

Irresponsible by Nature: No need for, no need to rush Rush Creek Wind Project

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Introduction

If the Colorado Public Utilities
Commission (PUC) rushes approval of
Xcel Energy's proposed wind project
Rush Creek – as the utility wants – the
Commission will not be serving the best
interests of Coloradans, Xcel's 1.4 million
ratepayers, or wildlife and, indeed, will
have an adverse impact on all Americans.
There is nothing to be gained and
everything to be lost by allowing the utility
to rush this project through without Xcel,
interested parties, and others having the
opportunity to study its economic and
environmental impact.

Among the many objections are the following:

- The state does not presently need more electricity; Xcel does not claim otherwise.
- Xcel claims it has already met the state's renewable energy mandate.
- If the primary concern is emissions, the most efficient, least expensive way to reduce greenhouse gas emissions (GHGs) as well as EPA "criterion pollutants" is to generate electricity from Colorado natural gas.
- The project does not save Coloradans money as promised unless federal subsidies are passed along to ratepayers. Otherwise it will cost them. In any case, all American taxpayers will be paying for this project.
- Colorado's electricity rates have skyrocketed over the last decade. This project will exacerbate that trend.
- The project requires an *estimated* 90 miles of transmission lines, reducing efficiency.
- Xcel uses the term "estimated," implying that rights-of-way have not yet been acquired, which may slow the project.
- Maintenance problems with wind turbines are unique, and Xcel needs to address them.

- Wind farms are infamous for killing birds and bats. Xcel at least needs to allow time for themselves and others to investigate what the company can do to mitigate the problem. It also requires time to show compliance with the Endangered Species Act.
- Xcel's requested compressed timeline prohibits appropriate and thorough vetting of the 95,000 acre, \$1.1 billion, 90 mile transmission line with 150 feet of right-of-way, and 300 turbine wind project spanning five counties.
- Rushing the timeline and approval process disrespects the PUC, all Coloradans and ratepayers who have the right to expect neutral regulators to take the time allowed under state law to consider all aspects and hear from all interested parties regarding projects that will have enormous financial and environmental impacts on the entire state, indeed the U.S.
- This project appears to have only one real purpose: to enrich Xcel's coffers with the Production Tax Credit (PTC). Yet the PTC shouldn't even exist.

By delaying its public application until the very last minute, Xcel has demonstrated a high level of arrogance as it has privately executed plans to move ahead with the project, simply assuming the PUC would rubber stamp it. This is all the more arrogant given that the PUC denied the utility's last renewable energy effort, the expansion of its Community Solar Gardens.1 Furthermore, Colorado's largest investor owned utility has engaged in questionable outreach tactics to local elected officials in order to garner support for the Rush Creek Wind Project. The PUC actually has a function and a valuable one. If Xcel believes otherwise, let it lobby for its abolition.

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What is Xcel thinking? Likely, it is not. This is Xcel's first effort to construct its own wind project, and it is clear they do not know how to do it.

Should the PUC grant approval, at the very least the Commission should require Minnesota-based Xcel Energy to pass along its considerable subsidies in the form of the Production Tax Credit (PTC) to

Colorado ratepayers who will be paying for the project, and indeed Xcel's promise of saving Coloradan ratepayers "hundreds of millions of dollars" is predicated on such a pass-along.

Colorado does not need extra generating capacity at this time. Even as the population has been increasing, power consumption has barely done so.

No need for increased electrical capacity

Colorado does not need extra generating capacity at this time. Even as the population has been increasing, power consumption has barely done so.² The state legislature has mandated that by 2020 investor-owned utilities, including Xcel, must have at least 30 percent "renewable fuels" in their mix, but Xcel claims it has already met that mandate.³ Further, the EPA's so-called "Clean Power Plan," while remanded to lower courts by the U.S. Supreme Court, may yet

pass muster, especially given the death of Justice Antonin Scalia.⁵ But proponents of the plan say Colorado is already well positioned to meet the required standards.⁶ The fastest and most efficient means of reducing GHG emissions is to generate electricity from Colorado natural gas. Xcel says it already has significant capacity at natural gas plants to do this without actually having to build new ones.⁷

Job claims

This project is also being sold as a jobs program, which is disingenuous. David Eves, Xcel's president and CEO of Public Service Co. of Colorado, Xcel's subsidiary in the state, said in April: "Our plan is to expand our wind offerings to provide hundreds of new jobs for Coloradans. .." Many of the jobs, those in turbine construction, will last only about three months.9 Xcel spokesman Mark Stutz told the Denver Post that the Rush Creek project will create "350 construction jobs, and then six to 10 permanent jobs." Further, despite Xcel's repeated talk of these being "wellpaying jobs,"11 Bureau of Labor Statistics data indicate that elevator installers and repairers earn on average 60 percent more than wind turbine technicians.12

It's also always fallacious to pretend that these projects create jobs. The same amount of money spent in any other area would also generate jobs. Ultimately, if the goal is to create the most jobs with an energy project, then putting Coloradans on large hamster wheels connected to the grid would achieve the same end.

Economic development for rural Colorado?

a Republican who represented Eastern Colorado from 2005-2014 and now lobbies with State Senate colleague Josh Penry at EIS Solutions, suggests wind farms are economic drivers for rural Colorado: "Any [County] commissioner from eastern Colorado understands that royalty payments make a huge difference for farmers and ranchers in rural Colorado. Further, commissioners from a half dozen rural counties know that property tax payments from wind farms provide much needed revenue to provide basic services for their constituents." Mr. Brophy then asked, "Why do you want to stop a project

Former state lawmaker Greg Brophy,

that benefits rural Colorado without costing anyone else a dime extra?"¹⁴

Mr. Brophy relies upon a classic economic fallacy that intentionally fails to take into account the opportunity costs of higher electric rates due to this project and the millions of dollars in taxpayer subsides that will enrich Xcel at the expense of taxpayers. If Xcel gets its rushed approval for Rush Creek, then interested parties will be denied appropriate time to analyze Mr. Brophy's claims and identify those opportunity costs.

