



# **Something is missing from the wind industry's conversation...**

**Tauna Christensen  
Energy Integrity Project**

**[www.EnergyIntegrityProject.org](http://www.EnergyIntegrityProject.org)**

# World News Headlines:

9/23/2013 “Wind Energy: Chalk It Up as a Loss,” *Huffington Post UK*

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**Wind Energy: Chalk It Up as a Loss**  
Posted: 23/09/2013 11:18

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“We have watched as turbines have had to be shut down in high winds and how consumers foot the bill when they are. We have seen their minimal contribution the UK energy supply, even when they are needed most. We have been affected when energy bills have skyrocketed thanks in part to a misguided focus on wind energy. Unfortunately we have also heard how millions of households have been forced into crippling fuel poverty, now having to choose between food and fuel.”

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## Electricity Becoming Third World Luxury In Green Germany

20 Comments

Posted 09/25/2013 06:41 PM ET

267  58

**Gone Green:** Electricity should flow like a river in developed nations. It's a basic good that ought to always be available in whatever quantities consumers will pay for. But in Germany, it's now something else: a luxury item.

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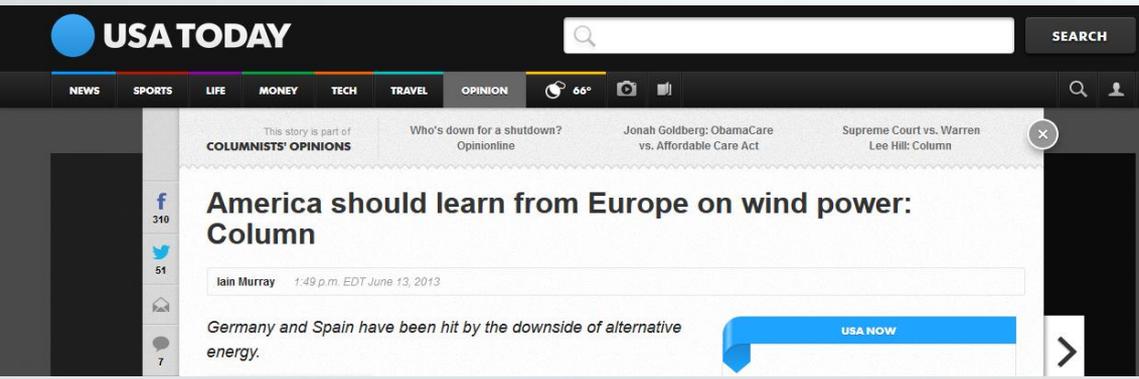
### Investing Tip

One of the most useful aspects of the IBD 50 is the chart analysis for each stock.

“German consumers already pay the highest electricity prices in Europe,’ Der Spiegel reported earlier this month. ‘But because the government is failing to get the costs of its new energy policy under control, rising prices are already on the horizon. Electricity is becoming a luxury good in Germany, and one of the country's most important future-oriented projects is acutely at risk.’“

<http://news.investors.com/ibd-editorials/092513-672498-germany-goes-green-and-lights-go-out.htm>

6/13/2013 “America should learn from Europe on wind power,” *USA Today*

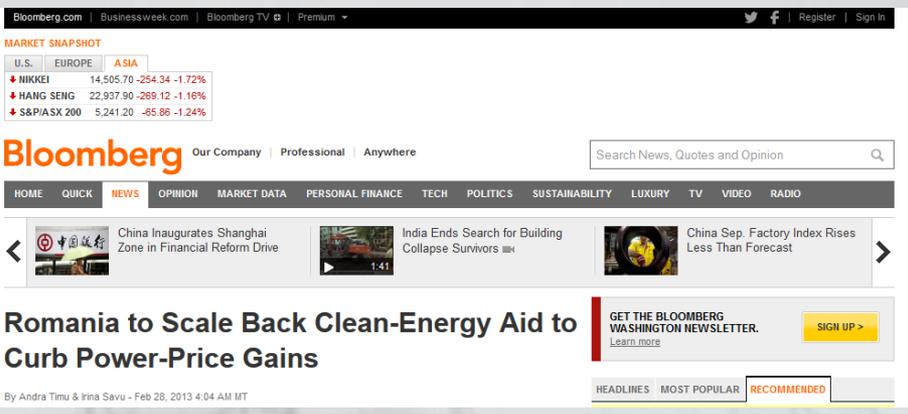


“They are now realizing the projects cannot survive without subsidies and that they make energy much more expensive to households and businesses.”

