleos de Venezuela*, and the state energy company *Corpoelec* paid millions of dollars in mostly no bid contracts to politically connected friends, according to experts and sales documents seen by *The Wall Street Journal*.

## Paradise Lost:

### Venezuela's Path from Riches to Ruin



[VIEW PHOTOS](#)

Analysts and opposition critics say that bribes and kickbacks were paid on many of these contracts. Since then, some of the officials and contractors involved have either been indicted on corruption, bribery and money laundering charges or pleaded guilty to them.

One company, *Derwick Associates*, formed by a number of well connected young businessmen with scant experience in the power business, received about \$1.8

billion in contracts from Venezuelan state companies to buy and install turbines, paying a U.S. company about \$1 billion to do the work. *Derwick* officials said they paid no bribes to any Venezuelan officials and the prices charged by the company reflected the high costs of doing business in Venezuela.

—*José de Córdoba in Mexico City, Juan Forero in Bogotá and Ginette González in Miami contributed to this article.*

Write to Ryan Dube at [ryan.dube@dowjones.com](mailto:ryan.dube@dowjones.com)

*Appeared in the March 9, 2019, print edition as 'Countrywide Blackout Hits Venezuela.'*

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## Bianco, Todd (PUC)

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**From:** billyhoran@aol.com  
**Sent:** Saturday, March 16, 2019 12:03 PM  
**To:** Bianco, Todd (PUC); Governor (GOV); captbirdfish@gmail.com; sen-dipalma@rilegislature.gov; sen-ruggerio@rilegislature.gov; rep-mattiello@rilegislature.gov; rep-ruggiero@rilegislature.gov  
**Cc:** letters@providencejournal.com; editor@newportri.com  
**Subject:** [EXTERNAL] : The coming energy Crisis counting on the staggering cost of heavily subsidized & unreliable wind and Solar electricity.

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

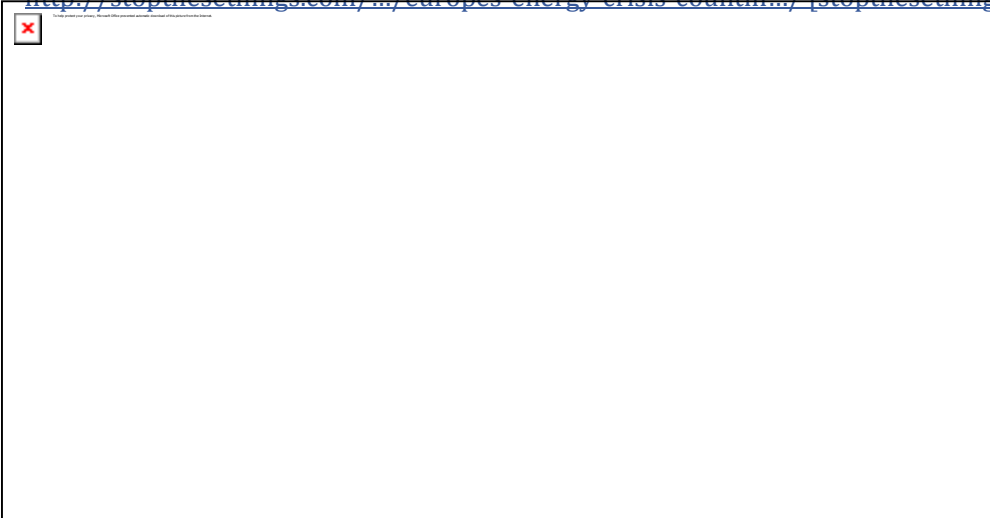
William F Horan  
1 Jean Street  
Middletown, RI 02842-4536  
billyhoran@aol.com  
401 846 5732

The coming energy Crisis counting on the staggering cost of heavily subsidized & unreliable wind and Solar electricity.  
RI needs the Burrillville Combined cycle natural shale gas fueled power plant today as a bridge enabling tomorrows game changing disruptive technologies.

Adding inherently unreliable and heavily subsidised wind and solar to your grid is a guarantee of rocketing power prices. Every place in the world that got serious about wind and solar is being belted with serious increases in electricity costs. Wind and solar 'powered' Germany and wind 'powered' Denmark pay Europe's highest power prices, by a mile, and prices in both cases are still climbing at double-digit rates. The same wind and solar industrial complex is now introducing our politicians to the same scam! Only you can halt a repeat of the already failed European wind and solar folly!

for more data see;

[http://stopthesethings.com/.../europes-energy-crisis-countin.../\[stopthesethings.com\]](http://stopthesethings.com/.../europes-energy-crisis-countin.../[stopthesethings.com])



STOPTHESETHINGS.COM

**Europe's Energy Crisis: Counting the Staggering Cost of Subsidising Unreliable Wind & Solar**

## Bianco, Todd (PUC)

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**From:** billyhoran@aol.com  
**Sent:** Thursday, April 04, 2019 3:07 PM  
**To:** eachorn@providencejournal.com; arosenberg@providencejournal.com; letters@providencejournal.com; editor@newportri.com  
**Cc:** Bianco, Todd (PUC); captbirdfish@gmail.com; Governor (GOV); rep-mattiello@rilegislature.gov; sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; louis\_dipalma@yahoo.com; rep-ruggiero@rilegislature.gov; town council@middletownri.com  
**Subject:** [EXTERNAL] : Thumbs Up on target Editorial!  
<https://www.providencejournal.com/opinion/20190403/editorial-need-for-natural-gas>

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Thumbs Up! This projo Editorial is on target! Here in New England domestic shale gas is our secure energy Bridge to The Future disruptive power generating technologies. The blockade of two new redundant domestic shale gas pipe lines across NY State & MA plus disruption of harvesting shale gas in NY State is outrageous. We must ask why RI state government & our congressional delegation has not addressed what may be an illegal blockade of free unimpeded commerce among the states?

Locally our bridge to a secure energy future dictates we must , without further delay, approve and construct the combined cycle natural gas fueled power station at Burrillville RI. This is a replacement for the local base load Brayton Point MA clean coal power station that was prematurely closed.

Those who understand that oil, natural gas, coal and nuclear run the world, mistakenly refer to wind and solar as "clean" It's time to challenge such! Yes, with wind and solar you don't see anything getting burned like you do with oil, natural gas, and coal.

Air pollution from fossil fuels in the USA has been in steep decline since 1970. That drop across all six pollutants the EPA classifies as dangerous took place as citizens increased their fossil fuel use by 40 percent. From 1988 to 2015 our vehicle miles traveled have more than doubled! So as America has grown we've used more fossil energy, traveled a lot more and yet the air we breathe has continued to get cleaner. Those who are worried about energy-related CO2 emissions, they've been in decline for more than a decade. Since 1970, the pollution coming out of vehicle tailpipes has been reduced by 99 percent, per the EPA.

Many still think wind & Solar is clean because we don't burn them! They aren't created from magic dust. Manufacturing solar panels and windmills requires significant mining for resources, especially for rare earth minerals. China owns 95% of the rare earth market. Their mining projects are creating giant, toxic and radioactive lakes. It's a serious problem for decades to come. The "total carbon foot print" amount of materials and energy consumed to mfg industrial wind and solar farms apparatus is massive! Yes, we have those numbers but lack space to comment further.

The issue of land use? The US Energy Information Administration estimates that natural gas, and coal use about 12 acres of land per megawatt of electricity produced. Solar and wind gobble up four and six times the amount of land that coal and natural gas do. So, what's so clean about that?

There are other environmental impacts to consider. Industrial wind and solar projects kill a lot of wildlife. Wind turbines alone are estimated to kill 600 thousand birds a year along with a million bats. The bats are very important to our ecosystem because they are essential to pollination & insect control. Wind turbines cause visual blight and have documented negative health impacts for the people who live around them, like noise, shadow flicker, and vibrations etc.

Let's remember that fossil fuels have been running the world since they began fueling the industrial revolution and still carry more than 80 percent of the load. Wind and solar (after significant investment) contribute less than approx three percent (3%) to our energy use and for that small amount of power, we're dealing with a significant amount of

environmental nastiness and net net a huge carbon foot print!. Finally have a relatively short useful life Vs a high life cycle unit cost.

The point is to recognize (based on the numbers) wind & solar weakness is, while not obvious, these technologies lack a net net economy of scale! The more W&S added to the electricity grid causes negative economic & technical factors to come in to play. This rapidly detracts from their viability. Hirth a German economist (in a paper published 2013 in Energy Policy) determined that the economic value (benefit) of wind on the European grid would decline (reduce) 40 % once it becomes 30 % of electricity produced. While the economic value (benefit) of solar would decline (reduce) by 50 percent when it got to just 15 % of electricity produced! The strengths it / W & S is essentially suited for sun belt deployment and or as remote off grid power sources. It's ridiculous to say fossil fuels are dirty while wind and solar are cleaner or less costly as such is not to case!

All energy sources and technologies have their impacts, but in the case of oil, natural gas and coal, there have been astonishing improvements over the past half-century. They are much, much cleaner and getting more so all the time. Never the less disruptive technologies ultimately can better sustain our energy security and will result in cleaner, lower cost and a reduced environmental foot print.

The good news it is not necessary to eliminate flying or trade your vehicles & reduce standard of living in exchange for a horse and buggy. Because of energy development the earth can sustain today's population while significantly improving quality of life.

Last, a personal concern - please recognize that we are embracing punitive taxation policies that is causing the negative economic forces. Those forces resulting in a destruction of precious farm and forest lands. The temporary, "alleged benefit", Deploying wind and solar on that precious land does not mitigate the root cause, negative impact or justify the crime!

The question that elected officials ultimately are obligated to answer is - ***Why, if solar and wind are so cheap, they are making electricity so expensive? Today's continued subscription to what may be politically motivated pseudo science is an unsatisfactory rational to have based public policy choices.***

## Bianco, Todd (PUC)

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**From:** William F Horan <BillyHoran@aol.com>  
**Sent:** Monday, April 08, 2019 6:50 PM  
**To:** Governor (GOV); rep-mattiello@rilegislature.gov; sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; rep-ruggiero@rilegislature.gov; editor@newportri.com; letters@providencejournal.com; louis\_dipalma@yahoo.com; Bianco, Todd (PUC)  
**Cc:** ka1rm@aol.com; mldax@aol.com; William F Horan; robvi3@gmail.com; dinorobertiri@gmail.com  
**Subject:** [EXTERNAL] : Group would explore Green New Deal's impact on R.I.

**Follow Up Flag:** Follow up  
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<https://www.providencejournal.com/news/20190307/group-would-explore-green-new-deals-impact-on-ri>

Sent from [Mail \[go.microsoft.com\]](mailto:mailto:go.microsoft.com) for Windows 10

We must approve and build the Burrillville Power Station as a bridge to a realizable disruptive technology future. See the three urls listed for additional information.

This alleged green new deal is the same old green deal in drag. Yes, Yet another wind and solar industrial complex pseudo science SCAM embraced by the virtue pedaling alt radical left victim hood marchers.

Wind and solar is a road map to nowhere. Yes, big picture for a little state.

Free pdf book here <https://www.roadmaptonowhere.com/>

Free Video here <https://www.youtube.com/watch?v=V2KNqluP8M0> (some additional detailed videos follow if you have the time to watch).

The case of the good power station reactor;

<https://spark.adobe.com/page/1nzbgqE9xtUZf/...>

wake up people.

William F Horan

1 Jean Street

Middletown, RI 02842-4536

401 846 5732

billyhoran@aol.com

## Bianco, Todd (PUC)

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**From:** billyhoran@aol.com  
**Sent:** Saturday, April 13, 2019 10:44 PM  
**To:** louis\_dipalma@yahoo.com; sen-dipalma@rilegislature.gov; Bianco, Todd (PUC)  
**Subject:** [EXTERNAL] : Your Newport meeting last week + Fwd: Mike's Presentation et al  
**Attachments:** Energy&Power Part 3 Mike Armenia.pptx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Lou  
First - Your work on getting to root cause of the most recent ngas distribution system failure is noteworthy and appreciated.

I think that this NPDN aka projo jr reported outage from The Aquidneck Island Planning Commission dog and pony show reflect that majority of RI Pols totally missed the mark in terms the energy / power / electricity Big Picture.

Apparently, contrary to the abundance of negative data RI does not pause! Rather still blindly subscribes to the wind and solar road map to nowhere.

Further incorrectly clings to bad assumptions that additional installs of wind and solar equate to approaching parity with legacy power stations that they are attempting to replace. Independent Analysis based on German economist analysis has been around for several years debunking those assumptions!. I did a five part piece on it that was published in go local prov.

Regards,  
Bill

\*\*\*\*\* PS Today here in RI we need the Burrillville RI combined cycle domestic shale gas fueled power station. Additionally the blockade of redundant ngas pipe lines especially across NY state and MA must be reversed. The above is what provides the bridge to tomorrows disruptive technologies!

## [Newport County legislators talk energy infrastructure, education at annual forum \[newportri.com\]](#)

Eight Newport County legislators participated in a forum hosted by the Aquidneck Island Planning Commission on Thursday. Here are the highlights:

Posted at 1:28 PM

-----Original Message-----

From: billyhoran <billyhoran@aol.com>

To: jsheila17 <jsheila17@verizon.net>; ssw2 <:ssw2@cox.net>

Cc: raymondjanssen <raymondjanssen@aol.com>

Sent: Sat, Apr 13, 2019 2:49 pm

Subject: Fwd: Mike's Presentation et al

Jack, Saul, Ray

Great to see you last week at the Raytheon retirees lunch.

Follow up on our conversation;

Wind and solar is a road map to nowhere. Yes, big picture for a little state.

Free pdf book here <https://www.roadmaptonowhere.com/> [[i.facebook.com](#)]

Free Video here <https://www.youtube.com/watch?v=V2KNqIuP8M0> [[youtube.com](#)] (some additional detailed videos follow if you have the time to watch).