With a project so large, so complex, so expensive, requiring delicate cooperation from so many different governmental entities, why would Xcel request such a compact time-line?

This project is entirely subsidydriven

With a project so large, so complex, so expensive, requiring delicate cooperation from so many different governmental entities, why would Xcel request such a compact timeline? The answer is simple – to enrich Xcel at taxpayer expense.

On page two of Xcel's Motion to "Shorten Notice and Intervention Period" the company cites the Omnibus Appropriations Act, which President Obama signed into law on December 18, 2015.

"The Act includes a five-year extension of the Production Tax Credits ("PTC") for wind and other eligible renewable energy projects. While the PTC has been extended for five years, its decline [phase-out period] begins after December 31, 2016. Eligible projects that meet the safe harbor under the Act, i.e., expenditures of 5 percent of the total project cost by December 31, 2016 and in service by

December 31, 2020, will qualify for the 2016 PTC level of 100 percent." 15

In order to take full advantage of millions of PTC taxpayer dollars, not only does the company have to get the project approved, but it also intends to spend 5 percent (more than \$50,000,000) of the \$1 billion plus project budget before the end of 2016. This seems a little like playing roulette with ratepayer money, but if it gets approved then Xcel stands to make hundreds of millions of dollars.

Subsidies are what this wind project is all about. Originally they were intended to kick start the wind (and solar) energy sectors, but the wind industry claims that it is now well-established. ¹⁶ Xcel even states on its Web site, "The cost has declined, making wind energy competitive with natural gas generation …" ¹⁷ If wind is now competitive, why the need for subsidies?

Part of the explanation is that wind is *not* competitive with gas, much less with cheaper coal. Numerous sources support this, including, perhaps most powerfully, the man who is believed to have the greatest financial stake in wind power in the United States, Berkshire Hathaway CEO Warren Buffet. Two years ago in public he admitted, ". . . on wind energy, we get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit."¹⁸

In fact, according to a 2015 Energy Information Administration (EIA) report, in 2013 wind energy received \$4.274 billion in direct subsidies from the federal government (meaning American taxpayers). "Wind energy received the largest share of direct federal subsidies and support in FY 2013, accounting for 37 percent of total federal electricityrelated subsidies," it states. 19 And this for producing less than five percent of the nation's electricity. No other source of electricity even comes close. The claim that all forms of electricity generation receive subsidies is technically true but disingenuous. All fossil fuel plants combined received just \$136 million for producing a majority of the nation's electricity, while nuclear plants received just \$37 million for their production of a fifth of America's electricity generation.²⁰ The general rule with subsidies is that the less efficient the source, the higher the level of subsidy. Another general rule is that subsidies help ensure that that which is inefficient stays so by protecting it from competition.

Many states further subsidize wind electricity, such that "Total subsidies to wind energy" in 2013 were a stunning \$5.9 billion. 21 The Congressional Research Service projects taxpayers will shell out \$13.8 billion in PTC subsidies alone for wind energy between 2014 and 2018. 22 That's about \$123 per taxpayer. Assuming

there are two taxpayers in a typical Colorado household, then they will have an invisible \$20 tacked onto their monthly electricity bills.

Who profits? Xcel shareholders. It is a classic redistribution scheme from American taxpayers to Xcel shareholders worldwide. Americans in Durango and Peoria will be enriching investors in foreign countries.

Countries that wind advocates urge the U.S. to emulate, such as the United Kingdom, are ending subsidies to onshore wind, 23 while others are cutting them back. 24 They realized too late that wind power does not live up to its claims. Should we not learn from their experience?

The very history of the PTC condemns it. It was begun back in 1992²⁵ as a way to kick start the industry.²⁶ Yet as noted above, the industry itself says, "Wind power has now firmly established itself as a mainstream option for a new electrical generation."²⁷ Thus,were this true, the PTC would now be in the same league as an excise tax begun in 1898 to support the Spanish-American War – finally rescinded in 2006.²⁸ The PTC was not initiated to reduce GHGs. As for what the EPA has traditionally considered pollutants, those were already dropping dramatically in the U.S. by then and have continued to do so.²⁹

Rather, the PTC was propelled by worries the U.S. would run out of fossil fuels. We now find ourselves awash in petroleum and clean natural gas. ³⁰ Colorado is a national leader in natural gas production. ³¹ Further, since then, improvements at existing nuclear plants have raised nuclear energy's contribution to U.S. electricity generation to that current one-fifth. ³² Nuclear energy, of course, is also emissions-free.

The National Academy of Sciences in a 2013 report estimated that removing tax

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credits for renewable electricity would result in a mere 0.3 percent increase in power-sector emissions.³³ In a statement that got his company ejected from the American Wind Energy Association,³⁴ Exelon CEO Christopher Crane said, "If the government believes that they're improving the environment by subsidizing wind, they are wrong."³⁵ It's not hypocritical that Exelon continues to

operate and seek to operate more wind farms. Like Warren Buffet, like Xcel, they wish to profit from largesse provided by Congress.

Coloradans will not save money with this project, they will lose it

Xcel claims that this project will financially benefit Colorado. CEO David Eves, in reference to the project at hand, said, "Adding wind power means hundreds of millions of dollars in savings for Colorado energy customers." An online Xcel fact sheet uses the same figure but specifies "over the next 25 years." In fact, the data indicate that new wind energy will considerably increase energy costs.

How?