<http://www.usatoday.com/story/opinion/2013/06/13/america-wind-power-column/2397447/>

2/28/2013 “Romania to Scale Back Clean-Energy Aid to Curb Power-Price Gains,” *Bloomberg*

“The plan to rein in support for renewables follows similar moves in Spain, France, Italy and the U.K., where debt-strapped governments have reduced aid to avoid overcompensating companies and to curb power-price increases for households and businesses.”



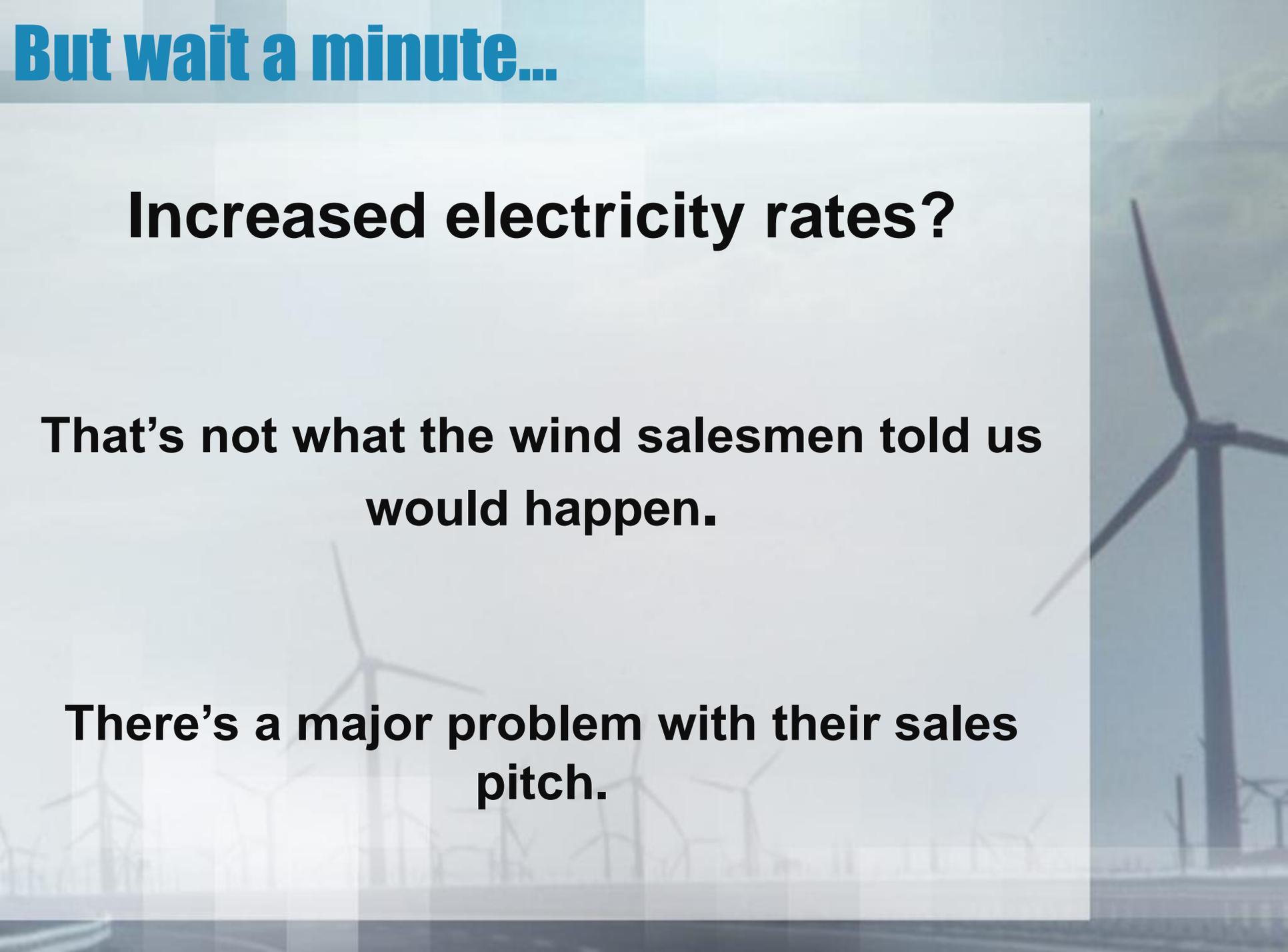
<http://www.bloomberg.com/news/2013-02-28/romania-to-scale-back-clean-energy-aid-to-curb-power-price-gains.html>