The case of the good power station reactor;

<https://spark.adobe.com/page/1nzbqqE9xtUZF/...> [[spark.adobe.com](#)]

I have as well attached a most recent summary presentation Energy&power part 3 Mike from Mike Armenia our resident nuclear power / energy expert.

This is not your fathers nuclear power station technology etc!!!!!!!!!!!!!!

Bill Horan

wfh

I published the info below in go local prov in response to a slick news infomercial video promoting one of the local RI contractors responsible for selling the solar and wind industrial scaled junk to our local policy makers. <https://www.golocalprov.com/live/Green-Developments-Morini-How-Wind-and-Solar-Will-Transform-RI's-Ability-golocalprov.com>

1-5

### **[William F Horan \[facebook.com\]](#)**

Wind and Solar installs Drive RI's In-Ability to Combat man made pollution & Spiraling electricity cost!

Debunked - those critical of RI National Grid for majority of electricity cost growth!!!

The old green deal of industrial scale wind and solar is an ill conceived and implemented failure!

The green new deal (return to the dark ages) is even more dangerous to the survival of our Republic.

The misrepresented climate / GEO cycle - claiming that man is capable of moderating such is far fetched!

However, the human component of pollution is becoming better quantified. The only available solution today is employing disruptive technologies. The two noteworthy are; a) domestic shale gas fueled combined cycle natural gas power stations creating a Bridge to the future.. b) Tomorrow a massive deployment of generation IIIA Fission Reactor power stations and subsequent Generation IV fission LFTR (thorium fueled) Reactor power stations. These disruptive technologies among the few scalable solution capable of addressing a defined man made pollution component today & tomorrow.

Do Local elected officials find it convenient allowing National Grid to become the lightning rod for everything associated with the electricity spiraling cost and companion reduction in predictability, reliable and affordability?

2-5

### **[William F Horan \[facebook.com\]](#)**

The question that elected officials ultimately are obligated to answer is - Why, if solar and wind are so cheap, they are making electricity so expensive? Today's continued subscription to what may be politically motivated psudo science cult like belief is an unsatisfactory rational to have based public policy choices.

This topic becomes a convoluted discussion of political bias / agenda and a dangerously indoctrinated public. Further confused from a lacking energy/ power - electricity illiteracy. Today an indoctrinated public & elected policy makers give so called green renewables a pass. Further, MSM often avoids taking a skeptical position on politically

motivated & subsidized by big money - big project / government agendas. Yes, even ones as important as energy and the environment!

Public energy/power/electricity policy has many moving parts determined nationally plus individual states (influenced by international Industrial lobbyist & global politics). Such drives the true total cost of a electricity end product. The technologies employed influences so called total life cycle pollution bi-products. The local State PUC influence has been reduced by force of Federal Government regulation. The New England regionally franchised service providers INCLUDE; Energy - fuel (variety of acquisition companies), ISO New England (energy conversion to electricity), and National Grid (electricity/power distribution). We are overdue in a critical public conversation on how RI has arrived at today's spiraling cost of electricity. Like Europe before us we are rapidly approaching a critical lack of affordability. Yes, with decisions prioritized from the top affordability by the end user was given only lip service. The declared virtuous so called Green renewable methods were predetermined, force fed and subsidized approaches. The more than willing to spend tax payer monies Solar and wind Industrial complex was established along with a UN Global propaganda apparatus in charge of chicken little the sky is falling mixture of fact & Fables. The UNIPCC alone destroying any credibility in reducing man made pollution components. That is masking a global wealth seizure and redistribution / Tax agenda, still in play! Again to extract our-self from this self induced calamity we must better identify the facts & viable options from which to select for establishing a secure energy/ electricity/power future while reducing human pollution byproducts..

3-5

### [William F Horan \[facebook.com\]](#)

Examination of the green old deal we have endured should provide the bases for a conversation that provides a bridge from which to abandon this confluence of events. Today, moving on to viable disruptive technologies securing our energy future.

The question Vs. findings; Just a walk through the numbers renders a shocking conclusion!

The advertised declining price of solar panels and wind turbines continues. The Public is left with the false impression that the more solar and wind energy we produce (an economy of scale) , the lower electricity prices will become. Totally Wrong! In fact, it's the opposite. The infomercials tell us us that - Years 2009 to 2017, the price of solar panels per watt declined by 75 % while the price of wind turbines per watt declined by 50 %. However - During the same period prices of electricity in regions that deployed significant quantities of so called green renewable increased dramatically. Electricity prices increased by: 51 % in Germany during its expansion of solar and wind energy from 2006 to 2016; 24 % in California during its solar energy build-out from 2011 to 2017; over 100 % in Denmark since 1995 when it began deploying renewables (mostly wind like our Deep Water Wind Corp now merged with European interests looking for new markets. ). Yes, wind is net net even less attractive be it deployed on land or at sea! If solar panels and wind turbines became so much cheaper, why did the price of electricity rise instead of decline? One guess was that while electricity from solar and wind became cheaper, other energy sources like coal, nuclear, and natural gas etc. became more expensive, eliminating any savings, and raising the overall price of electricity. But, Wrong, that's not what happened.

The price of natural gas declined by 72% percent in the U.S. between 2009 and 2016 due to the fracking revolution. In Europe, natural gas prices dropped by a little less than half over the same period.

The price of nuclear and coal in those locations during the same period was mostly flat.

Another Guess was that the closure of aged nuclear plants resulted in higher energy prices.

Evidence for this guess in-part comes from the fact that nuclear energy leaders Illinois, France, Sweden and South Korea have some of the cheapest electricity in the world. The facts - Since 2010, California closed one nuclear plant (2,140 MW installed capacity) while Germany closed 5 nuclear plants and 4 other reactors at currently-operating plants (10,980 MW in total).

Electricity in Illinois is 42 % cheaper than electricity in California while electricity in France is 45 % cheaper than electricity in Germany. However this guess is debunked by the fact that the price of the main replacement fuels, natural gas and coal, remained low, despite increased demand for those two fuels in California and Germany. Also around the country nearing end of life older technology coal and nuclear power stations continue to be closed. However low energy density Industrial wind and solar can't be economically scaled up as a replacement electricity source. Let me not forget that today Germany is engaged in a massive return to new coal fueled power stations!!

4-5

[William F Horan \[facebook.com\]](#)

That leaves solar and wind as the Root causes behind higher electricity prices! Why would alleged cheaper solar panels and wind turbines make electricity more expensive? The root cause was predicted by Leon Hirth a German economist in 2013. In a paper for Energy Policy,

Hirth estimated that the economic value (benefit) of wind and solar would decline significantly as they become a larger contribution to our electricity supply! The rationale; a fundamentally unreliable nature for both solar and wind produce too much electricity when customers don't need it, and not enough electricity when they do. Solar and wind thus require that natural gas plants, hydro-electric dams, costly unscaleabl batteries plus some other form of reliable lower cost power be ready at a moment's notice to start generating electricity when the wind stops blowing and the sun stops shining. During conditions of low electricity demand / over production cycles requires solar- and/or wind-heavy places like Germany, California and Denmark to pay neighboring nations or states to take their solar and wind energy at deep discount prices. This situation is a very poor business model i.e. more hidden subsidies. Yes, solar and wind need natural gas as a key component to even be considered as a pwr grid source!!! Hirth determined that the economic value (benefit) of wind on the European grid would decline (reduce) 40 % once it becomes 30 % of electricity produced while the economic value (benefit) of solar would decline (reduce) by 50 percent when it got to just 15 % of electricity produced!

The two graphs below depicts the negative dynamics of increased wind and solar;  
uncaptioned image / note go local does not allow my graphs!?

In 2017, the share of electricity coming from wind and solar was 53 % in Denmark, 26 % in Germany, and 23 % in California. Denmark and Germany have the 1st and 2nd most expensive electricity in Europe!

By reporting on the declining costs of solar panels and wind turbines but not on how those electricity generating methods increase electricity prices, the wind & Solar Industrial complex et al are misleading policymakers and the public about those two technologies suitability!

The LA Times reported that California's electricity prices were rising, but failed to connect the price rise to so called green renewables, provoking a rebuttal from UC Berkeley economist James Bushnell. "The dominant policy driver in the electricity sector has unquestionably been a focus on developing renewable sources of electricity generation."

Part of the problem is that most don't understand electricity i.e the difference between energy/electricity/power.. They think electricity is a commodity when in fact it is a service e.g. energy acquisition, conversion and distribution. The price we pay isn't just the cost of the ingredients / fuel & physical components , like solar panels and wind turbines etc, where purchase costs are alleged to decline. Rather, the price of services like electricity reflect the cost not only of a few ingredients and physical apparatus employed but also their preparation, processing and delivery.

This topics examination has become a discussion contaminated by political bias and a indoctrinated public lacking energy illiteracy. Normally indoctrinated public & public policy makers often give alleged renewables a pass. That is MSM often avoids taking a skeptical position on politically motivated & subsidized big money / big government agendas. Yes, even ones as important as energy / electricity and the environment.

Again, a timely task would be for policy makers and public to investigate is why, if solar and wind are so cheap, they are making electricity so expensive.

5-5

[William F Horan \[facebook.com\]](#)

Post # 5 of 5

Again, a critical question for policy makers and public to investigate is why, if solar and wind are so cheap, they are making electricity so expensive.

Going further;

While not discussed in detail a related observation. If one accepts measures of CO2 & toxicity / human induced waste materials as the bench mark - I must report that a generation IIIA or a Generation IV Th fueled fission reactor install has an attractive life cycle foot print that is significantly lower than other methods of power generation! That



topic is yet another set of facts critically important for choosing & employing disruptive technologies intended to secure our energy / power/ electricity future. RI Jr US Senator Sheldon Whitehouse was a member of a bipartisan group that authored & successfully passed bills aligning the National Labs to support realizing a deployment of modern nuclear power stations as the answer to retooling the nations electricity production. President Trump signed those Bills. These efforts are continuing with related bills in the present US congress!

William F Horan

PS We must tell RI Gov Raimondo & The RI General Assembly that this alleged renewable & green Wind and Solar electricity SCAM is a dangerous journey on a "Roadmap to Nowhere"!

further reading;

Wind and solar is a road map to nowhere. Yes, big picture for a little state. Free pdf book

here <https://www.roadmaptonowhere.com/> [[l.facebook.com](#)]

Free Video here <https://www.youtube.com/watch?v=V2KNqLuP8M0> [[l.facebook.com](#)] (some additional detailed videos follow if you have the time to watch).

The case of the good power station reactor;

<https://spark.adobe.com/page/1nzbqqE9xtUZF/...> [[spark.adobe.com](#)]

## Bianco, Todd (PUC)

---

**From:** William F Horan <BillyHoran@aol.com>  
**Sent:** Thursday, April 25, 2019 1:59 AM  
**To:** letters@providencejournal.com; editor@newportri.com  
**Cc:** louis\_dipalma@yahoo.com; Bianco, Todd (PUC); captbirdfish@gmail.com; dinorobertiri@gmail.com; Governor (GOV); rep-mattiello@rilegislature.gov; sen-ruggerio@rilegislature.gov; rep-ruggiero@rilegislature.gov; sen-dipalma@rilegislature.gov  
**Subject:** [EXTERNAL] : Letter: Rose Kerry: We can have both solar energy and wild land

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

<https://www.providencejournal.com/opinion/20190424/letter-rose-kerry-we-can-have-both-solar-energy-and-wild-land>

Sent from [Mail \[go.microsoft.com\]](mailto:mailto:go.microsoft.com) for Windows 10

Rose – Clearly some energy/power literacy is lacking. Yes you have learned well the topical infomercial. The only problem such is based on some bad info.. Let me point you to three links such that you may avail yourself of the facts to quantify, compare and relate to a host of rational & affordable solutions. OBTW your are not alone in having drank the sugar laden Kool-Aid. RI Governor Gina Raimondo and The RI General Assembly have exhibited the same topical energy/power literacy deficit. Big picture for a little state. Wind and solar is a Road Map to nowhere yesterday, today and tomorrow. Yes, the dog whistle of so called global warming is often rolled out as justification however the earths natural climate / GEO cycle we must endeavor to better understand little practical action is at hand. Keep in mind that wind, solar and natural gas / big oil have become a defacto TRIAD. Because unreliability of W & S electricity require a companion 24/7 ngas stand by back up source! Hence ngas pipe line capacity issues & a new Burillville Ngas fueled power station - also a positive bridge to tomorrows disruptive power technologies.

Free pdf book here <https://www.roadmaptonowhere.com/> [[roadmaptonowhere.com](https://www.roadmaptonowhere.com/)]

Free Video here <https://www.youtube.com/watch?v=V2KNqluP8M0> [[youtube.com](https://www.youtube.com/)] (some additional detailed videos follow if you have the time to watch).

The case of the good power station reactor;

<https://spark.adobe.com/page/1nzbqqE9xtUZF/...> [[spark.adobe.com](https://spark.adobe.com/)]

William F Horan  
1 JEAN STREET  
Middletown, RI 02842-4536  
[billyhoran@aol.com](mailto:billyhoran@aol.com)  
4018465732

## Bianco, Todd (PUC)

---

**From:** billyhoran@aol.com  
**Sent:** Monday, May 06, 2019 5:37 PM  
**To:** capbirdfish@gmail.com; Bianco, Todd (PUC); Governor (GOV); rep-mattiello@rilegislature.gov; sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; rep-ruggiero@rilegislature.gov  
**Cc:** letters@providencejournal.com; editor@newportri.com; louis\_dipalma@yahoo.com; dsharp401@gmail.com  
**Subject:** [EXTERNAL] : Critical New England's Infrastructure Problems / solutions!  
**Attachments:** Energy&Power Part 3 Mike Armenia (1).pptx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

RI Governor Raimondo

Why haven't we here in Rhode Island (Governors office / RI PUC plus RI Congressional Delegation) taken action to engage assistance at the Federal level to void the defacto blockade of critically needed domestic shale gas delivery to New England?

Clearly both new natural gas transmission lines and modernization / increasing capacity for existing natural gas transmission lines is very critical.