A spokesman for Xcel said that the electricity from the proposed wind farm would not obviate the building of any new plants, but rather would allow curtailed production at a current plant or plants - presumably inexpensive coal, since it has the highest emissions.38 Data normally used when comparing sources of electricity are new-versus-new. (Meanwhile, the Independent Evaluator's Report attachment to Xcel's application is only a comparison to other existing wind projects.³⁹) Even there, the mostcited source, the Energy Information Administration (EIA) of the Department of Energy, admits production prices for wind and solar "will not necessarily correspond" to other sources because wind and solar are "variable renewable energy." That means they are dilute

(low-concentration) and intermittent (unreliable).⁴⁰ This problem regarding wind, specifically Xcel's outrageous claim as to how much electricity its proposed project will produce, is discussed below.

But more importantly for our purposes here, the EIA comparisons are of new energy to new energy, whereas in this case, the comparison is of new wind versus current sources. A 41-page report from the Institute for Energy Research last year found that new wind generation costs are about three times that of existing coal and over double that of existing conventional combined cycle gas.⁴¹

They conclude, "Most existing coal, natural gas, nuclear, and hydroelectric generation resources could continue producing electricity for decades at a far lower cost than could any potential new generation resources." Therefore, far from realizing any savings, Colorado ratepayers can expect increased rates – unless Xcel passes along savings from the PTC subsidies. There is precedent for this. In its unsuccessful effort to get PUC approval for its proposal to increase the amount of power it obtained from community solar gardens, Xcel agreed to pass back its solar renewable energy credit to ratepayers. ⁴³

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One Xcel fact sheet on the project at hand indicates that is indeed where the proposed "hundreds of millions of dollars" of savings will come from. "Customers are expected to save \$800 million (nominally) \$400-500 million (net production value), net of all costs, over the next 25 years by taking advantage of available Production Tax Credits . . . "44 In its motion to tremendously expedite the approval process, Xcel states, "As discussed in the Application, the Company is bringing forward its Application for approval of the Rush Creek Wind Project to take advantage of the 100 percent PTC for customers."45

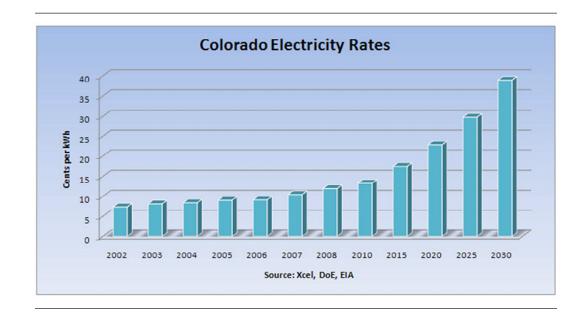
This does not mean a 100 percent pass through to consumers. The reference is to 100 percent of the PTC available to utilities. If Rush Creek is approved, the PUC should require Xcel to pass along the entire PTC to consumers. This would probably cause Xcel to cancel the billion dollar project.

An extended analysis of government energy records by the Independence Institute has found that "across all sectors of Colorado the cost of electricity has skyrocketed more than 67 percent between 2001 and 2014, easily exceeding median income growth and the expected rate of inflation for the same period, has revealed."

This trend will continue according to Xcel's own projections. The chart below, based on the Company's projected impact of Colorado's Clean Air Clean Jobs Act passed in 2010, estimates Colorado's residential ratepayers to pay 38 cents a kilowatt hour by 2030, more than three times current costs in constant dollars.⁴⁷

Colorado ratepayers continue to be a major source of revenue for the Minnesota-based Xcel Energy. In 2015, Colorado ratepayers made up about one quarter of the company's total customer base, yet they earned Xcel 48 percent of the company's diluted earnings per share.⁴⁸

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Xcel's claim for electricity production is physically impossible

Xcel's claim as to how much electricity its proposed project will produce is blatantly false. Xcel's claim as to how much electricity its proposed project will produce is blatantly false. It is based on what is called "nameplate capacity," which is easily calculated by the number and rated output of the turbines. That is, 300 two megawatt (MW) turbines would produce 600 MW. The major (but not sole) problem is the prior-mentioned element of variability.

If wind velocity is too low, the turbines do not just turn slowly; they do not turn at all. If it is too high, the turbines are "feathered," that is, the blades are turned so they cannot catch the wind, to prevent damage. According to the Leidos Independent Evaluator's Report attached to Xcel's application, cut-in speed for the Vestas turbines the utility will be using is 3 meters per second, cut-out 20, or 6.7 miles per hour (mph) to 45 mph.⁴⁹

Earlier this year, one area in Colorado recorded steady wind speeds of 62 mph, with a gust to 148 mph. Neverthless, it is usually low wind speeds that plague turbines.⁵⁰ At any given moment there are many areas of Colorado below 6.7 mph.⁵¹

Thus, to actually provide nameplate capacity the wind must be blowing at this "goldilocks" velocity 24 hours a day. This is fantasy.

The term describing actual production is "capacity factor." According to the National Renewable Energy Lab (NREL) located in Golden, capacity factor is probably around 30 percent, which is "the long-term historical average fleet-wide net capacity factors in the United States."⁵²

So the use of nameplate capacity is simply disingenuous. Yet Xcel still chooses to

use it. Now, add that *any* figure regarding households is somewhat disingenuous since the added wind capacity is intended simply to replace electricity already being generated from inexpensive fossil fuels and it raises questions as to why Xcel is building the project in the first place.

Yet actual electricity production is only one factor in what is delivered to the consumer, and here wind (along with solar) truly suffer in comparison to other forms of generation. Transmission lines are a consideration often given little thought concerning wind energy, yet they can dramatically increase the cost of delivered wind and solar electricity as opposed to the normal standard of cost of production. This is a serious oversight, given that fossil fuel and nuclear plants can be, and are, located close to the grid, as opposed to needing to be placed where there are large tracts of available land with relatively high levels of wind or sun.