**But wait a minute...**

**Increased electricity rates?**

**That's not what the wind salesmen told us  
would happen.**

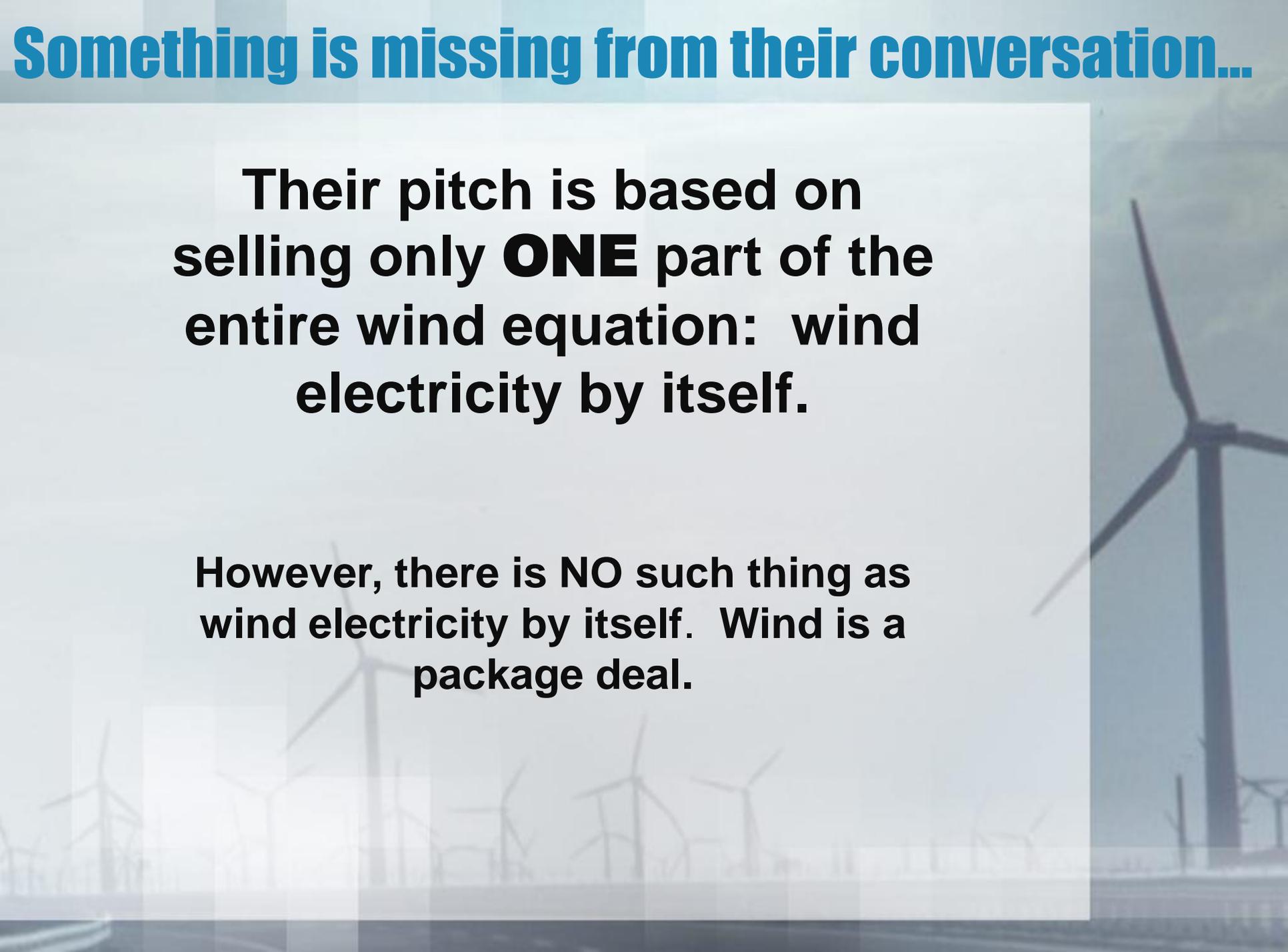
**There's a major problem with their sales  
pitch.**