Securing an affordable and reliable supply of natural gas is among today's first priorities. We must secure a reliable supply of natural gas for existing power stations plus support construction of The Burrillville Combined Cycle natural gas fueled power station. This correction in policy priorities is key to establishing a bridge allowing for tomorrows non polluting disruptive technologies to become available.

The parallel path much of New England is presently following is a road map to nowhere. I urge you to better acquaint yourself with the facts, numbers and data. That rigorous examination once performed for all the candidate options identifies a different approach points to a much different solution that RI is embarked on today. .. One will first conclude that Industrial Wind and Solar apparatus, while oversold and politically popular, especially for New England is the wrong choice for yesterday, today and tomorrow, One only needs to examine the bottom line failures that have resulted all across Europe were a very similar set of choices was implemented and failed to provide the advertised level of technical, cost performance or versatility.,.Those companies having lost their home markets have arrived on our shores buying into similar local companies and ready to repeat the very similar implementations hence a very similar sub par outcomes can be expected.

Both the attached presentation and the links listed below provides an up to date brief for "The Dynamics of Energy Security". That is most of the moving components that must be managed in securing and even improving our Energy future especially here at home in Rhode Island.

As you know energy acquisition, conversion and distribution is the under pinning for our modern society and the foundation enabling wealth creation, opportunity, and sustains the velocity of exchange among citizens.

I look forward to bold action from our elected officials in plotting an aggressive new course that is based on facts, data and sensitive to markets and technologies such that Rhode Islands secures a much more deterministic energy future and a companion prosperity.

William F Horan  
1 Jean Street  
Middletown, RI 02842-4536  
BillyHoran@aol.com  
401-846-5732

Wind and solar is a road map to nowhere. Yes, big picture for a little state.

Free pdf book here <https://www.roadmaptonowhere.com/> [[I.facebook.com](#)]

Free Video here <https://www.youtube.com/watch?v=V2KNqIuP8M0> [youtube.com] (some additional detailed videos follow if you have the time to watch).

The case of the good power station reactor;  
<https://spark.adobe.com/page/1nzbqgE9xtUZF/...> [spark.adobe.com]

-----Original Message-----

From: Energy Nation <info@energynation.org>  
To: William Horan <billyhoran@aol.com>  
Sent: Mon, May 6, 2019 12:50 pm  
Subject: New England's Infrastructure Problem



[\[energynationapi.cmail20.com\]](mailto:energynationapi.cmail20.com)

Dear William,

The U.S. being the number one producer of natural gas and oil in the world, one would think that we should not have a problem making sure all New Englanders have access to reliable and affordable energy. However, that is not the case.

Some energy providers in New York are unable to take on new natural gas customers because they can't meet the demand due to a lack of pipelines. If our elected officials do not change course, this problem will only get worse.

**Our elected officials are putting special-interest groups ahead of the need for these critical pipeline projects.**

---

"Too often, badly needed energy infrastructure is being held back by special-interest groups, entrenched bureaucracies and radical activists." -President Trump

---

As an industry member, you know the need for these pipeline projects and understand the real facts behind their safety. We must spread the word about why we need to expand natural gas infrastructure and dispel the false claims anti-energy activists spread about pipelines.

The future of our industry depends on expanding energy infrastructure. Let's keep working to ensure that anti-energy activists don't stop these important projects from being built.

If you haven't done so already, check us out on [Facebook \[energynationapi.cmail20.com\]](https://www.facebook.com/energynationapi.cmail20.com) and [Twitter \[energynationapi.cmail20.com\]](https://twitter.com/energynationapi.cmail20.com). This is a great way to spread the word and get involved!



[\[energynationapi.cmail20.com\]](mailto:energynationapi.cmail20.com) [\[energynationapi.cmail20.com\]](mailto:energynationapi.cmail20.com)

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**Another  
New Deal ?**

**Yes.  
Green Everything!  
Solar and Wind  
Jobs For Everybody!  
\$160 Trillion**



## Green New Deal Big Picture



**There is only one way  
to reverse Global  
Warming!**

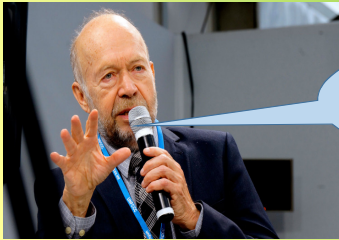
Michael Armenia  
Engineer  
April 11, 2019

## Acronyms & Definitions

- GND – Green New Deal
- IPCC – (UN) Intergovernmental Panel on Climate Change
- GHG – Green House Gas e.g. Carbon Dioxide and Methane
- Net-Zero GHG – An Energy source that consumes as much CO<sub>2</sub> as it produces, eg Ethanol gas.
- PWR/LWR– Pressurized Water Reactor , Light Water Reactor
- SMR – Small Modular Reactor >>>
  - MSR – Molten Salt Reactor (a particular kind of SMR) >>
  - LFTR – Liquid Fluoride Thorium Reactor (a particular MSR)
- RENEWABLES = energy from Biomass, Hydro, Water, Wind, Solar, Geothermal
- WWS – 3 kinds of “popular” renewables      **Wind.....Water.....Solar**
- Power – the **Capacity** to produce **Energy** e.g. horsepowers or Watts
- **Energy** – **Power** expended over **Time** e.g. watt-hours

Bottom Line Up Front- We can do a GND much easier with Nuclear Power.

Scientist



**Nuclear is the only way to reverse Global Warming!**

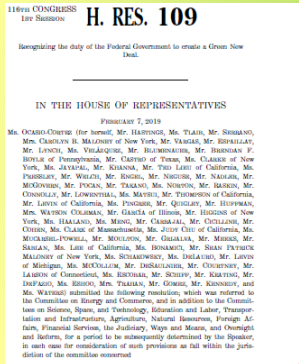
**Solar and Wind For Everybody!**










Visionary

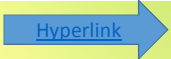


# The anti-nuclear Green New Deal - Top Line Goals



**For all peoples in the USA :**

- Economic security 
- High-quality health care 
- Affordable Housing 
- Clean water 
- Clean air 
- Affordable food 
- Access to nature 



## GND USA Projects. Complete in ????? years.

- 100% “power” from **WWS** (Wind, Water, Solar)
- Rebuild energy infrastructure for **WWS**.
- Net-Zero GHG Emissions all sources (power plants). Plus industry, transportation, residential, commercial.
- Remove GHG from the atmosphere using “**low tech**” resources (eg trees).
- Insulate “**every**” building.
- Protect properties from sea rise, fires, floods, wind and droughts.
- Clean up **wastes**.
- Employ “**everybody**”, stop sending jobs overseas.
- Pay for **other countries’** Green New Deals

## USA GND Engineering Hiccups

- 100% “power” fm WWS(Wind, Water, Solar)? 100%WWS “power” is **NOT 100% energy!**
- Rebuild energy infrastructure. **Rebuild every road and bridge in US?**
- Net-Zero GHG Emissions, all sources: power plants. Plus industry, transportation, residential, commercial. **But USA emissions inconsequential vs the World.**
- Remove GHG with “low tech” trees and land. **First stop cutting forests?**
- Insulate every building. **Large buildings can’t be ripped. Small don.t matter.**
- Protect from sea rise, storms, fires, floods, droughts. **How much? How often?**
- Clean up wastes. **Start w coal ash? First shut down 70% of world’s energy =coal?**
- Employ everybody, stop sending jobs overseas. **What jobs? Limit immigration?**
- Pay other countries’ Green New Deals. **Tell that to Aus, Indonesia, Russia. 65% coal.**

Current TV add : FPL? Add 30 million solar panels.

$30 \times 10^6 \times 20 \text{ Watts/panel} = 600 \times 10^6 \text{ watts}$  at 100 % capacity factor. Ie 600 MWatts

$600 \text{ Mwatts} \times 20\% \text{ CF} = 120 \text{ MW} = 4 \text{ } 30 \text{ MW}$  gas turbines near Sams Club in Cocoa .

**“Net-zero” GHG won’t stop Global Warming.  
Must suck it back out.**

- Solar and Wind – can’t suck CO2 back (last presentation). Unscalable. Man on moon easy compared to cost and energy needed to **reverse** CO2.
- Nuclear: the only (available) clean, powerful, safe, “endless”.  
Safety: Coal killing millions/year vs Nuclear 100s ever.
- Duped? Nuclear Power plants = bombs? Go to this link: [EnvironmentalProgress.org](http://EnvironmentalProgress.org) for discussion.

## Sierra Club History : Fear of a nuclear population explosion 1966.



“If a doubling of the state’s population in the next 20 years is encouraged by providing the power resources for this growth, [California’s] scenic character will be destroyed.”


— David Brower, Sierra Club Director, 1966



Source: Thomas Wellock, *Critical Masses: Opposition to Nuclear Power in California, 1958 - 1978*, (University of Wisconsin Press, 1978)


Amory (Jekyll/Hyde) Lovins – Renewables -Really?  
Anti-nuclear– definitely. Why?

“It is, above all, the sophisticated use of **coal**, chiefly at modest scale,  
that needs development. “ **Amory Lovins 1976**



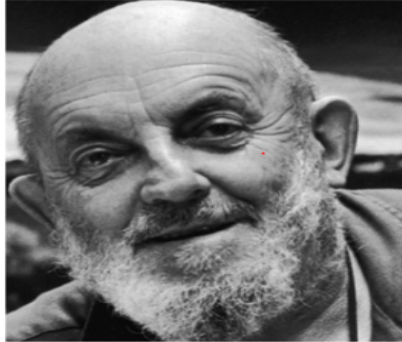
“It’d be little short of  
disastrous for us to discover a  
source of clean, cheap,  
abundant energy *because of  
what we would do with it.*”

— Amory Lovins, **Sierra Club advisor,**  
1977 (emphasis in the original)



Source: Mother Earth News, Playboy Interview, 1977, <http://www.mothersjourn.com/intermed/energy/amory-lovins-energy-analyst-amoc27hdg9w>

## Sierra Club Differences of Opinion 1983



"Nuclear energy  
is the only  
practical  
alternative that we  
have to  
destroying the  
environment with  
oil and coal."

— Ansel Adams,  
photographer, Sierra  
Club Director, 1983

Dr. Jekell/Hyde Lovins starts selling Renewables Engineering to customers

## Popular Opinions: Nuclear Reactors and Solar Energy

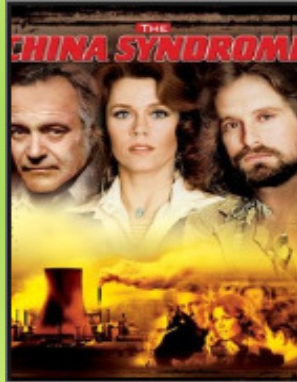
1. Nuclear could easily power civilization. **Correct:** Sierra promoted this in 60s. France actually did it in 15 years.
2. Reactor manufacture uses more GHG than Solar or Wind. (Wrong).
3. Reactor radiation cancerous even in small amounts. **(Wrong)** – larger amounts always in the earth, **coal**, rocks, your food and body).
4. Reactor accidents kill millions. **(Wrong)** – numbers from WHO, EIA, IEA, and Radiation Oncologists is hundreds not millions.)
5. *The Sun can power the world using modern solar panels.* **(Wrong).**
6. Sun radiation is cancerous even in small amounts. **(Correct: frog in a pot.)**



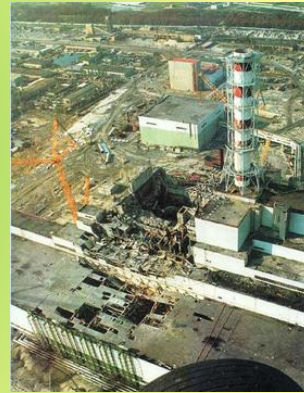
## Are Nuclear Reactors like Bombs?



Aug 1946



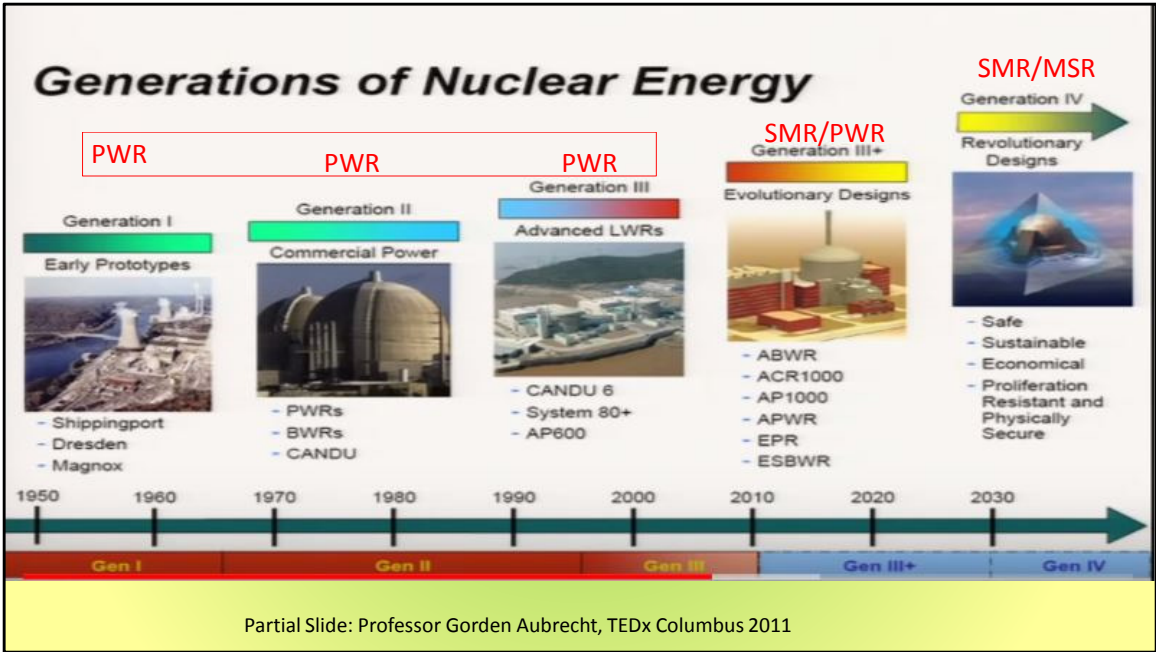
1979



1986

Cognitive Dissonance discussion .