Xcel revealed that its Rush Creek project will be 95,000 acres located across Arapahoe, Cheyenne, Elbert, Kit Carson, and Lincoln counties and will require an estimated 90 miles of transmission lines.⁵³

For each extra mile, Xcel will have to pay for right-of-way, extra cable and towers, and also add in what is called "transmission line loss," meaning the longer the lines, the less electricity actually reaches the destination. In Colorado, the average loss is seven percent.⁵⁴ It is likely to be even more over 90 miles. Thus, even granting a 33 percent capacity factor, that is, actual generation, the 200 MW figure would be too high.

Other factors discussed below will reduce the capacity factor even more, including curtailment of wind turbine production during periods of low energy demand and "good wind," and reducing bird and bat fatalities.

This relative inefficiency of wind essentially forces supporters to spin off any number of falsehoods and obfuscations, such as that "wind turbines generated 67 percent of Xcel Energy's Colorado-made electricity." That seemingly impressive figure was for a single morning of a single day.⁵⁵ With what other form of energy, other than solar, would generation data be presented in such a way? Why

don't we hear data for mornings on which essentially no Xcel turbines were operating?

The nameplate falsehood is also used in Xcel's calculations of reduced emissions. CEO David Eves said the project will eliminate about 1 million tons of carbon pollution each year.⁵⁶ That is close to the amount, according to Department of Energy calculations, for eliminating bituminous coal burning – at the 600 MW level.⁵⁷ So again, Xcel is using a pure fiction to exaggerate benefits.

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This relative inef-

Wind energy's unique maintenance problem

The public also deserves cost estimates regarding maintenance and ultimate disposal of the turbines. Other forms of electricity generation – fossil fuel, nuclear, hydroelectric, and geothermal – require as few as a single generator or turbine per plant. Solar fields may be completely passive or simply rotate the panels to catch the most sunlight. But Xcel's Rush Creek project calls for 300 turbines, each of which comprises myriad parts that endure friction whenever operating.

This is one reason when visiting any given wind project, visitors will find that some of the turbines are not turning, sometimes the vast majority. (Another reason, of great interest, is that when a utility ramps down production to meet lower demands during the day, the first generators it shuts down are wind turbines.)⁶⁰ Sometimes all

the turbines of a project are shut down for curtailment purposes.⁶¹ This further reduces overall generational output, the capacity factor, even more.

According to the EPA, wind turbines typically require maintenance every six months. ⁶² Because of this constant wear and tear, both the American Wind Energy Association ⁶³ and the EPA ⁶⁴ say don't count on wind turbines lasting more than 20 years. Conversely, the oldest US commercial nuclear plant in operation began operating in 1969 and is now licensed until 2029. ⁶⁵ The first nuclear aircraft carrier, the U.S.S. Enterprise, is only now being decommissioned after 55 years, having used the same twin reactors that whole time. ⁶⁶

The birds and the bats

If Xcel avoids any federal nexus, they will not be forced to comply with such federal regulations as filing the EPA's federal Environmental Impact Statement. Nor does Colorado require any such assessment. Nevertheless, wind projects always have an environmental impact. Xcel tacitly acknowledges this with a "fact sheet" released as an attachment to its application., "Birds and Power Lines."67 It's dated May 18, 2016, indicating it was prepared specifically to support Rush Creek. This is incomplete because Xcel only acknowledges the threat from transmission lines and not from the blades themselves. Wind turbines are notorious killers of birds as well as bats. Xcel has done nothing to address wildlife issues. Since Xcel has acknowledged wildlife concerns, they should actually address them. At the very least, Xcel should provide information and time to others who wish to conduct, and possibly publish, environmental assessments.

Major environmental groups such as the Audubon Society have called wind turbines "Cuisinarts" for their tendency to slice and dice fowl.68 The World Council for Nature in the United Kingdom last year released a report entitled "Wind Farms: A Slaughter Kept Hidden from the Public."69 All wind projects kill birds, and lots of them. Actual counts can vary dramatically, in part because some researchers only look quite close to the turbines, whereas dead birds can be thrown very far.70 Therefore, numbers given by the industry are not to be trusted. We also know that larger projects such as the one at hand will kill more birds, because once a fowl enters it's that much harder to exit.

Summaries from Germany and Sweden published in 1993, as cited by a report of the California Energy Commission,⁷¹ found annual bird deaths per turbine per year as high as 309 in Germany and 895 in Sweden. For 300 turbines, as with the proposed project, that would be a range of 93,000 to 268,000. These seem high, and, indeed, in 2012, the Spanish Ornithological Society (SEO/Birdlife) reviewed actual carcass counts from 136 monitoring studies and concluded that

Spain's 18,000 wind turbines are killing 6-18 million birds and bats yearly, or "only" 33 to 100 per turbine. For Xcel's proposed project that would be a range of 9,900 to 30,000 butchered birds per year. American studies have found as many as 573,000 bird collisions from turbines annually, but one study looking at only the monopole variety of turbine that Xcel will be using found a lower range of between 140,000-328,000 annually. Nonetheless, it used combined data from studies before 2013, and the number of wind turbines has increased considerably since then.

Unfortunately, it appears that the same increased height and rotor length that has made turbines more efficient at electricity generation also makes them more efficient bird killers. ⁷⁴ The Vestas turbines Xcel will be installing will be state-of-the-art bird butchers, the latest model of Cuisinart.

Sheer numbers of fileted fowl, though, are hardly our only concern. There are 18 bird species in Colorado listed as threatened or endangered.⁷⁵

We note that Xcel must receive clearance⁷⁶ under the Endangered Species Act: Section 7(a)(2)⁷⁷ that tremendously delayed the TVA Tellico Dam construction because of a tiny fish called the snail darter,78 even as the Act launched the northern spotted owl controversy in the Pacific Northwest causing a vastly longer disruption in logging. 79 Xcel's timetable essentially assumes the U.S. Fish & Wildlife Service will simply rubber stamp its project. And they may be correct. But a fair measurement of the impact on Colorado threatened and endangered species, if not by Xcel, then by outside parties, will require actual time.