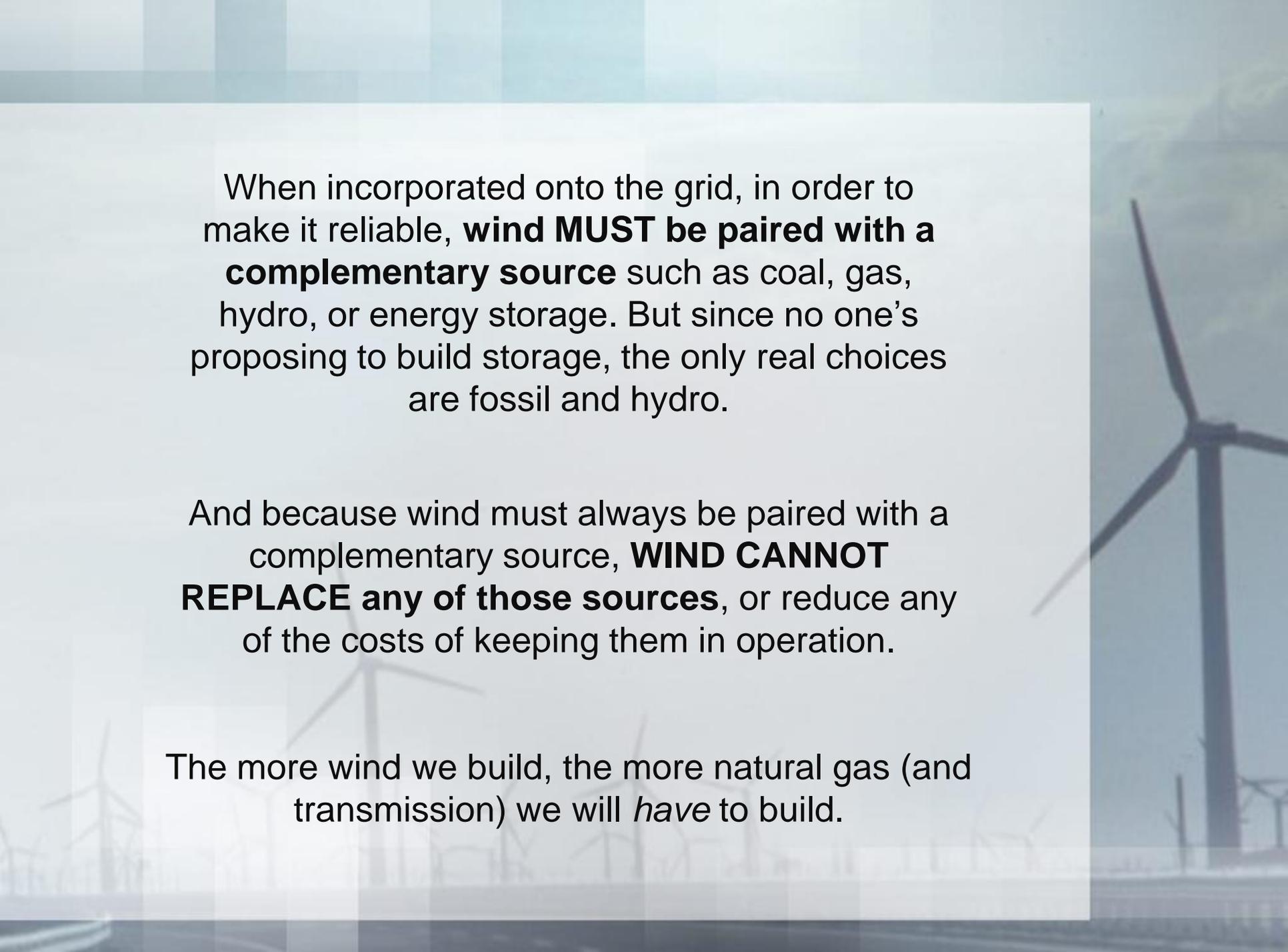


# Something is missing from their conversation...

**Their pitch is based on selling only **ONE** part of the entire wind equation: wind electricity by itself.**

**However, there is NO such thing as wind electricity by itself. Wind is a package deal.**





When incorporated onto the grid, in order to make it reliable, **wind MUST be paired with a complementary source** such as coal, gas, hydro, or energy storage. But since no one's proposing to build storage, the only real choices are fossil and hydro.

And because wind must always be paired with a complementary source, **WIND CANNOT REPLACE any of those sources**, or reduce any of the costs of keeping them in operation.

The more wind we build, the more natural gas (and transmission) we will *have* to build.

# AWEA Board Member, E.ON, explains:

"Wind energy is **only able to replace traditional power stations to a limited extent..** [due to] [t]heir dependence on the prevailing wind conditions ...**traditional power stations with capacities equal to 90% of the installed wind power capacity must be permanently online** in order to guarantee power supply at **all times**" [emphasis added]

E.ON is a German Utility Grid operator and wind developer

[http://www.nerc.com/docs/pc/ivgtf/EON\\_Netz\\_Windreport2005\\_eng.pdf](http://www.nerc.com/docs/pc/ivgtf/EON_Netz_Windreport2005_eng.pdf)

# The CEO of Deseret Power says:

Choices are limited, and the market price for electricity can plunge so low that the price actually goes negative.