Why am I going to believe this guy standing in front of me telling me exactly the opposite of what Good Green Environmental people have been telling me all my life: namely that nuclear reactors and bombs are pretty much the same animal. If I try to convince you otherwise I am asking you to hold two contradictory ideas or memes in your brain. This is called cognitive dissonance. Psychologically it is painful. Especially if you hold the old belief as part of an ideological group, a faith group or even an environmental group like Sierra or NRDC.



James Hansen says: Molten Salt Reactor (MSR) solves Pollution and GW.  
Engineers say: Please let us build them in USA!



Thorium energy is inexpensive and clean in a liquid-fluoride thorium reactor (LFTR) aka MSR

Th fuel is easily mined.

The energy is carbon free.

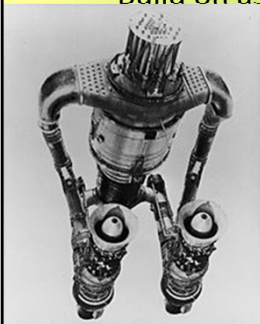
Your lifetime's supply of energy in the palm of your hand.

Thorium, atomic number 90, weight 232, in our gardens, in your granite countertop, in your porcelain toilet, abundant, everywhere, slightly radioactive (10 % of BG) , easily mined and safe to handle. This fuel is by far the only **existing**, practical and safe solution to the planet's energy needs. Your personal lifetime energy from Th fits in the palm of your hand.

When I met NASA scientist **Kirk Sorensen** in 2011, I became very interested in thorium. I was trained in nuclear science in college and in the Navy. Thorium reactor designs are simply not taught. Kirk told me about the obscure team at OR TN that prototyped a thorium reactor 50 years ago, during the **Manhattan Project**. Kirk met the few surviving engineers that worked on that team. They confirmed the success of the technology. That and the thousands of engineering records he reviewed convinced him to start Flibe Energy Inc, to build his modern design in the USA. It is called Liquid Fluoride Thorium Reactor LFTR ("Lifter"). The company is called Flibe because he uses a mixture of **Fluoride** salts of **Lithium**, and **Beryllium**, as the coolant and fuel carrier all in one.

## The Weinberg humanitarian reactor – 1960s

- **Not** designed for weapons (MP did that and then “transitioned”).
- Designed for aircraft. (Yes we can. AF did. Yes tested. Navy killed it.)
- Build it **today** for GNDdeal – no dangerous waste, can’t explode or melt down. Can burn-up existing weapons.
- Build on assy line with no radioactivity. Deliver on trucks.



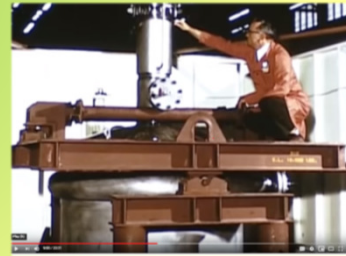
... salt for transport and liquid when heated in the reactor.

... t Reactor (MSR).

... eled MSR aka LFTR

... ide Thorium Reactor (LFTR)

SMR > MSR > LFTR



## MSR/LFTR is a Generation4 elegant machine

- Prototyped at Oak Ridge National Lab 1960s.
- Championed by Dr. Alvin Weinberg, Head ORNL
- Weinberg a visionary humanist- wanted power reactors divorced from weapons.
- US Dept of Energy and Navy did not agree. Weinberg – ousted.
- Weinberg legacy lives on with Engineers. He is unknown in Sierra, NRDC, Greenpeace, Friends of Earth and most environmentals.
- His work re-born in scientifically literate countries.
- Where are these countries? (Hint: look at our engineering schools).
- How many, at what cost could these reactors be built? 18,000 for \$18T

Ref: M. Armenia Presentation to IEEE:

Analysis of Mark Jacobson WWS vision from Scientific American 2009.

18,000 1 GWe SMR plants.

GMD cost \$115 to \$160 Trillion.

Assume half goes to solar, wind, water storage and grid infrastructure

Median is  $115 + 22 = \$137$  Trillion

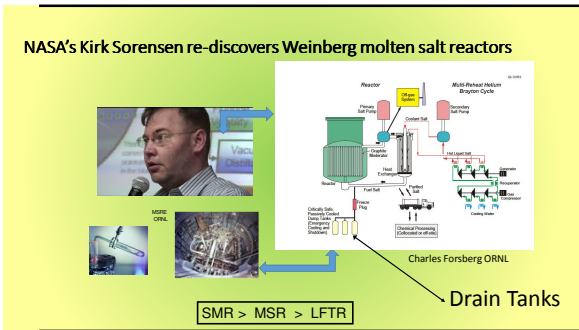
A current Gen 3 reactor is about \$10B.

A standard design MSR using Th would be about the cost of an assembly line large passenger jet. \$1B

$\$1 \times 10^9 / \text{reactor} \times 18 \times 10^3 \text{ reactors} = 18 \times 10^{12} = 18 \text{ Trillion dollars}$

$138/18 = 7.6$

$18/138 = 13\%$



Enter NASA's Kirk Sorensen, circa 2005, working on planetary colonization about a year before Weinberg's death. Kirk visited OR to find Weinberg's work declassified and of all places moved in boxes to a nearby children's museum. **Kirk** scanned hundreds of docs electronically onto CDs then to a public internet wiki site. Then Kirk, thinking of his children and the museum said, to hell with the moon. This machine is really needed on **planet Earth now**. He left NASA and set up his own company in 2011 to license and mass-produce LFTR reactors suitable **for sliding into existing coal plants on Earth**.

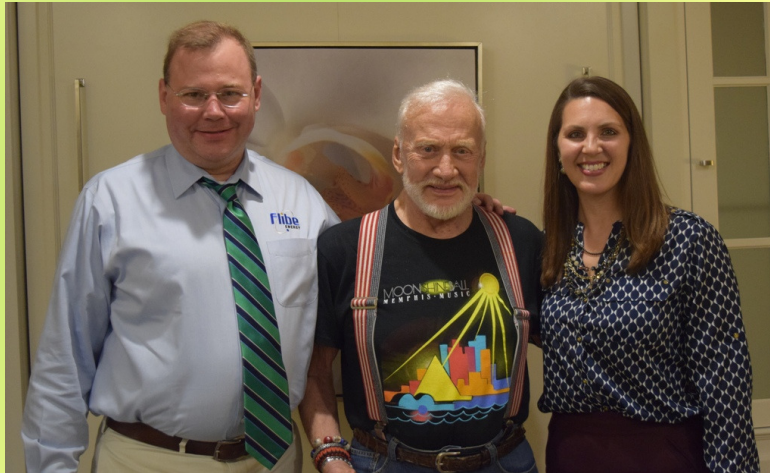
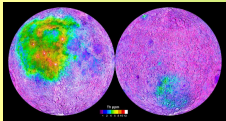
In 2012 I went to Huntsville AL to meet Kirk and listened with my ears on nuclear fire. I took back **copies** of the CDs – I dove into them. I realized Kirk had re-discovered a **Black Swan** miracle machine that was never taught to engineers like myself in my nuclear engineering classes.

But the **political** landscape was also on fire in 2011 with Fukushima: **the radiation fear elephant** was out in the open, running rampant in the halls of congress cheered on by Big Oil lobbyists. The **press** headlined it like this: **“20,000 people dead, comma, nuclear meltdown.” Both those statements were true.** But no one died from the Japan meltdowns and no-one will. The press then amped up the fear with a cartoon of radiation detected in CA from Japan. Well yes, we can measure radiation as individual decay counts – and Fukushima produced short-lived, very low atmospheric levels compared to background. The press should have followed up their story the next day with this: “today, cosmic radiation pierced our atmosphere at trillions of times the Fukushima levels yesterday? But they didn't. Instead they moved on to radioactive fish.

Only a **small group** of scientists had discovered Kirk Sorensen's wiki site by 2012, where he posted gigabytes of reports from OR. Many of that group were Chinese students, getting advanced nuke degrees in the USA, including the son of the Premier of China, Miangheng Jiang who requested, and got the **first ever public tour** of Alvin Weinberg's physical hardware at ORNL. Kirk asked: Why not a US tour for US engineers? He invited me to go on the tour with my military industry hat. Ironically my big industry boss wanted me to speak at a Missile Defense meeting, so we sent one of our energy experts to the second ever tour of the OR Molten Salt Reactor. It is all captured by the videographer Gordon McDowell if you access U-tube. **Here is what they saw:**

#####

## Talking the Walk

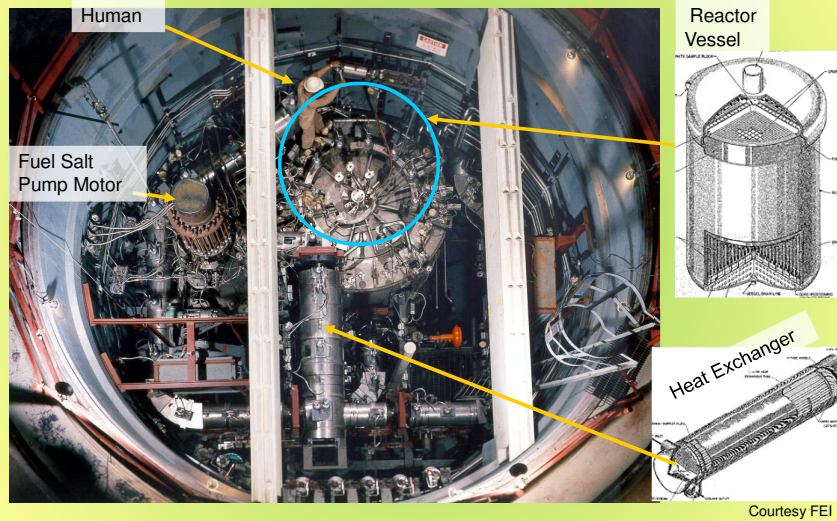


SMR > MSR > LFTR

Courtesy FEI

Buzz in the middle , a Thorium supporter with Kirk Sorensen of Flibe Energy and wife Quincy. Kirk and Buzz have/are working on a problem **NASA** needs solved: how do humans power planetary colonization. Buzz wants to use the Moon as a launch point for planetary jumps, especially Mars. At the bottom is the location map of **lunar** Thorium – making unlimited energy available at launch pad Moon. **The Earth-bound radiation fear elephant** does not exist among astronauts. It **does** exist in space where there is no protective atmosphere against cosmic rays. Therefore spacesuits are really expensive. Correspondingly there will be no NIMBY issues for moon or Mars colonists. #####

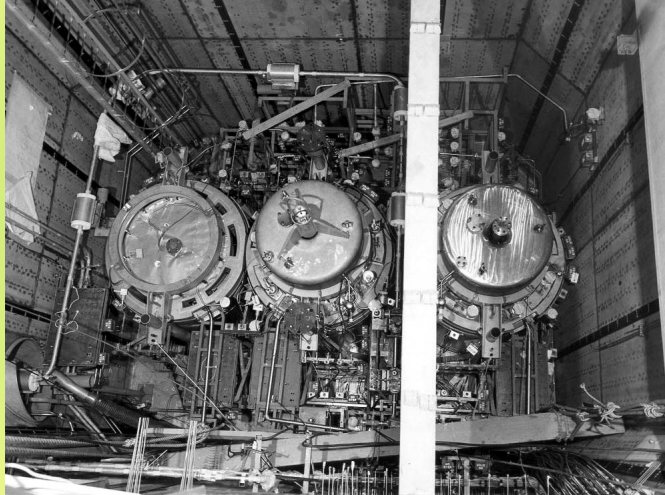
Oak Ridge National Laboratory Molten Salt Reactor  
Experiment 1965 – 1969 operated



They saw Dr. Weinberg's team had successfully operated a Molten Salt Reactor for over 20,000 hours. #####



## MSRE Drain Tanks

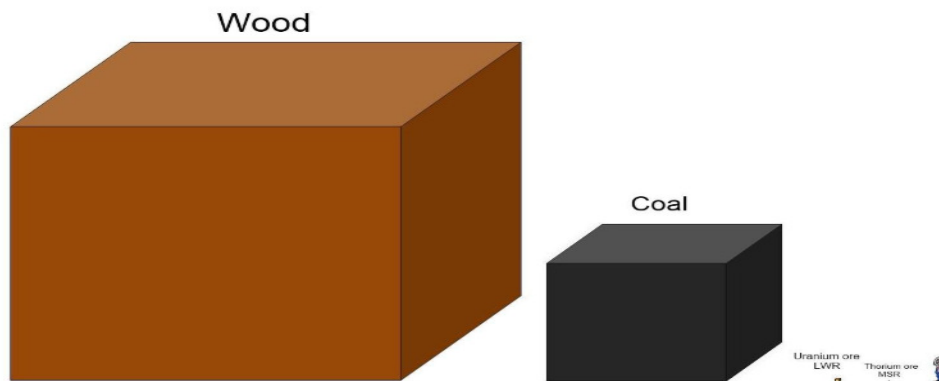


Courtesy FEI

They saw fuel drain tanks positioned below the reactor vessel to receive fuel drained from the reactor by operation of gravity. No water tanks or diesel generators needed. All passive.

## Energy density of fuels

Fuel required to generate one American's total primary energy for a lifetime



Th at 6 – 10 ppm wt average abundance >>>> (See calc below where concentrated Th veins are 10,000 times more concentrated at 1 part per hundred.