Further, compliance with the Endangered Species Act should not be the goal. Protection of important wildlife should be.

Major environmental groups such as the Audubon Society have called wind turbines "Cuisinarts" for their tendency to slice and dice fowl.

"There are species of birds that are getting killed by wind turbines that do not get killed by autos, windows or buildings," Shawn Smallwood, an ecologist who has worked extensively in Altamont Pass, California, which is known for its expansive wind projects and raptor deaths, told the science journal Nature. He has found that Altamont blades kill an average of 65 golden eagles a year. Raptors are both beautiful and vital to the ecosystem. They are slow to reproduce and favor the same wind corridors that energy companies do. All parts of the same wind corridors that energy companies do.

Three hundred turbines *will* kill lots of birds – the only question is number and species. But even though the problem cannot be eliminated, steps can be taken to ameliorate it. (That said, these tend to reduce even further actual electricity generation. The more one learns about wind generation, the less efficient one discovers it is.) To what extent will Xcel take those steps necessary to reduce bird deaths? Colorado ratepayers should know if Xcel has any plans to reduce adverse environmental impact – not platitudes but actions.

Inevitably, wind projects also kill bats. Bats represent a substantial contribution to mammalian species diversity and ecosystem processes in North America⁸³ and have important economic impacts on agricultural systems.⁸⁴

Dead bats are found underneath wind turbines across North America, and bat fatalities have been documented at almost all of the wind facilities at which thorough bat surveys have been conducted. 85 Estimates of bat mortality from wind turbines in the contiguous United States for 2012 range from 600,000 to 880,000.86 Again, these are old data; every new turbine built means more bird and bat deaths.

Limited data collected by Dr. Mark Hayes of the University of Colorado, Denver also suggest bat fatalities are higher in mountainous areas of the United States.⁸⁷ Yes, that's us. Sadly, the famous "bat radar" does not help them. It appears that perhaps 90 percent of bat deaths from wind turbines are caused by a sudden drop in air pressure from the blades, causing massive internal bleeding.⁸⁸ Thus steps taken to ameliorate impact deaths – which works with birds – may not work with bats.

Further, again it is the newer, more efficient turbines that are the more efficient bat killers.⁸⁹ There is literature that identifies the best and worst placement of sites for turbines and mitigation strategies that would minimize impacts to both bats and birds,⁹⁰ and the public deserves to know if Xcel has taken that into account. If not, outside groups, including those representing a variety of stakeholders, should be given time to analyze this literature and comment on Xcel's plans.

Three hundred turbines will kill lots of birds – the only question is number and species. But even though the problem cannot be eliminated, steps can be taken to ameliorate it.

Hypocrisy, disrespect, and disapproval

In documents just filed with the PUC, Xcel requests an expedited timeline with approval in less than six months for one of the nation's largest wind projects. Instead of the usual 30 days for interested parties to apply for intervention, Xcel asks for 11 business days. C.R.S. 40-6-108 allows intervenors 30 days to file their motion, but that same statute allows the Commission to Considering this project covers 95,000 acres, and will have an estimated 90 miles of high voltage lines (meaning they have yet to obtain permission for the required 150-foot wide right-of-way,) it is unfathomable that the PUC commissioners could make an informed decision in five months.

prescribe a shorter time,⁹¹ so Xcel's motion is authorized.

However, "authorized" doesn't mean "reasonable" because the time pressure is entirely of Xcel's own making.

Xcel wants full approval by November 10, 2016. Considering this project covers 95,000 acres, and will have an *estimated* 90 miles of high voltage lines (meaning they have yet to obtain permission for the required 150-foot wide right-of-way,)⁹² it is unfathomable that the PUC commissioners could make an informed decision in five months.

Even the PUC staff finds this timeline concerning. In Staff's "Preliminary Response" from Attorney General Cynthia Coffman, staff says:

"Public Service's Motion requests an expedited schedule in order to reach a Commission decision by November 10, 2016. Staff is concerned that the scope of the Proceeding envisioned by the Company, in particular the Company's request for the Commission to establish a baseline of how the net economic benefit is to be calculated for

future Rule 3660(h) filings, may be beyond what is necessary or appropriate for the Commission to consider in this proceeding, especially in light of its expedited nature."²³

Judging by Xcel's requested timeline, the company's confidence in approval appears quite high. The company already has saddled ratepayers with a wind turbine contract (dated April 29, 2016) before it even submitted the Rush Creek Wind Project application to the PUC. Furthermore, it intends to award a contract for construction on August 15, 2016, nearly three months before it receives final approval.⁹⁴

This request for an expedited time line is hypocritical. Xcel knew about the Omnibus bill in advance and could have gone public with plans in December 2015. Instead, the new public contract dates suggest that Xcel has been quietly planning the Rush Creek project for quite some time, yet it asks the PUC to limit the amount of time others have to intervene and provide critical economic and environmental analysis for it.

TIMELINE

Date	Deadline/Action
May 13, 2016	Application and supporting testimonies filed
June 1, 2016	Interventions due (including responses to proposed procedural schedule and1waiver requests and motion for extraordinary protection)
June 3, 2016	Discovery begins for intervenors by right (7 day discovery turnaround)2
June 8, 2016	Responses to interventions due
TBD	Prehearing conference (deliberate on interventions, waiver request, motion for extraordinary protection, consider completeness of application, adopt procedural schedule)
July 15, 2016	Answer testimony deadline (5 day discovery turnaround)
August 15, 2016	Rebuttal testimony deadline (5 day discovery turnaround)
August 29, 2016	Discovery service cut-off (last response date September 1, 2016)
September 7-9, 2016	Hearing
September 19, 2016	Statements of Position due
November 10, 2016	Commission issues decision

Additional evidence of Xcel's hypocrisy comes out of Lincoln County, one of the counties where Xcel intends to site the project. Before Xcel submitted its official application to the PUC requesting a compressed timeline for intervening parties, it was involved in a questionable, certainly unethical campaign to influence public opinion by pressuring elected officials.