The host utility might actually have to pay a neighboring utility to accept the surplus schedule and allow delivery onto its system. This absurd result is a reality in a system that has a high percentage of wind generation installed, and can be very costly to the host utility.

Do you think the twilight zone problem is insignificant? Is this just a remote hypothetical? Think again. Many utilities have found themselves in precisely this situation. For this reason some system operators are now requiring wind turbines to be equipped with a "cut out" switch that disconnects the wind farm from the grid by remote control. This becomes an obvious waste of energy.

## THE SHADOW GRID—THE FOSSIL FUEL STAND-IN FOR NO SHOW WIND

Wind's unpredictable nature tends to provide energy that does not match consumer demand. As noted in the examples of ERCOT, California and the Pacific Northwest, wind volatility makes it unsuitable for electricity planners to rely on wind energy to meet peak demand needs. In order to mitigate these negative effects, the grid operators and planners must construct a shadow grid, typically consisting of fossil-fueled power plants (particularly gas-peaking units). This shadow grid stands as reserve generation for those times when wind resources are not delivering their potential capacity. At those times, homes still need heat and light, commercial and industrial sites still have to run electric equipment, when the wind may not be producing up to its potential.

Effectively, we end up building new fossil-fueled peaking power plants (usually natural gas) to back up the wind resources that were intended to eliminate fossil-fueled resources in the first place.

This duplication of costs is forced onto consumers, who must pay for both the wind turbine and the back-up generator.