*Assume 3 oz of Th needed for 1 year of US citizen energy use.*

*How many oz of earth needed?*

*Ans: at 9 ppM, 1M oz of earth gives 9 oz Th*

*Therefore divide 1 M by 9/3 = about 333,000 oz of earth= 22, 000 lbs or 4 dump truckloads of garden dirt.*

*Compare to KFS thesis:*

*From KFSorensen Thesis 2: A cubic meter of average crustal earth contains about 2 cubic centimeters of Thorium refined to metallic form.*

*Density of thorium metallic 11.7 grams/cc therefore about 2x = 24 grams of Th is a cubic meter of dirt.*

*How many grams per ounce: 28.34*

*Roughly : a cubic meter of earth contains almost an ounce of Th.*

*The marble of Th in the hand picture is how much Th for how much energy.*

*Kirk Ted talk (10 minute version) shows marble size “supplies a person’s (USA) life time*

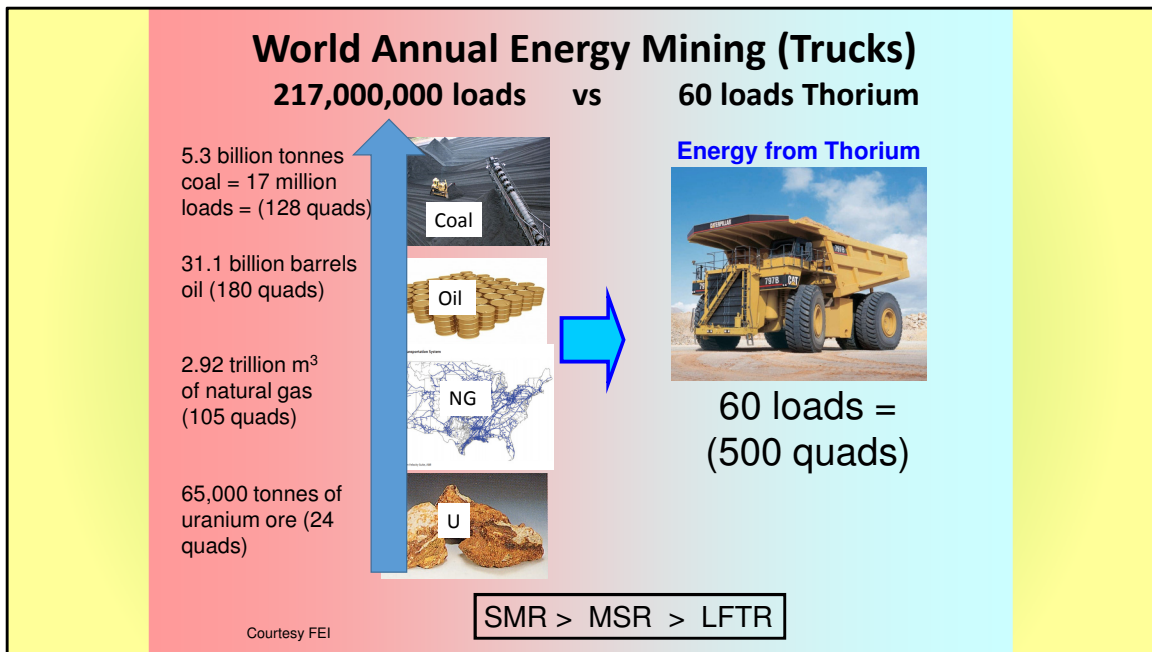
energy – assumed by me to be transport, residential and percapita industrial. The marble probably weighs about 1 lb = 16 oz.

$16 \text{ oz} \times 28.34 \text{ g/oz} = 300 \text{ grams}$

$300 \text{ gm} / 24 \text{ gm Th/cubic meter} = 12.5 \text{ cubic meters} = \text{a trench 1 meter deep and 12.5 meters long}$

Concentrated Th veins found at 1 pphundred.  $10 \text{ ppm} / 1 \text{ pphundred} = 10 \times 10E-6 / 1 \times 1 \times 10E-2 = 10 \times 10E-4 = 1 \times 10E-5$  or invert such that concentrated Th is  $10E5$  more concentrated than average earth crust, 10,0000.

At this concentration, Th unearthed to reach 300 grams >>  $1 \text{ gram Th} / 100 \text{ gm earth} \times X \text{ gm earth} = 300 \text{ gms} \gg X = 300 / 1/100 = 300 \times 100 = 30000 \text{ gms earth}$   
Assume earth is about .7 g/cc then earth needed is  $30000 / .7 = 42800 \text{ cc}$  -



Thorium is so energy dense, that less than 12 thousand tonnes can supply the world's energy vs the combined billions of tonnes coal, oil and NG. 60 truck loads could carry harmless Thorium Ore to a depot for conversion to thorium fluoride salt. Compare 60 loads to 217 million equivalent loads of fossil fuels and millions of miles of rail transport after that. During transport **a single coal car** spews a **ton** of toxic coal dust into the environment. Similarly for oil and gas –our sprawling web of underground, high pressure pipes could be retired along with all the accident deaths that Sierra, GreenPeace and EDF know about.

Thorium is mined extensively in China's **rare earth** mines. China controls the world supply of rare earths **mixed with** thorium ores. In the US, if I want to mine rare earths, which are used in wind turbines, solar panels and all our electronic gadgets, the Th also dug up must be separated out and re-buried as prohibited waste, **an unnecessary expense. In China and India the Th is stored for energy. It is a resource –far more valuable than the fictional value of gold.**

India has abundant concentrations of Th. Its citizens cover themselves in Thorium sand beaches for its curative health effects. **We walk on it every day in our gardens. It is the source of the immense geothermal energy in the earth including** heat pumps now in newer homes. Th keeps the earth core

Cat truck carries 200 tonnes .

Oil barrel 306 lbs.  $(31.1 \times 10^9 \text{ barrels} \times 306 \text{ lbs/barrel}) / 2200 \text{ lbs/tonne} =$   
4 billion tonnes oil .

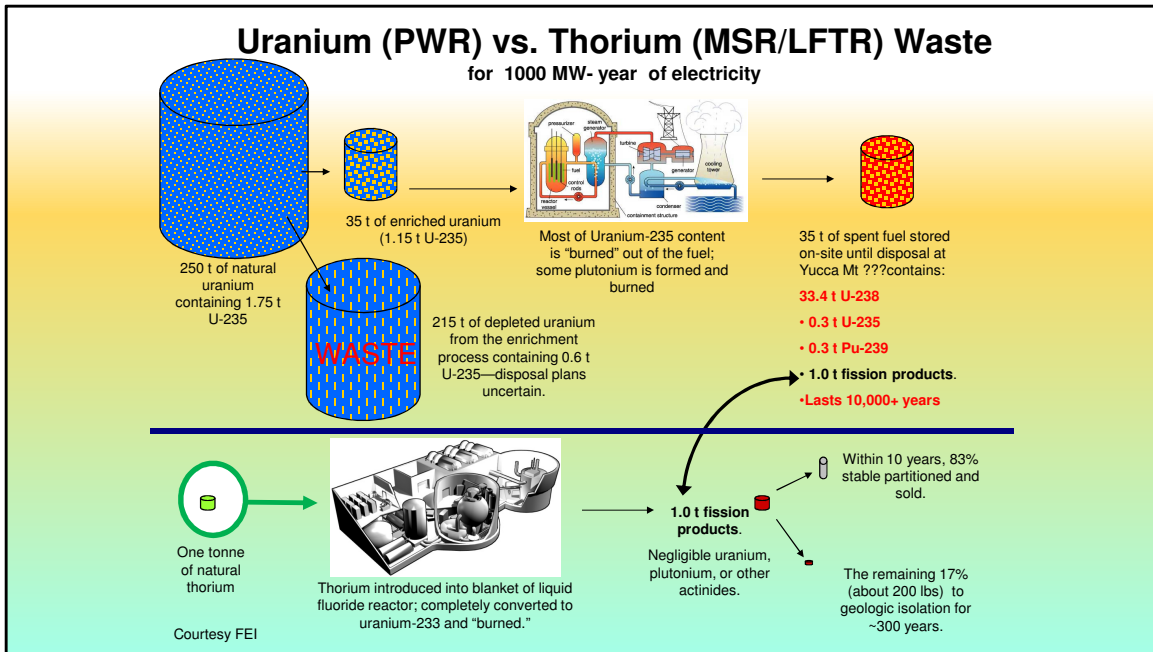
Assume NG compressed also at the same density oil then approx. 14 billion  
tonnes of CNG.

Th ore required 12,000 tonnes per world per yr. Therefore 60 loads of Th.

$4.33 \times 10^9 / 400 = 433 \times 10^7 / 200 == 10^7 = 100 \text{ E}6 = 217 \text{ million loads left}$   
side slide.

.

.



This chart compares waste streams for legacy U (in blue on top) to the Th fuel cycle at bottom. A 35 to 1 ratio of wastes.

About 1 tonne of Thorium feedstock, the little green barrel in the bottom, compares to **approx 300 tonnes of U feed at the top.**

The bottom LFTR has 1 one tonne of Th in and one tonne of **waste** out. Of that waste only about 17% or 300 lbs needs to be stored for about 300 years for (a few of the isotopes). This compares to the 77,000 lbs of waste in the top legacy reactor – needing storage for 10s of thousands of years.

#####  
 ##### **For legacy U PWRs ,**  
 the mined ore **produces 215 tonnes of depleted U waste from enrichment before any fuel reaches the reactor.** For the legacy PWR reactors, 35 tonnes of **enriched U** then go into the reactor and 35 tonnes of irradiated fuel comes out needing to be stored for 10,000 years due to higher actinides like plutonium.

How much wt and volume in 17% of the one ton to geologic storage: If one ton = 2200 lbs :  $.17 \times 2200 = 374$  lbs. How much does a 55 gal drum of water weigh: at 8.34 lb/gal = 458 lbs .  $374 / 458 = .77$

## Conclusions (Engineers')

- The Green New Deal - a **political** vision influenced by special interests. **Who?**
- GND assumes "low tech solutions" can reverse Global Warming.
  - Solar, Wind, Water, Solar (WWS) and Trees are low tech but unsuitable for "citized" societies.
- A Total WWS electric world is an engineering impossibility regardless of cost (\$160 Trillion)
- Climate Scientists (IPCC) have warned us: populace "believes" them: big trouble.
- Energy Engineers know solutions (IPCC, IEA, US DoE-EIA, others).
  - Populace has little understanding of energy types and wastes.
- Big Oil is speaking: Big Oil loves Solar and Wind. Why? BO hates Nuclear.
  - Big Oil funds anti-nuclear Environmental Organizations: Sierra, NRDC, FoE, Greenpeace.
- Nuclear Power Engineers have spoken – the populace did not believe.
  - Populace equates N-Power (safety) to bombs and nuclear weapons proliferation.
- The Manhattan Project did 100s of reactor designs and chose **ONE** class (the PWR)
  - **to make Bombs. Power was an afterthought.**
- Modern Nuclear Power Engineers speaking now: **THERE WERE OTHER DESIGNS IN MP!**
  - **Some designs reverse all the bad popular beliefs based simply inherent safety.**

## Public/Political Education



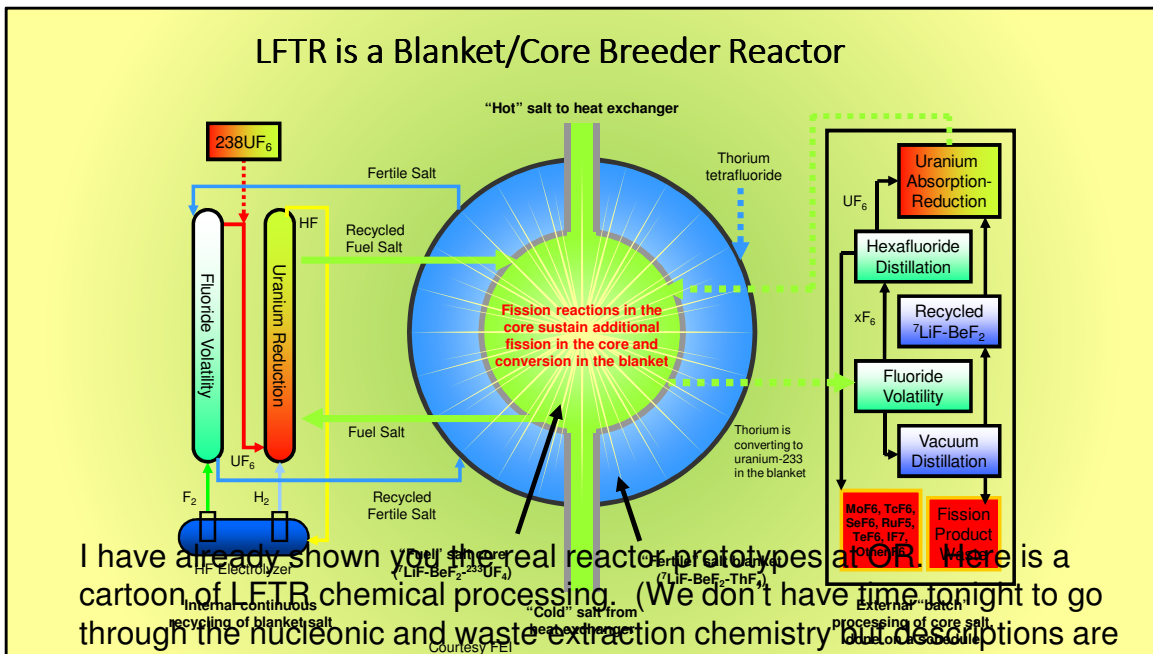
- 1 Renewables [www.WithoutTheHotAir.com](http://www.WithoutTheHotAir.com) (free PDF book). Author David Mackay  
[www.EnvironmentalProgress.org](http://www.EnvironmentalProgress.org) Website: Michael Schellenberger
- 2 Nuclear radiation. Author Wade Allison
  - Read the about the health of the SURVIVORS of Hiroshima and Nagasaki
  - Compares radiation to coal, oil, gas, methane, fracking, and chemical pollution.
- 3 Liquid Fluoride Thorium Reactor (LFTR) story. Author Richard Martin
- 4 Molten Salt Reactor, energy history and science. Author: Robert Hargraves.