According to Board minutes, Xcel's efforts to convince the Board of Lincoln County Commissioners into submitting a supportive letter to the *Denver Post* in the Board's name (or at least one member) deeply troubled the Board because it could be construed as "prejudicial and inappropriate" given the commissioners' responsibilities as a quasi-judicial entity to make permitting decisions regarding the not-yet-public wind farm in question.

According to minutes from the April 18, 2016 meeting, the Lincoln County Commissioners rehashed the possible conflict of interest and how to rectify damage already done.

The Board discussed a request for a letter of support for Xcel's proposal to build additional renewable energy generation in Eastern Colorado and a letter already submitted to the Denver Post. Mr. Ensign / Country Administrator Gary Ensign] provided a copy of a sample letter that Greg Brophy [working on behalf of Xcel] requested the commissioners send to the Colorado Department of Regulatory Agencies Public Utilities Commission, as well as a copy of his email to Mr. Brophy explaining the Board's hesitation in doing so. The email informed Mr. Brophy that endorsement of any yet unpermitted projects that would require any permitting decision on the part of the commissioners could be perceived as prejudicial and inappropriate. He added that while the

commissioners certainly agreed with several of his points, they were in no position to formally or informally endorse such a letter.⁹⁵

Commissioner Stone left a message for Brophy that while he agreed with "his points and the letter sounded okay" he still needed Board approval. After the board rejected the letter at its April 6, 2016 meeting because they could not appear to support one particular energy company, Commissioner Stone left Brophy another message that the commissioners had declined to get involved.⁹⁶

However, a letter the *Post* claims was written by Commissioner Doug Stone did appear in the paper on April 10, 2016. Mr. Stone did not write the letter. In fact, County Attorney Stan Kimble recommended the Board object to it, while Board Chairman Commissioner Greg King went as far as to suggest sending a follow up letter to the *Denver Post* denying any involvement and "disavowing the letter they claimed was written by Mr. Stone."⁹⁷

Xcel has had time to influence peddle, yet it wants to deny those impacted financially and environmentally any time to research and respond to this massive project. We do appreciate that this is Xcel's first effort to construct its own wind project, but there is a steep learning curve they clearly have not mastered. A learning curve that, in order to be financially, environmentally, and ethically responsible, they must master before proceeding.

Xcel has had time to influence peddle, yet it wants to deny those impacted financially and environmentally any time to research and respond to this massive project.

Summary

Ultimately, there is no sense in any additional wind projects for Colorado unless and until new wind energy actually becomes competitive, meaning there is no need for taxpayer-subsidized payments to Xcel.

Ultimately, there is no sense in any additional wind projects for Colorado unless and until new wind energy actually becomes competitive, meaning there is no need for taxpayer-subsidized payments to Xcel.

Nevertheless, if the PUC ultimately does approve the project, Xcel first needs to answer the many questions raised in this paper concerning financial and environmental impacts on Colorado, or, at the very least, allow time for others to address them. So far, Xcel's less-than-transparent handling of its application and outreach effort does nothing to provide confidence that it respects Colorado's

longstanding tradition of a fair and thorough process before embarking upon such a massive project with enormous economic and environmental impacts. There are so many questions, and the answers must not be left blowing in the wind.

Until Xcel and others can sufficiently address all these issues, the Colorado Public Utilities Commission should not rush its decision on the Rush Creek Wind Project.

Premature approval would be malfeasance.

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ADDITIONAL RESOURCES on this subject can be found at: www.i2i.org/energy.

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Endnotes

- Aldo Svaldi, "Colorado PUC Shoots down Xcel's Community Solar Garden Agreement," Denver Post, May 16, 2016.
- ² Colorado Energy Fact Sheet: "Energy Efficiency & Energy Consumption," accessed April 26, 2016.
- 3 "Xcel Energy Files for \$1 billion Rush Creek Wind Project," Denver Post, May 13, 2016.
- ⁴ U.S. Environmental Protection Agency, "<u>Clean Power Plan</u>," April 16, 2016.
- See Alvin Powell, "Clean Power Plan's Legal Future 'A Mess'," Harvard Gazette, February 26, 2016.
- ⁶ Bruce Finley "Obama Launches Clean Power Plan to Cut Carbon Emissions," Denver Post, August 3, 2015.
- Michael Fumento (2016, April 25). Telephone interview with Mark Stutz.
- As quoted in Bruce Finley, "Colorado Wind Power Rising; 1,880 Turbines and Xcel, Vestas Plan More," April 12, 2016.
- Gathy Proctor, "Xcel, Vestas to Build Colorado's Biggest Wind Farm," Denver Business Journal, Apr 12, 2016.
- "Xcel Energy Files for \$1 billion Rush Creek Wind Project," Denver Post, May 13, 2016.
- For example, "Dallas Heltzell, "<u>Vestas to Build State's Largest Wind Farm for Xcel</u>," *BizWest*, April 12, 2016.
- See Bureau of Labor Statistics, "Occupational Outlook Handbook, Wind Turbine Technicians," and Bureau of Labor Statistics, "Occupational Outlook Handbook, Elevator Installers and Repairers, accessed May 27, 2016.
- Greg Brophy, email exchange between Michael Sandoval, Amy Cooke and Greg Brophy, May 21, 2016, https://www.scribd.com/doc/313927599/Lincoln-County-Wind-Emails; Board of County Commissioners of Lincoln County minutes, May 31, 2016, https://lincolncountyco.us/commissioners/Minutes/2016/05-31-2016.pdf.
- 14 Ibid.
- ¹⁵ Xcel Energy, "Motion to Shorten Notice and Intervention Period," Proceeding No. 16A-0117E May 13, 2016, p. 2. www.xcelenergy. com
- Greenpeace and Global Wind Energy Council, "Global Wind Energy Outlook 2014," October 2014.
- ¹⁷ See Xcelenergy.com, "Wind: The Change Is Blowing In," accessed April 26, 2016.
- As quoted in Nancy Pfotenhauer, "Big Wind's Bogus Subsidies: Giving Tax Credits to the Wind Energy Industry Is a Waste of