THE LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) recognizes the need to back up wind with gas in order to maintain capacity and reliability. Consider the following statement from the LADWP's executive summary of its 2010 Draft Integrated Resource Plan:

*'There is ongoing debate regarding the level of on-peak reliability of renewable resources. However, the renewable resources were added mainly to satisfy Renewable Portfolio Standard (RPS) target requirements, while natural gas resources were incorporated to ensure system reliability.'*

In other words, the LADWP overtly recognizes that the wind projects on the system are only meeting the legislatively mandated RPS as they provide intermittent energy. But to actually operate a reliable system, with capacity and energy, LADWP must install natural gas generation resources. In spite of the obvious environmental objective of wind energy, the shadow grid of gas generation will result in air emissions, including carbon dioxide. Many such generators are "simple cycle" peaking units, which tend to be less efficient and have the highest emissions among gas-fired generators.

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**"This duplication of costs is forced onto consumers, who must pay for both the wind turbine and the back-up generator."** [emphasis added]

# From the Real World:

12/9/2012 “Rise in renewable energy will require more use of fossil fuels,”  
*Los Angeles Times*



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**FROM THE ARCHIVES**

Southland can expect tight electricity supplies  
*June 8, 2013*

Interest in renewable energy may stick as oil prices surge  
*March 11, 2011*

### Rise in renewable energy will require more use of fossil fuels

*As the state attempts to reach the goal of producing one-third of its electricity from wind and solar sources by 2020, more reliable sources of traditional power will be needed as a backup.*

**December 09, 2012** | By Ralph Vartabedian, Los Angeles Times

“One of the hidden costs of solar and wind power — and a problem the state is not yet prepared to meet — is that wind and solar energy must be backed up by other sources, typically gas-fired generators. As more solar and wind energy generators come online, fulfilling a legal mandate to produce one-third of California's electricity by 2020, the demand will rise for more backup power from fossil fuel plants.”

<http://articles.latimes.com/2012/dec/09/local/la-me-unreliable-power-20121210>

# 4/3/2013 “European Power Grid Group Says More Fossil-Fuel Plants Needed,” *Bloomberg*

The screenshot shows the Bloomberg website interface. At the top, there's a navigation bar with 'Bloomberg.com', 'Businessweek.com', 'Bloomberg TV', and 'Premium'. Below that is a 'MARKET SNAPSHOT' table with columns for U.S., EUROPE, and ASIA. The main headline is 'European Power Grid Group Says More Fossil-Fuel Plants Needed' by Rachel Morison, dated Apr 3, 2013 6:10 AM MT. The article content is partially visible, showing a 'WATCH LIVE' button and a 'GET THE BLOOMBERG WASHINGTON NEWSLETTER' sign-up button. There are also navigation tabs for 'HOME', 'QUICK', 'NEWS', 'OPINION', 'MARKET DATA', 'PERSONAL FINANCE', 'TECH', 'POLITICS', 'SUSTAINABILITY', 'LUXURY', 'TV', 'VIDEO', and 'RADIO'.

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## European Power Grid Group Says More Fossil-Fuel Plants Needed

By Rachel Morison - Apr 3, 2013 6:10 AM MT

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"Europe's share of renewable power capacity will rise to more than 40 percent by 2020, spurring a need for additional back-up coal and natural gas plants, according to Entsoe, the region's grid-operators group... The increasing volume of variable renewable generation urgently requires 'complementary measures' to ensure the balancing of the system, it said."

<http://www.bloomberg.com/news/2013-04-03/renewables-to-exceed-fossil-fuels-in-european-generation-by-2020.html>

# 8/20/2012 “Merkel’s Green Shift Forces Germany to Burn More Coal,” *Bloomberg*

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## Merkel's Green Shift Forces Germany to Burn More Coal

By Stefan Nicola & Tino Andresen - Aug 20, 2012 9:59 AM MT

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<http://www.bloomberg.com/news/2012-08-19/merkel-s-green-shift-forces-germany-to-burn-more-coal-energy.html>