Mike Armenia [CaptBirdFish@gmail.com](mailto:CaptBirdFish@gmail.com) 401-626-5840



# Backups

## LFR is a Blanket/Core Breeder Reactor



I have already shown you the real reactor prototypes and a cartoon of LFR chemical processing. (We don't have time tonight to go through the nucleonic and waste extraction chemistry but descriptions are available on the web and in the design report I will show next.

What is a breeder reactor: uses a harmless raw material (Thorium) to breed a fissionable isotope (U233) which fissions to provide power. Initially a supply of U235 (fissionable) is needed to make the first tranch of breeders. The breeder makes more fuel (U233) that it uses. Is about 10 years (doubling time) the U233 is enough to start up another breeder without U233. The first tranch of startup fission material can be U235, U238 or Plutonium239 from weapons and waste stock piles. The LFR breeder is being designed to work using slowed (moderated) neutrons. It could also work in a fast spectrum to burn Pu or U238.

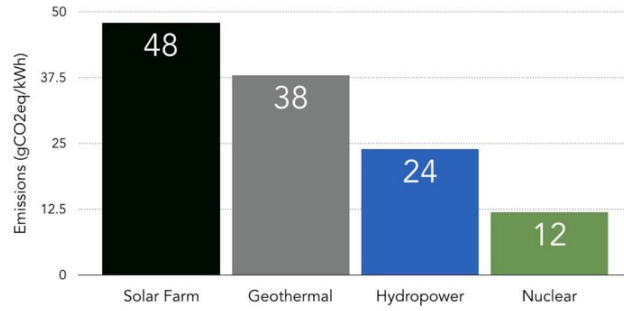
September 2018 the Nuclear Energy Innovation Capabilities Act and the Department of Energy Research and Innovation Act passed Congress. The first enables private and public institutions to carry out civilian research and development of advanced nuclear energy technologies. Specifically, the Act established the National Reactor Innovation Center to facilitate the siting of privately-funded advanced reactor prototypes at DOE sites through partnerships between the DOE and private industry. The second Act combines seven

previously passed science bills to provide policy direction to the DOE on nuclear energy research and development.#####

*The LFTR reactor thorium-uranium fuel cycle depends on conventional chemical processes shown on the left to separate out the fissile U233 generated in the blanket (blue area) and deliver it to the core (green area for fissioning.) Similarly, on the right, the fission products produced in the core are chemically or physically removed from the reactor. When a reactor is to be refurbished or decommissioned, its salt inventory which is not radioactive may be used in a fresh reactor.*

*The thorium fuel cycle is carried out through processes in various subsystems of LFTR.  $^{90}\text{Th}232$  in an outer blanket (blue) region of the reactor absorbs about half of the neutrons produced from fission in the core. As  $^{92}\text{uranium}233$  is formed in the thorium blanket from neutron absorption, it is segregated (left side of slide) by chemical fluorination before going to the core for fission. (Uranium fluorination is done every day on a tonnage scale as part of today's preparation of uranium fuel for enrichment so it is a well-understood chemical process.) The core's fuel salt is continuously replenished with the uranium-233 produced from makeup thorium in the blanket. The uranium-233 extracted from the blanket is then introduced into the fuel salt, which is then returned to circulation through the core. Liquid Thorium (tetrafluoride) salt is fed into the blanket to make up for the consumption of thorium in the blanket. On the right side of this slide fission products are batch processed out of the fuel stream: the fuel salt is fluorinated to remove residual uranium, and then distilled to separate the carrier salt ( $\text{LiF-BeF}_2$ ) from the fission products. Many of these fission products are valuable and can be segregated and commercialized. The chemical form of the salts render them impervious to radiation damage, allowing them to function as a medium for nuclear reactions*

### Nuclear produces four times less carbon pollution than solar farms



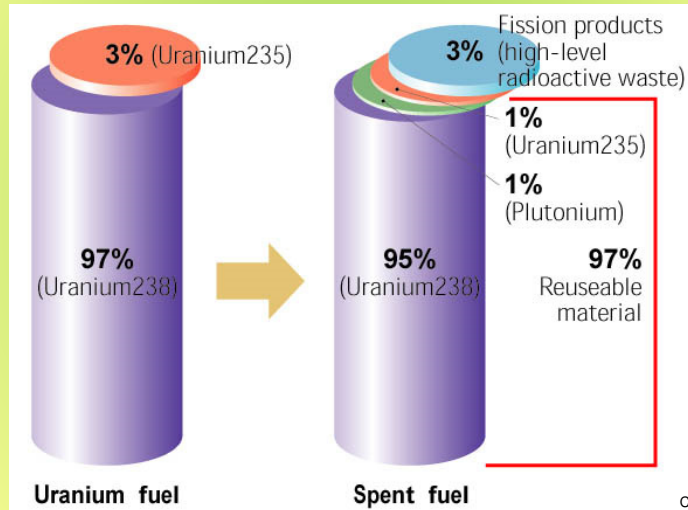
**Source: Intergovernmental Panel on Climate Change (IPCC) 2014**

Annex III Table A.III.2 - Schlömer S., T. Brückner, L. Fulton, E. Hertwich, A. McKinnon, D. Pertsch, J. Roy, R. Schaeffer, R. Sims, P. Smith, and R. Wiser. 2014. "Annex III: Technology-specific cost and performance parameters." In: *Climate Change 2014. Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.



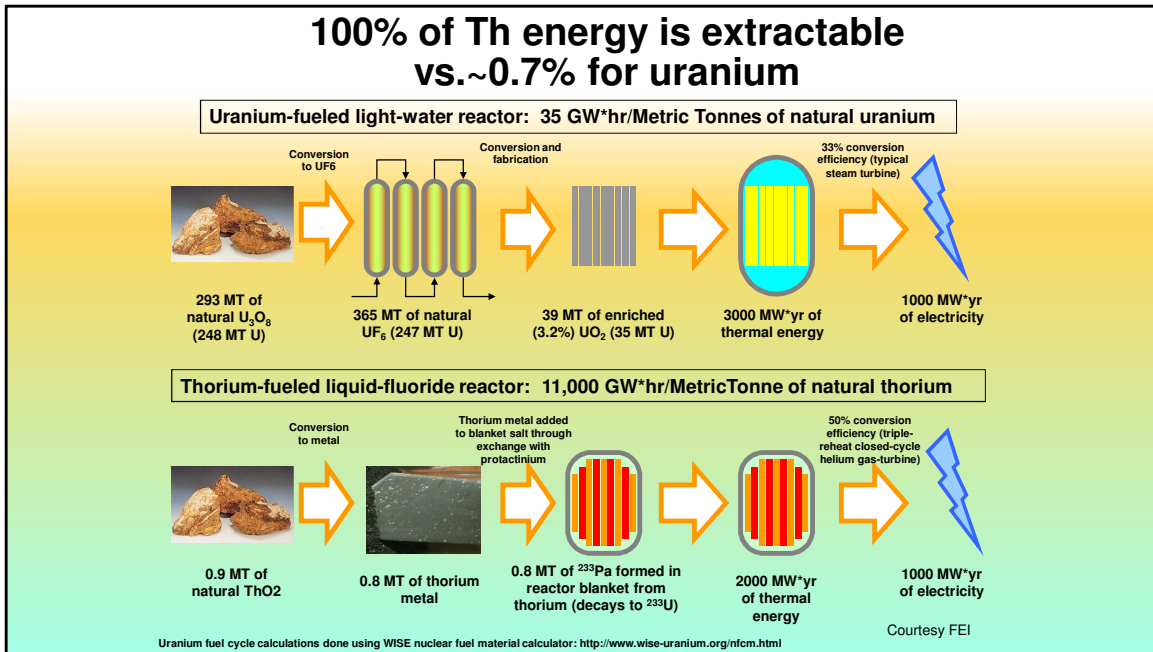


## Present-Day Uranium Open Fuel Burnup



97% of the uranium fuel in legacy reactors remains unburned in solid form. This “waste” is reusable if the fuel is reprocessed but we (USA) don’t do that preferring to store indefinitely the radioactive fission products encapsulated in their original zirconium cladding. The high level waste, especially plutonium remains radioactive for 10s of thousands of years. #####

*The USA planned, but cancelled a program to recover the U238 and Plutonium waste and reburn it in different kinds of reactors. Instead the taxpayers and ratepayers have spent about \$15B on a waste repository in Arizona (Yucca MT) but that too has been cancelled. France on the other hand reprocess all its nuclear waste and buries the remaining short lived fission products on the reactor sites.*

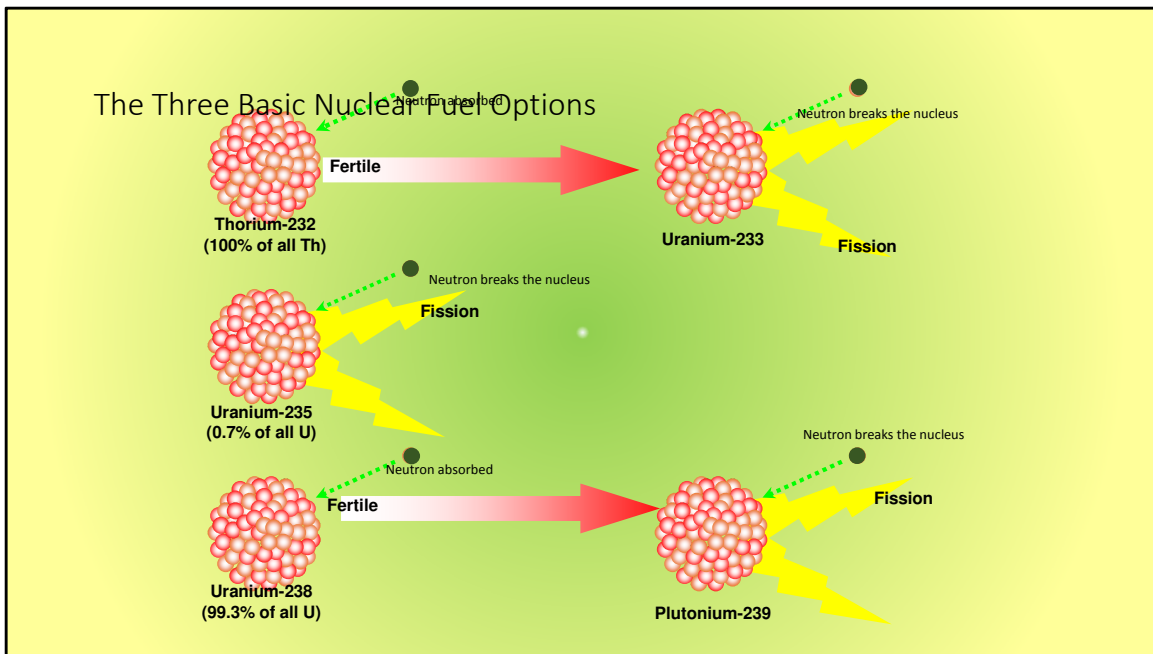


Back to reactor design: The use of thorium in liquid-fluorides offers 300 times the energy efficiency over solid uranium in a legacy PWR.

This is a comparison chart. The top process is the conventional PWR. Starting with **about 300 tonnes of mined Uoxide**, the PWR produces **1 GW-yr of electricity**.

The bottom is **LFTR**. It starts with **less than 1 tonne** of mined Th-oxide to produce the same electricity.

#####  
#####



Ok, we've covered coolants , now lets look at choices for fuels. Nature, meaning the ground we walk on, offers **only three** different nuclear fuels, Thorium-232 at top exists as one isotope. Uranium exists in two isotopes: 235 and 238. Those are the 3 fuels.

Th232 and U238 are abundant but **not fissile** meaning they can't be split by neutrons or form a critical mass. But they are **fertile** meaning can absorb neutrons to breed upward in mass, creating the **artificial fissile** isotopes shown at the right in the picture. Th breeds **U-233**. U238 breeds Pu239. Again, U233 and Pu239 are man-made **fissile** isotopes.

**In the middle we have natural Fissile U235. For PWRs** natural U is isotopically **enriched** to a higher U235 fraction as fuel and enriched much more to be used in **bombs**.

**You do not need a reactor to make a U235 bomb- just centrifuges like the ones we stopped in Iran** and the ones we used in the MP for the first bomb. But the second bomb, the Nagasaki one, used Pu. You **do need a reactor** to breed artificial **Pu** bombs. They used a PWR. Pu became the standard for



most of the bombs in the world.