- Time and Money," U.S. News & World Report, May 12, 2014, accessed April 26, 2016.
- Department of Energy, Energy Information Administration, "Direct Federal Financial Interventions and Subsidies in Energy in Fiscal Year 2013," March 12, 2015.
- ²⁰ Nuclear Energy Institute, "<u>U.S. Nuclear Generating Statistics</u>," accessed May 27, 2016.
- ²¹ Ibid.
- Molly F. Sherlock, "The Renewable Electricity Production Tax Credit: In Brief," Congressional Research Service, July 14, 2015.
- Patrick Wintour and Adam Vaughan, "<u>Tories to End Onshore Windfarm Subsidies in 2016</u>." The Guardian, June 18, 2015.
- ²⁴ "International Remedies for Foreign Investors in Europe's Renewable Energy Sector," JonesDay, February 2015.
- ²⁵ U.S. Department of Energy, "Federal Incentives for Wind Power," October 2013.
- Randy T. Simmons and Jordan Lofthouse, "What Do We Have to Show for Government Subsidies of Wind Power?" The Hill, February 24, 2015.
- ²⁷ Greenpeace and Global Wind Energy Council, "Global Wind Energy Outlook 2014," October 2014.
- Paul Davidson, "Feds Cut Off Phone Tax after 108 Years," USA Today, May 26, 2006.
- ²⁹ EPA, "Air Quality Trends," accessed May 23, 2016.
- ³⁰ U.S. Energy Information Administration, "<u>U.S. Crude Oil and Natural Gas: Proved Reserves</u>, 2014."
- ³¹ U.S. Energy Information Administration, "<u>Colorado State Profile and Energy Estimates</u>," December 17, 2015.
- ³² Nuclear Energy Institute, "<u>U.S. Nuclear Generating Statistics</u>," April 2016.
- William D. Nordhaus, Stephen A. Merrill, and Paul T. Beaton, editors, "Effects of U.S. Tax Policy on Greenhouse Gas Emissions," National Academy of Sciences, Washington, DC, 2013, p. 68.
- Alex Guillén, "Wind Group Boots Exelon from Board," Politico, September 10, 2012.
- 35 Elliott Negin, "Nuclear Giant Exelon Blasts Wind Energy," RenewableEnergyWorld.com, June 5, 2014.
- As quoted in Cathy Proctor, "<u>Xcel, Vestas, to Build Colorado's</u>
 <u>Largest Wind Farm</u>," *Denver Business Journal*, April 12, 2016.

- ³⁷ Xcel Energy, "Rush Creek Wind and Transmission Project Transmission Line to Deliver 600 Megawatts Of Wind Energy from Eastern Colorado," May 18, 2016.
- Fumento (2016, April 18). Telephone interview with Mark Stutz.
- Jeidos Engineering, LLC, Independent Evaluator's Report, Public Service Company Of Colorado, Rush Creek Wind Project, Final Report, Public Redacted Version, Public Attachment 1 to Application, 2016. Proceeding No. 16A-0117E. www.xcelenergy.com
- ⁴⁰ U.S. Department of Energy, Energy Information Administration, "Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2015," June 2015, p 3.
- Tom Stacy and George Taylor, "<u>The Levelized Cost of Electricity Generation from Existing Sources</u>," June 2015, p. 4.
- U.S. Department of Energy, Energy Information Administration,
 "Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2015," April 4, 2015, p.
 6.
- Aldo Svaldi, "Colorado PUC Shoots down Xcel's Community Solar Garden Agreement," Dewer Post, May 16, 2016.
- ⁴⁴ Xcel Energy, "Our Energy Future," accessed May 24, 2016.
- ⁴⁵ Xcel Energy, "Motion To Shorten Notice and Intervention Period To 14 Days, Adopt Procedural Schedule, Expedite Review of the Application, Requesting Waivers, Requesting Modified Response Time, and Requesting to Revise Caption," Proceeding No. 16a-0117e, May 13, 2016. www.excelenergy.com
- Michael Sandoval, "Energy Policy Center Report: Electricity Rates Skyrocket across all Colorado Sectors," Independence Institute, March 8, 2016.
- ⁴⁷ Residential rate chart courtesy of Michelle Brandt King, PC, partner with Holland and Hart LLP, 555 17th Street, Denver, CO. Published 2010.
- ⁴⁸ Xcel Energy, "2015 Year End Earnings Report," January 28, 2016, p. 4.
- $^{\rm 49}~$ Leidos, Independent Evaluator's Report.
- National Weather Service, "Monarch Pass Wind Gust of 148 Mph Considered Accurate!," accessed May 29, 2016.
- ⁵¹ See, USAirnet, <u>Colorado Wind Speed Map</u>, accessed June 2, 2016.
- ⁵² U.S. Department of Energy, "Energy Efficiency and Renewable Energy, Potential Wind Capacity," accessed June 10, 2016.
- ⁵³ "Xcel Energy files for \$1 billion Rush Creek Wind Project," May 13, 2016.
- Jordan Wirfs-Brock, "Lost in Transmission: How much electricity disappears between a power plant and your plug?" <u>InsideEnergy.</u> <u>org</u>, Nov. 6, 2015.