**3/1/2012 *The Oregonian***

"Though PacifiCorp says it does everything possible to manage costs, its representatives are telling Utah customers to expect rate increases nearly every year for the next decade as it makes capital investments to clean up coal plant emissions **and build wind farms, transmission lines and natural gas plants...**"  
[emphasis added]

# Idaho Power's warning in 2007 ...

“The Company is concerned that the study, which generally will be referred to as Idaho Power's "Wind Integration Study" might leave the incorrect impression that the study covers all costs of integrating wind generation. **In fact, a number of potentially significant costs associated with the integration of wind resources are not addressed in the wind integration study.** Attachment 1 entitled "Operational Impacts of Integrating Wind Generation into Idaho Power's Existing Resource Portfolio" identifies a number of the costs not addressed in the study. The study only addresses the additional costs the Company will incur in providing the additional up and down regulating reserves necessary to integrate or "firm" the wind generation without a reduction in reliability...” [emphasis added]

“In addition, the study does not consider the impacts of the integration of substantial wind generating resources on the Company's transmission system, either internal or interconnecting to other utilities or regions or the infrastructure investment levels necessary to support the growth in wind generation demands on the system. Furthermore, the study does not consider the fact that, once the number of developed wind projects reaches a certain level, the firming availability of the Company hydroelectric resources will have been exhausted and the firming requirements for hydroelectric resources will have been exhausted and the firming requirements for additional resources of any kind will have to come from new, and much more expensive back-up sources such as coal and gas-fired plants.”

“The wind integration study makes it clear that there is still a great deal of uncertainty surrounding the ultimate impact and cost of adding large amounts of intermittent wind generation to the Company's resource portfolio.”

# American Tradition Institute:

American Tradition Institute



## *The Hidden Costs of Wind Electricity*

*Why the full cost of wind generation is unlikely to match the cost of natural gas, coal or nuclear generation*

*George Taylor, Ph.D.  
Thomas Tanton*

American Tradition Institute:  
Center for Energy Studies  
Washington, DC

December 2012

December 2012

“There have been two big misunderstandings about wind electricity. One, that it can operate by itself, and two, that its cost is approaching the cost of conventional sources such as coal, natural gas or nuclear. Neither of those assumptions is correct. The first because, in the absence of energy storage or hydro generation, the only way wind can operate is as an appendage to coal or natural gas generation; and the second, because wind imposes costs on other parts of the system which no previous technology has imposed and requires more new transmission infrastructure than any previous technology has required.”

“These indirect and infrastructure costs are not difficult to understand or difficult to measure. They have not been counted in most “cost of electricity” comparisons because utility regulators have not required wind operators to pay for them -- they’ve required consumers to pay for them. **But that should not be an excuse for policymakers to ignore their impact on consumers, businesses and the economy.**” [emphasis added]

# An Idaho example of wind infrastructure costs:

stewardship

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**Gateway West**

Energy use in the area and demand is fast approaching the limits of the existing electrical system. This growth comes from both new and existing customers. Individually, customers today are using 25 percent more electricity than they did 20 years ago. To meet this increasing demand, new facilities are needed.

As part of PacifiCorp's Energy Gateway Transmission Expansion Project, Idaho Power and Rocky Mountain Power are planning to build a new High-voltage transmission line across southern Wyoming and southern Idaho. Gateway West<sup>SM</sup> will add more than 1,000 miles and supply present and future needs of customers. The project also will enhance electric system reliability in the service areas of both companies. In addition, Gateway West will enable electricity generated from existing and new resources, including wind, to be delivered to our customers throughout the region.

The proposed route for Gateway West's Windstar to Populus segment extends from eastern Wyoming to a transmission hub, the newly completed Populus substation, near Cassia, Idaho. The proposed route for the Populus to Minners segment continues from the Populus substation across the state to the Minners substation southwest of Boise, Idaho.