Bombs. Time to jump on my non-prolif soap box: What if the small group of MP humanitarians had succeeded with this vision: To convince all world governments to adopt a radically different form of nuclear power, one that makes possible total **nuclear disarmament**. This is not an oxymoron. We simply stop building U fueled reactors and build only Th closed cycle LFTRs to export all over the world. We would build LFTRs for cheap power and **they could** burn all the old reactor waste including **Pu** and **U235** stockpiles and weapons. LFTR provides a perfect non-prolif power source – one that **can't** make bomb materials, but can eliminate them and their bomb-making reactors. I wrote about this to Pres. Obama's Iran nuclear negotiating committee – headed by the past Secretary of Energy Moniz - who was raised just a few miles from here. I have spoken to Moniz about benefits of LFTR. He deflects the whole LFTR issue. To put it plainly, our DoE is wed to and continues to fund our universities and labs for incremental changes to the entrenched military technology of **U** PWRs that support weapons. But Moniz's predecessor, Secretary of Energy Stephen Chu acknowledged the non-prolif **and** power benefits of LFTR. **He** made a radical, and controversial executive move under the Obama admin. **He gave away our developed LFTR technology along with some of our best engineers to China. Is he a humanitarian or a traitor? That is a question deserves a whole book.**  
#####

*This is how PWRs work: For fuel, natural U is enriched to 2 or 5 % U235. This is difficult and expensive. But in these **PWRs** most of the reactor fuel is natural fertile **U238**. In the reactor **U235** fissions to provide 2/3 of the thermal energy out. But **U238** in the fuel absorbs a neutron to make artificial **Pu239**. **Some** of this Pu also fissions to provide about 1/3 of the energy for power. But in the MP most of the Pu was harvested prior to fissioning to make the economical fuel for **bombs** like one dropped on Nagasaki. Pu became the standard for most of the bombs in the world.*

### How to design a reactor. First ask Why?

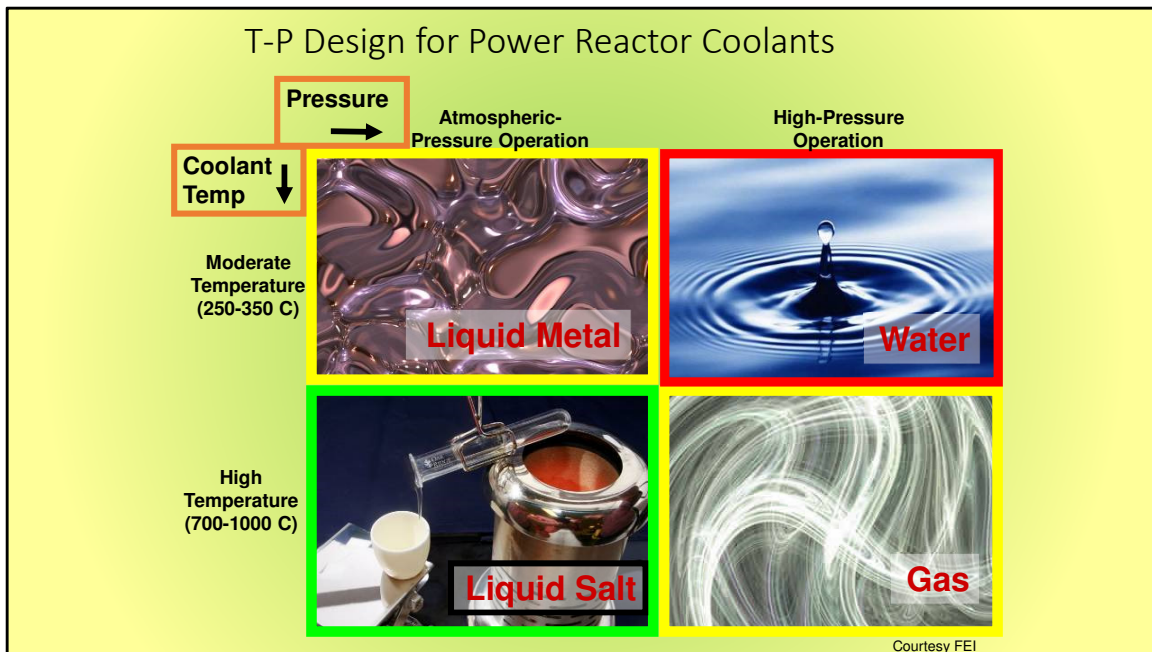
- In the Manhattan Project to produce plutonium fission bomb. What reactor? What fuel?
  - Would you care about power conversion?
  - Would you care about thermo efficiency?
  - Would you care about long lived waste?
- For commercial power, what reactor and fuel?
  - Would you produce plutonium?
  - Would you produce actinide wastes?
  - Rankine or Brayton thermo?
  - Liquid or solid fuel?

SMR > MSR > LFTR

If you were going to design a reactor for power, would you produce Pu and other fission products that last for 10 s of k years? Of course not. Would you design it low eff Rankine or high heat Brayton cycle? Would you use solid or liquid fuel?

In the MP the OR team designed several kinds of reactors and fuels **for bomb making**. But a few of this team, trained in biology and chemistry recognized that some of these first-ever fission reactors were very compact, high heat, high power density, could propel large manned aircraft. Then they thought – very good for civilian power. Furthermore when designed as a closed-fuel system they were useless for weapons. Kirk Sorensen's LFTR was conceived this way leveraging the prototype that successfully ran at OR.

#####



If you were designing for power what Coolant would you use: liquid or gas. T and P are primary parameters in the selection of coolants. Shown here in 4 quads are the most practical coolants for fission reactors: water, gas, liquid metals, and liquid salts.

When designing for **economical civil power or an aircraft** we want to be in the lower left quad with Low P for safety and cost and high T for efficiency. So the sweet spot is the lower left quad where **liquid salts** in a high T, low P Brayton conversion cycle reside.

In the upper right, Water is the most common reactor coolant today, but it can reach only Rankine cycle efficiencies even under very high pressures. Therefore low efficiency and low energy in the waste heat. High P requires expensive structures for containment of potential explosions and meltdowns.

In the lower right Gas coolants, most commonly CO<sub>2</sub> or He, can reach higher temperatures but also only under very high pressures.

In the upper left, Liquid metals such as sodium can operate at low P with

moderate **T** for some limited use of waste heat. But sodium is very reactive with water and air. Plus these reactors operate in the difficult fast neutron spectrum.

To repeat, **Only salts** can reach high temperature thermodynamic efficiency though a large liquid range. The Brayton cycle high-T waste heat is valuable for many other processes like desalination. The High T combined with Low **P** allows an order of mag lower cost of building a **compact** reactor without needing heavy structural pressure containments. #####

## Bianco, Todd (PUC)

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**From:** billyhoran@aol.com  
**Sent:** Thursday, May 09, 2019 2:35 PM  
**To:** Bianco, Todd (PUC); email.dem.inveneryairpermit@dem.ri; captbirdfish@gmail.com  
**Cc:** Governor (GOV); rep-mattiello@rilegislature.gov; sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; rep-ruggiero@rilegislature.gov; letters@providencejournal.com; louis\_dipalma@yahoo.com  
**Subject:** [EXTERNAL] : The announced Burrillville Power Station RI DEM Draft APC Permit is a timely step forward in realizing project approval.

**Follow Up Flag:** Follow up  
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The announced Burrillville Power Station RI DEM Draft permit 05/09/2019

### DEM Releases Draft Air Pollution Control Permit For Clean River Energy Power Plant

is a timely informed decision based on both economics, science & engineering all anchored by rule of law. Our RI PUC EFSB ,in parallel, is nearing the conclusion of its rigorous review and now a anticipated approval for this project. The alternative mob rule fanned by environmental radicals plus NIMBY / BIABH victim hood gaggle has caused a dangerous delay in steps necessary to maintain our energy / electricity security. The critical domestic shale gas fueled combined cycle power station provides RI with a bridge to future disruptive technologies now working their way to the market place. Our RI Jr Senator Sheldon Whitehouse has engaged in a muli year bi partisan effort looking at the big picture e.g. installing enabling steps necessary to realize those disruptive technologies. The one additional critical item required today is at the Federal & State level challenging the blockade for modernization, capacity increases and reconfiguration for redundancy in Natural gas transmission lines that serves the Northeast US and especially New England. The NY state position of anti domestic shale gas & companion transmission lines is unacceptable. Last, some new facts on what was branded and over sold as Renewable Energy. The Manhattan Institute a think tank just released a comprehensive "The New Energy Economy" An exercise in magical thinking. You can read this in depth scholarly report at - <http://tinyurl.com/y6cmfzbt>

William F Horan  
1 Jean Street  
Middletown, RI 02842-4536  
401 846 5732  
billyhoran@aol.com

## Bianco, Todd (PUC)

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**From:** billyhoran@aol.com  
**Sent:** Sunday, May 12, 2019 7:08 PM  
**To:** rep-mattiello@rilegislature.gov; rep-mcnamara@rilegislature.gov; rep-handy@rilegislature.gov; Rep-Kazarian@rilegislature.gov; Rep-Bennett@rilegislature.gov; rep-ruggiero@rilegislature.gov; Bianco, Todd (PUC); Governor (GOV); sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; caprbirdfish@gmail.com  
**Cc:** letters@providencejournal.com; editor@newportri.com; louis\_dipalma@yahoo.com  
**Subject:** [EXTERNAL] : Rep Ruggiero proposed Bill 2019-H 5991 is more bureaucracy claimed to Band-Aid a Bureaucracy she had a hand in facilitating in the first place!  
**Attachments:** Energy&Power Part 3 Mike Armenia (1).pptx  
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Rep Ruggiero proposed Bill 2019-H 5991 is more Bureaucracy claimed to Band-Aid a Bureaucracy she had a hand in facilitating in the first place!

"Rep Debora Ruggiero bill - The bills language is more hyperbole. She has proposed legislation ([2019-H 5991 \[webservice.rilin.state.ri.us\]](https://www.rilin.state.ri.us)) seeking to have the Office of Energy Resources adopt greater consumer protection measures for homeowners who invest (been duped into) roof top solar pv.?! OMG First the state creates the wind and solar industrial complex problem for home owners, tax , rate payers and public utility customers. Now the state that created the problem claims that it wants to protect you from the very conditions they created! Reminds me of the lines I am from the government and I am here to help you aka don't reach for the soap. OBTW the Rep-Ruggiero justification of MA does it this way is not a valid bases from which to formulate State of Rhode Island public policy. OBTW What is the cost for regulating her "Office of Energy Resources" existing solar and wind bureaucracy? Perhaps yet another budget busting expense for the tax payer and rate payer.

The issue;

## If Solar And Wind Are So Cheap, Why Are They Making Electricity So Expensive?

STATE HOUSE – Rooftop solar arrays plus industrial scale solar and wind turbines have been popping up all over Rhode Island in recent years". This outcome is not a justification and or solution for squandering now over taxed farm and forest lands. The reality is these approaches do not perform as claimed i.e. don't meet a claimed - "bringing abundant clean energy and decentralizing generation" don't as claimed "enrich the state's electric resources", and don't as claimed "while creating thousands of new jobs with dozens of solar installation companies". foot note job / labor reduction is a positive measure of a competitive under taking while maximizing labor content is a significant detractor. Yes, these claims, sounding more like a sales infomercial, represent a dangerous oversold political cult inspired narrative. Further actually demonstrate a frighten ignorance for the actual technical and economic numbers! Finally, throwing more resources at this politically popular and oversold agenda is a road map to nowhere. The alleged renewable / green electricity generation lacks performance capacity and equivalence, scale ability and competitive cost. Further overlaying a distributed architecture on top of the existing electrical distribution grid is proving to be problematic and costly. I could continue but Speaking directly (prior to the last election) with Rep- Ruggiero she clearly was not interested in facts! Rather only doubling down on her blind embrace to a magical thinking outcome based on pseudo science and dazzled with a politically popular subsidized front loaded financial manipulation. .

In a marked positive contrast - The announced Burrillville Power Station RI DEM Draft permit 05/09/2019 DEM Releases Draft Air Pollution Control Permit For Clean River Energy Power Plant is a timely informed decision based on both economics, science & engineering all anchored by rule of law. Our RI PUC EFSB ,in parallel, is nearing the conclusion of its rigorous review and now a anticipated approval for this project. The alternative mob rule fanned by environmental radicals plus NIMBY / BIABH victim hood gaggle has caused a dangerous delay in steps necessary to maintain our energy / electricity security. The critical domestic shale gas fueled combined cycle power station provides RI with a bridge to future disruptive technologies now working their way to the market place. Our RI Jr Senator Sheldon Whitehouse has engaged in a muli year bi partisan effort looking at the big picture e.g. installing enabling steps necessary to realize those disruptive technologies. The one additional critical item required today is at the Federal & State level challenging the blockade for modernization, capacity increases and reconfiguration for redundancy in Natural gas transmission lines that serves the Northeast US and especially New England. The NY state position of anti domestic shale gas & companion transmission lines is unacceptable.

Last, some new facts on what was branded and over sold as Renewable Energy. \*\*\*\* The Manhattan Institute a think tank just released a scholarly comprehensive report "The New Energy Economy" An exercise in magical thinking \*\*. I would be glad to furnish interested parties a copy for their study. You can read this in depth scholarly report at - <http://tinyurl.com/y6cmfzbt> [tinyurl.com] more learning;

Also attached to this communication is a view-graph presentation on topical; energy acquisition, conversion and distribution.

Wind and solar is a road map to nowhere. Yes, big picture for a little state.

Free pdf book here <https://www.roadmaptonowhere.com/> [l.facebook.com]

Free Video here <https://www.youtube.com/watch?v=V2KNqluP8M0> [youtube.com] (some additional detailed videos follow if you have the time to watch).

Another view; The case of the good power station reactor; <https://spark.adobe.com/page/1nzbqgE9xtUZF/...> [spark.adobe.com]

William F Horan  
1 Jean Street  
Middletown,RI 02842-4536  
billyhoran@aol.com  
4018465732

## Bianco, Todd (PUC)

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**From:** billyhoran@aol.com  
**Sent:** Tuesday, May 14, 2019 2:27 PM  
**To:** drjamestown@cox.net; louis\_Dipalma@Yahoo.com  
**Cc:** rep-mattiello@rilegislature.gov; rep-mcnamara@rilegislature.gov; rep-handy@rilegislature.gov; Rep-Kazarian@rilegislature.gov; Rep-Bennett@rilegislature.gov; rep-ruggiero@rilegislature.gov; Bianco, Todd (PUC); Governor (GOV); sen-ruggerio@rilegislature.gov; sen-dipalma@rilegislature.gov; caprbirdfish@gmail.com  
**Subject:** [EXTERNAL] : The truth can be had in the numbers. How Renewables Redistribution created spiraling electricity prices punish poorest & vulnerable.