- Bruce Finley, "Colorado Wind Power Rising; 1,880 Turbines and Xcel, Vestas Plan More." Denver Post, April 12, 2016.
- 56 "Xcel Energy Files for \$1 Billion Rush Creek Wind Project," Denver Post, May 13, 2016.
- U.S. Energy Information Administration, "Frequently Asked Questions: How Much Carbon Dioxide Is Produced Per Kilowatthour When Generating Electricity With Fossil Fuels?," February 29, 2016.
- ⁵⁸ See Electropaedia, "<u>Steam Turbine Electricity Generation Plants</u>," accessed May 23, 2016.
- 59 See, Office of Energy & Renewable Energy, "The Inside of a Wind Turbine," accessed May 25, 2016.
- See Mark Shwartz, "<u>Stanford Scientists Calculate the Energy Required to Store Wind and Solar Power on the Grid,</u>" *Stanford Report*, September 9, 2013.
- Meredith Angwin, "Wind Energy: Curtailment by Any Other Name Would Be Ordinary," The Energy Collective, August 7, 2013.
- 62 U.S. Environmental Protection Agency, "<u>Renewable Energy Fact Sheet: Wind Turbines</u>," August 2013.
- ⁶³ TradeWinds, "<u>Longevity of Turbines</u>," accessed September 10, 2015.
- ⁶⁴ U.S. Environmental Protection Agency, "<u>Renewable Energy Fact</u> Sheet; Wind Turbines," August 2013.
- ⁶⁵ Nuclear Regulatory Commission, "NRC: Oyster Creek Nuclear Generating Station," accessed September 10, 2015.
- 66 Grant Turnbull, "The Final Frontier: Decommissioning USS Enterprise," Navaltechnology.com, 28 August 2013.
- ⁶⁷ Xcel Energy, "Birds and Power Lines," May 18, 2016.
- Keely Chalmers, "<u>Audubon: Windmills 'Giant Cuisinarts for Birds</u>" *National Wind Watch*, May 1, 2014. World Council for Nature (United Kingdom).
- World Council for Nature (United Kingdom), "Wind Farms: A Slaughter Kept Hidden From the Public," June 4, 2015.
- Scott R. Loss, Tom Will, and Peter P. Marra "Estimates Of Bird Collision Mortality at Wind Facilities in the Contiguous United States," Biological Conservation 168, December 2013: 201–209.
- California Energy Commission, "<u>A Roadmap for PIER Research</u> on Avian Collisions with Wind Turbines in California," December 2002.
- ⁷² "Los Parques Eólicos Matan Hasta 18 Milliones de Aves y Murciélogos Cada Año," ABC (Spain), January 12, 2012.

- ⁷³ Scott R. Loss, Tom Will, and Peter P. Marra "<u>Estimates of Bird Collision Mortality at Wind Facilities in the Contiguous United States</u>," *Biological Conservation* 168 (December 2013): 201–209.
- 74 Ibid.
- ⁷⁵ Colorado Parks and Wildlife, "<u>Threatened and Endangered List</u>," accessed April 26, 2016.
- ⁷⁶ Xcel Energy, "Citing and Permitting," May 18, 2016.
- ⁷⁷ U.S. Fish & Wildlife Service, <u>Endangered Species Act, Section 7</u> <u>Consultation</u>, May 16, 2016.
- Teresa Sparks, "<u>TVA and the Snail Darters: A Case Study in Environmental Management</u>," UTC Environmental Science Program, accessed May 25, 2016.
- ⁷⁹ U.S. Fish & Wildlife Service, Oregon Fish & Wildlife Office, Northern Spotted Owl, accessed May 25, 2016.
- ⁸⁰ K. Shawn Smallwood and Brian Karas, <u>"Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California," *Journal of Wildlife Management* 73, no. 7 (September 2009): 1062–1071.</u>
- Meera Subramanian, "The Trouble with Turbines: An Ill Wind," Nature 486, no. 7403 (20 June 2012): 310–311.
- 82 Ibid.
- Thomas J. O'Shea and Micheal A. Bogan, M.A., eds., Monitoring Trends In Bat Populations of The United States and Territories: Problems and Prospects: U.S. Geological Survey, Biological Resources Discipline, Information and Technology Report, USGS/BRD/ITR--2003-0003, 2003.
- ⁸⁴ Justin G. Boyles, Paul M. Cryan, and Gary F. McCracken et al., "<u>Economic Importance of Bats in Agriculture</u>," *Science* 332, No. 6025 (April 1, 2011): 41–42.
- Laura E. Ellison, "Bats and Wind Energy A Literature Synthesis and Annotated Bibliography. Open-File Report 2012–1110, U.S. Geological Survey (2012).
- Mark A. Hayes, "Bats Killed in Large Numbers at United States Wind Energy Facilities," BioScience 63, no. 12 (December 2013): 975-979.
- ⁸⁷ Mark A. Hayes, 975-979.
- Erin F. Baerwald, Genevieve H. D'Amours, and Brandon J. Klug, "Barotrauma Is a Significant Cause of Bat Fatalities at Wind Turbines," Current Biology, 18 No. 16 (August 26, 2008).
- ⁸⁹ Laura E. Ellison, "Bats and Wind Energy A Literature Synthesis and Annotated Bibliography.
- 90 Ibid.
- 91 Colorado Revised Statutes 2013 Title 40 <u>Utilities Public Utilities</u> General and Administrative C.R.S. § 40-6-108(2)(a).

- ⁹² Xcel Energy, "Rush Creek Connect," accessed May 24, 2016.
- ⁹³ Before the Public Utilities Commission, Proceeding No. 16A-0117E, "<u>Staff's Preliminary Response to Public Service's</u> <u>Motion Filed on May 13, 2016</u>," from Attorney General Cynthia Coffman
- "Verified Application of Public Service Company for Approval of the 600 MW Rush Creek Wind Project," May 13, 2016, pg. 17.
- "Minutes from Lincoln County Board of Commissioners," April 18, 2016, pp. 4–5.
- 96 Ibid.
- 97 Ibid.