**Project Timeline**

- Public Scoping - June 2008
- Environmental Impact Statement - 2007 - 2010
- Public subscoping - June 2009 through project completion
- Permitting and obtaining rights of way - 2011-2012
- Estimated line in service for customers - 2016 - 2021

**Additional Information About the Project**

Under the National Environmental Policy Act, the Bureau of Land Management is currently developing an Environmental Impact Statement on Gateway West - a process that began in June 2008 with Public Scoping meetings. BLM oversees this process and will continue to host public meetings to collect official public comments.

The BLM published the draft Environmental Impact Statement on July 29, 2011, including a 30-day public comment period on the document that was completed Oct. 18, 2011. During this period, BLM held 17 public open house meetings in various communities along the proposed and alternate routes. The public was encouraged to review the draft EIS and provide comments to the BLM regarding the project. See below for additional information on public participation and project history, and visit the BLM's website<sup>SM</sup> for more information.

Gateway West greatly improves access to significant and diverse resource potential in southeastern Wyoming. The following table shows proposed resources in the area from PacifiCorp and third-party resources. Lines and from its generation interconnection request queue.

**Resources dependent on Energy Gateway West\***

Developer	MW	Resource Type	Point of Interconnection
PacifiCorp	2075	Wind	Miners-Difficulty line
Third Party	252	Wind	Point of Rocks-Rock Springs line
Third Party	0.1	Wind	South Cody Substation
Third Party	49.5	Wind	Hoyle Creek Substation
Third Party	0.11	Wind	Platte Substation
Third Party	97.9	Wind	DJ-Difficulty line
Third Party	503.2	Wind	Aeolus Substation
Third Party	150	Wind	Craven Creek-Chappel Creek line
Third Party	450	Wind	Firehole-Flaming Gorge line
Third Party	500	Wind	Bridger-Aeolus line
Third Party	1062	Wind	Miners-Freezeout-Difficulty line
Third Party	230	Wind	Heward Substation
Third Party	79.5	Wind	Rock Springs-Naughton line
Third Party	2000	Wind	Windstar Substation

The table is intended to reflect proposed resources that would depend on Gateway West and is not representative of requests for transmission service or capacity rights on Gateway West. These include the company's planned resources, according to its 2012 Business Plan Portfolio, and third-party requests active in PacifiCorp's generation interconnection queue as of March 2012.

**Public Participation**

The final Environmental Impact Statement is scheduled to be released in November of 2012 at which time there will be a 60-day public comment period. The BLM will then issue a Record of Decision providing an assessment for the project. This Record of Decision is scheduled to be released in June of 2013. More information can be found on BLM's website<sup>SM</sup>.

Public participation is an important part of the transmission line development process and is completed at all stages to address

“The \$7 billion proposal by Rocky Mountain Power and Idaho Power Co. to upgrade distribution of electricity would be the largest industrial project in the nation.”

<http://www.idahostatesman.com/2012/10/05/2299095/power-line-route-generates-storm.html>

Resources dependent on Energy Gateway West\*

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# And lastly...

7/12/2011 Idaho's Energy, Environment, and Technology Interim Committee meeting:

“**Representative Eskridge** said it would also be helpful to have a presentation examining what the **true cost of wind generation** incorporating integration costs, transmission costs, reserves costs and so on. He said it would seem to be more than what is seen on the initial purchase price.”

[emphasis added]

**Representative Eskridge hit the nail on the head with that statement.** The wind industry has never had to show their TRUE cost – not here in Idaho, not anyplace.

And to my knowledge, the Energy Interim Committee never followed through in searching this out.

**So my question is:** how can all those supporting wind in Idaho really know what the impacts of wind will be upon Idaho's ratepayers and economy without knowing the TRUE cost of wind???

**THEY CAN'T KNOW and THEY DON'T KNOW.**

# In conclusion:

Borrowing a line from the 9/23/2013 Huffington Post UK piece, "*Wind Energy: Chalk It Up as a Loss.*"

***"Isn't it about time that we looked at all the evidence cumulatively?"***

**Isn't it about time Idaho determines the TRUE COST of wind?  
Idahoans and our economy deserve as much.**

# Any Questions?



Please note: this is NOT a Big Oil vs Big Wind issue.