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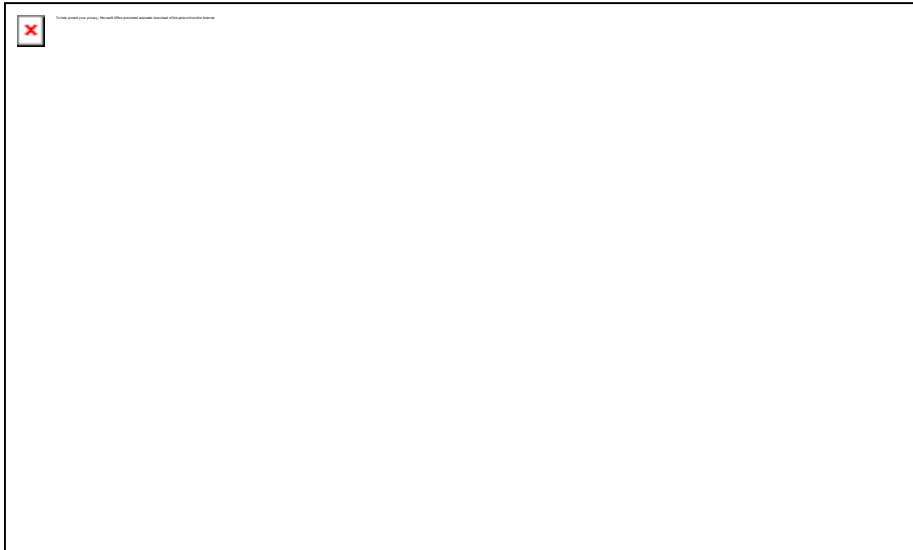
The truth can be had in the numbers. How Renewables Redistribution created spiraling electricity prices punish poorest & vulnerable. **If Solar And Wind Are So Cheap, Why Are They Making Electricity So Expensive? This is a summary at a level where most of the equations, charts and graphs have been removed for those challenged with economics and or science & Engineering disciplines. However such is required to assemble and implement workable public policies. The RI Wind and Solar agenda is an economic time bomb plus a road map to nowhere.**

The RI alternative for today - Burrillville shale gas fueled power station provides us with an affordable alternative such that a bridge is established leading to tomorrows disruptive technologies working their way to the market place. The RI Wind & Solar forced deployment into the marketplace copies a now failed European model that has resulted in a well documented failure. Today many of those companies having lost their home markets are now here in the USA attempting the same wind and solar industrial complex scam.



# Renewables Retribution: Spiraling Power Prices Punish Poorest & Most Vulnerable

May 14, 2019 by [stopthesethings \[stopthesethings.com\]](http://stopthesethings.com) 1 Comment [\[stopthesethings.com\]](http://stopthesethings.com)



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The relationship between rocketing power prices and intermittent wind and solar is pretty obvious. Just ask a South Australian, German or Dane.

The USA is a relative Johnny come lately to the RE obsession bandwagon. There are a couple of obvious exceptions, namely Texas and California. But among the other 50 states, the wind and solar roll out has barely begun (at least in terms of the scale planned by America's RE rent seekers). Well, no time like the present for Americans to understand what's about to happen to their power prices, if the wind and solar lobby get their way.

## **Researchers Say Renewable Energy Mandates Cause Large Electricity Price Increases**

Watts Up with That?

Tim Benson

2 May 2019

## ***A 1-4 Percent In Renewable Generation Raises Electricity Prices By 11-17 Percent***

An April 2019 working paper from the Energy Policy Institute at the University of Chicago shows renewable energy mandates (REMs), also known as renewable portfolio standards, are dramatically increasing retail electricity prices and serve as a very expensive way to try to reduce carbon dioxide emissions.

The authors of [Do Renewable Portfolio Standards Deliver? \[bfi.uchicago.edu\]](http://bfi.uchicago.edu) found that seven years after REMs are enacted, renewables' share of electricity generation increases by only 1.8 percent. They also found REMs raise retail electricity prices by 11 percent. After 12 years and a 4.2 percent increase in renewables' share of generation, these prices rise by 17 percent. Altogether, the total extra electricity costs of REMs to consumers in the states that have enacted an REM are \$125.2 billion.

The study also reveals reducing carbon dioxide emissions through an REM costs between \$130-\$460 per ton of carbon dioxide abated. These increased costs are, at the low end, almost three times higher than the social cost of carbon estimated by the Interagency Working Group set up by the Obama administration, which is roughly \$46 per ton for 2020. (It should be noted that whether there is a ["social cost" \[heartland.org\]](http://heartland.org) to carbon dioxide emissions at all is debatable.)

***Outside of these higher prices, REMs impose other costs. Since wind and solar are so intermittent (having respective capacity factors of just 34.6 and 25.7 percent) and must be backed up by conventional sources of electricity generation, most estimates “do not account for the additional costs necessary to supply electricity when they are not operating.”***

The paper also notes “renewable power plants require ample physical space, are often geographically dispersed, and are frequently located away from population centers, all of which raises transmission costs above those of fossil fuel plants.” Further, “[REM-driven] increases in renewable energy penetration can also raise total energy system costs by prematurely displacing existing productive capacity, especially in a period of flat or declining electricity consumption. Adding new renewable installations, along with associated flexibly dispatchable capacity, to a mature grid infrastructure may create a glut of installed capacity that renders some existing baseload generation unnecessary.

***The costs of these ‘stranded assets’ do not disappear and are borne by some combination of distribution companies, generators, and ratepayers. Thus, the early retirement or decreased utilization of such plants can cause retail electricity rates to rise even while near zero marginal cost renewables are pushing down prices in the wholesale market.”***

The findings of this study are not surprising and have been mirrored elsewhere. States with these mandates had electricity prices 26 percent higher than those without. The 29 states with renewable energy mandates (plus the District of Columbia) had average retail electricity prices of 11.93 cents per kilowatt hour (cents/kWh), [according to the U.S. Energy Information Administration. \[eia.gov\]](#)

On the other hand, the 21 states without renewable mandates had average retail electricity prices of only 9.38 cents/kWh. In just 12 states, the total net cost of renewable mandates was \$5.76 billion in 2016 and will rise to \$8.8 billion in 2030, a [2016 study \[heartland.org\]](#) revealed.

[A 2014 study \[brookings.edu\]](#) by the left-leaning Brookings Institution found replacing conventional power with wind power raises electricity prices 50 percent and replacing conventional power with solar power triples electricity costs.

The American Action Forum estimates the costs of moving the entire country to 100 percent renewable sources would be around [\\$5.7 trillion \[americanactionforum.org\]](#), and a [2019 brief \[instituteeforenergyresearch.org\]](#) from the Institute for Energy Research estimates that the idea of getting to 100 percent renewable generation is “nothing more than a myth,” and that attempting to do would be a “catastrophe” for our country.

***“Intermittent wind and solar cannot stand on their own,” the brief concludes. “They must have some form of back-up power, from reliable coal, natural gas, nuclear units, storage capability from hydroelectric facilities, and/or batteries.***

Batteries of the size and scope needed for 100-percent renewables are unproven and not cost effective. Even if a 100 percent renewable future were feasible, the land requirements and costs of transitioning would be enormous and would require subsidies to ease the electricity price increases that would result.”

State legislators should not mandate the use of renewable sources in electricity generation. Such mandates raise energy costs and disproportionately harm low-income families. Instead of trying to increase renewable mandates, legislators should repeal them.

[Watts Up With That? \[wattsupwiththat.com\]](#)



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How long they can afford to run it, depends on what happens next ...

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**About stopthesethings**

-----Original Message-----

From: billyhoran <billyhoran@aol.com>

To: drjamestown <drjamestown@cox.net>

Sent: Mon, May 13, 2019 9:25 am

Subject: Re: Rep Ruggiero proposed Bill 2019-H 5991 is more bureaucracy claimed to Band-Aid a Bureaucracy she had a hand in facilitating in the first place!

Thanks for the reply.

Unfortunately you still don't comprehend the facts.

-----Original Message-----

From: RepDebRuggiero <drjamestown@cox.net>

To: billyhoran <billyhoran@aol.com>

Cc: rep-mattiello <rep-mattiello@rilegislature.gov>; rep-mcnamara <rep-mcnamara@rilegislature.gov>; rep-handly <rep-handly@rilegislature.gov>; Rep-Kazarian <Rep-Kazarian@rilegislature.gov>; Rep-Bennett <Rep-Bennett@rilegislature.gov>; rep-ruggiero <rep-ruggiero@rilegislature.gov>; todd.bianco <todd.bianco@puc.ri.gov>; governor <governor@governor.ri.gov>; sen-ruggerio <sen-ruggerio@rilegislature.gov>; sen-dipalma <sen-dipalma@rilegislature.gov>; caprbirdfish <caprbirdfish@gmail.com>; letters <letters@providencejournal.com>; editor <editor@newportri.com>; louis\_dipalma <louis\_dipalma@yahoo.com>

Sent: Sun, May 12, 2019 9:31 pm

Subject: Re: Rep Ruggiero proposed Bill 2019-H 5991 is more bureaucracy claimed to Band-Aid a Bureaucracy she had a hand in facilitating in the first place!

Hi Billy-

The fact is over 3,000 Rhode Island homeowners are putting solar arrays on their rooftops. In 2014 when the REF and REG programs began there were 8-10 solar installation companies in RI. Today in 2019 there are over 52 solar installation companies. Some are good some are not so good. Homeowners depend on the honesty and knowledge of solar companies to put panels on the correct side of their roof (some are not installed correctly) and those solar companies must disclose how much electricity a home owner will really save each month (estimates have been over exaggerated) and if the roof is new enough to sustain the life of a 15-20 year solar array. So, yes consumer protection is now needed. That's what I'm proposing a disclosure form that solar companies must provide to consumers before they can access any of the incentives to install those solar panels. They should not make a profit at the expense of a homeowner! Your knowledge of industry and understanding of changing business landscape should make you appreciate why we must protect home owners. H5991 is a good consumer protection bill. Please call me and let's discuss the facts.

Stay well,

Rep. Deb Ruggiero

423-0444

Sent from my iPhone

On May 12, 2019, at 7:08 PM, [billyhoran@aol.com](mailto:billyhoran@aol.com) wrote:

Rep Ruggiero proposed Bill 2019-H 5991 is more Bureaucracy claimed to Band-Aid a Bureaucracy she had a hand in facilitating in the first place!

"Rep Debora Ruggiero bill - The bills language is more hyperbole. She has proposed legislation ([2019-H 5991 \[webserver.rilin.state.ri.us\]](#)) seeking to have the Office of Energy Resources adopt greater consumer protection measures for homeowners who invest (been duped into) roof top solar pv.?! OMG First the state creates the wind and solar industrial complex problem for home owners, tax , rate payers and public utility customers. Now the state that created the problem claims that it wants to protect you from the very conditions they created! Reminds me of the lines I am from the government and I am here to help you aka don't reach for the soap. OBTW the Rep-Ruggiero justification of MA does it this way is not a valid bases from which to formulate State of Rhode Island public policy. OBTW What is the cost for regulating her "Office of Energy Resources" existing solar and wind bureaucracy? Perhaps yet another budget busting expense for the tax payer and rate payer.

The issue;

## If Solar And Wind Are So Cheap, Why Are They Making Electricity So Expensive?

STATE HOUSE – Rooftop solar arrays plus industrial scale solar and wind turbines have been popping up all over Rhode Island in recent years". This outcome is not a justification and or solution for squandering now over taxed farm and forest lands. The reality is these approaches do not perform as claimed i.e. don't meet a claimed - "bringing abundant clean energy and decentralizing generation" don't as claimed "enrich the state's electric resources", and don't as claimed "while creating thousands of new jobs with dozens of solar installation companies". foot note job / labor reduction is a positive measure of a competitive under taking while maximizing labor content is a significant detractor. Yes, these claims, sounding more like a sales infomercial,

represent a dangerous oversold political cult inspired narrative. Further actually demonstrate a frighten ignorance for the actual technical and economic numbers! Finally, throwing more resources at this politically popular and oversold agenda is a road map to nowhere. The alleged renewable / green electricity generation lacks performance capacity and equivalence, scale ability and competitive cost. Further overlaying a distributed architecture on top of the existing electrical distribution grid is proving to be problematic and costly. I could continue but Speaking directly (prior to the last election) with Rep- Ruggiero she clearly was not interested in facts! Rather only doubling down on her blind embrace to a magical thinking outcome based on pseudo science and dazzled with a politically popular subsidized front loaded financial manipulation. .

In a marked positive contrast - The announced Burrillville Power Station RI DEM Draft permit 05/09/2019 DEM Releases Draft Air Pollution Control Permit For Clean River Energy Power Plant is a timely informed decision based on both economics, science & engineering all anchored by rule of law. Our RI PUC EFSB ,in parallel, is nearing the conclusion of its rigorous review and now a anticipated approval for this project. The alternative mob rule fanned by environmental radicals plus NIMBY / BIABH victim hood gaggle has caused a dangerous delay in steps necessary to maintain our energy / electricity security. The critical domestic shale gas fueled combined cycle power station provides RI with a bridge to future disruptive technologies now working their way to the market place. Our RI Jr Senator Sheldon Whitehouse has engaged in a muli year bi partisan effort looking at the big picture e.g. installing enabling steps necessary to realize those disruptive technologies. The one additional critical item required today is at the Federal & State level challenging the blockade for modernization, capacity increases and reconfiguration for redundancy in Natural gas transmission lines that serves the Northeast US and especially New England. The NY state position of anti domestic shale gas & companion transmission lines is unacceptable. Last, some new facts on what was branded and over sold as Renewable Energy. \*\*\*\* The Manhattan Institute a think tank just released a scholarly comprehensive report "The New Energy Economy" An exercise in magical thinking \*\*. I would be glad to furnish interested parties a copy for their study. You can read this in depth scholarly report at - <http://tinyurl.com/y6cmfzbt> [[tinyurl.com](http://tinyurl.com/y6cmfzbt)] more learning;

Also attached to this communication is a view-graph presentation on topical; energy acquisition, conversion and distribution.

Wind and solar is a road map to nowhere. Yes, big picture for a little state.

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Free Video here <https://www.youtube.com/watch?v=V2KNqLuP8M0> [[youtube.com](https://www.youtube.com/watch?v=V2KNqLuP8M0)] (some additional detailed videos follow if you have the time to watch).

Another view; The case of the good power station reactor; <https://spark.adobe.com/page/1nzbqqE9xtUZF/...>

[\[spark.adobe.com\]](https://spark.adobe.com)

William F Horan

1 Jean Street

Middletown,RI 02842-4536

[billyhoran@aol.com](mailto:billyhoran@aol.com)

4018465732

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