

**2017 HOUSE INDUSTRY, BUSINESS AND LABOR**

**HB 1378**

# 2017 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee  
Peace Garden Room, State Capitol

HB 1378  
1/23/2017  
27249

- Subcommittee  
 Conference Committee

*Ellen LeTang*

## Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

## Minutes:

Attachment 1, 2, 3, 4

**Chairman Keiser:** Opens the hearing of HB 1378.

**Alison Grotberg~Wimbledon, ND:** Attachment 1.

9:00

**Rep Lefor:** You said the new systems are being required, are there any in effect now in the state of ND?

**Grotberg:** There is one out in Stark County, I believe. The PSC could speak to this.

**Rep Laning:** Do you know the cost per tower?

**Grotberg:** In ND it would cost from \$500,000 to \$800,000 to install a system. The radar range is 18 miles & has a 360-degree radius.

**Julie Fedoracak~ND PSC:** Give a perspective & I do support. The technology has been approved by the FFA & we have been requiring it on all new wind generation facilities for the last 2 years. There are 4 new facilities that will be employing this technology but it's not active on those today.

I don't have any information on the cost. We came up with an agreement that the company was given until December 2018 to install the new lights for this new wind farm, pending approval from the FFA. It is great technology. We have about 3,000 megawatts of wind generation operating in ND. About 600 of that will have this technology.

Can we do this through the rules making process, we think we can, but it would be retroactive rule making. That is something that any of us really love, so we haven't tackled how to get

out the retrofitting of the 2,500 megawatts that is existing. We put that your lap to talk about with industry about & I don't know what you will hear about cost or technical implications.

**Rep Laning:** Does it shut off when the plane passes?

**Fedorchak:** I do believe so.

**Rep Ruby:** Do you anticipate that something this passes that you would be getting some requests for rate increases.

**Fedorchak:** I don't anticipate that but it's potential, for a rate increase.

**Rep Kasper:** Do you have any idea; the amount of revenue one wind mill brings.

**Fedorchak:** We don't get into the revenue at all.

**Chairman Keiser:** This bill has an implementation date of Dec 2018, is that reasonable?

**Fedorchak:** I can't speak to the retrofit, that's why I came down here to hear about that.

**Laurie Christensen~Courtenay, ND:** Attachment 2.

**22:30**

**James Schrader~Ariska, ND:** We moved out of town to have the peace & quiet in the country. Within a year we had wind towers on the hill. I'm in favor of this bill. We would like our nice sky back at night.

**Rep Kasper:** How about the noise pollution?

**Schrader:** When the winds are down, we heard it, not when the wind is up. The noise is too loud.

**Chairman Keiser:** Anyone else here to testify in support, opposition?

**Carlee McLeod~President of the Utility Shareholders of ND:** Attachment 3.

**Rep Louser:** Does this affect the migratory birds, are birds attracted to these lights?

**McLeod:** I can't answer that question.

**Rep Ruby:** Are you opposing that when they go into the sightings the PSC technology?

**McLeod:** I just say that; I don't know of any company that has a project that required of yet. I do think that when they go in, they will make a case for the cost & let the regulators decide if that's appropriate.

**Rep Ruby:** Who is making sure that the lights are working?

**McLeod:** Lights are not required on every tower. As far as maintenance, the person who is in charge of that project.

**Rep Ruby:** If the cost is high, do you have a figure of the cost raise per house per year?

**McLeod:** I don't have that figure.

**Rep Ruby:** You were talking about going in for a rate raise. There would have to be some significant increase to make that process work.

**McLeod:** When you go in for a rate case, there are all sorts of information that's confidential, I don't feel confident to share that information.

**Rep Kasper:** Do you have any information of the cost benefit of wind power versus coal fired power.

**McLeod:** The wind generation came in as the lowest. It's hard to say.

**Chairman Keiser:** Let's cut to the chase, committee is asking is, what is the financial impact to the consumer if we were to implement this? That's the bottom line.

**Rep Dobervich:** If we start compensating or making arrangement for one energy industry, are we going down the road of others, like an oil Derek? What is the true level of the noise & light pollution versus the inconvenience?

**McLeod:** I'm not aware of any comprehensive research that's been done.

**Dale Niezwaag ~Basin Electric Power Cooperative:** We are opposed to the bill as written. There is no technology install in the state of ND. We haven't had the chance to assess & evaluate the technology. We are concerned about the timeline that is involved of this bill & I just heard about this technology just this last summer.

Most of our wind farms/energy is purchase/power contracts where other developers build the wind farms but we do own.

We have been scrambling to get information, at this point we are only aware of 1 or 2 manufacturers that make this kind of equipment. So, we need more time to put in the retro fit lights. When want to put the best equipment in, then in another year or two, find out it's not very good & have to go back do it again.

A recommendation, if I could make one would be, if they want to require that this be all installations, that great. As far as retrofit, we would like to see that kicked out at least a year or two. Give a time to see if it's working.

**Rep Ruby:** The current lighting on now, what is the time frame for updated lighting?

**Dale:** I'm not aware of any time limits to update.

**Chairman Keiser:** I believe that these wind farm are going to a significant problem in the future. If I was an owner, I would be living elsewhere. This case, the neighbor, they have to live with it. They need some kind of compensation in putting up with the annoyances.

**Niezwaag:** The newest wind tower leases, there are 3 different type of lease payments, a lease payment, infrastructure & footprint. The question comes up at what point does your right to do what you want with your property infringed on someone else's visual ability an area they want to see. There are no easy answers.

**Chairman Keiser:** It's easy, about 12% is green, it's going to continue, this is a significant problem & these people live with it every day. We would like to find a solution. What is the cost impact figures to the consumers?

**Niezwaag:** The impact to the membership would be fairly small; we are concerned about the newest technology.

**Robert Harms~Representing Tradewind Energy, Inc:** Attachment 4. Testimony but was unable to attend.

**Chairman Keiser:** Closes the hearing.

# 2017 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee  
Peace Garden Room, State Capitol

HB 1378  
1/25/2017  
27410

- Subcommittee  
 Conference Committee

Committee Clerk Signature

*Solen L. Lian*

## Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

## Minutes:

**Chairman Keiser:** Informational discussion of HB 1378.

**John Olson~Represents NextEra Energy:** Introduces John DiDonato.

**John DiDonato~NextEra Energy Resources:** Briefly describes his company. In 2016 there were 3 projects that were permitted through the PSC, Brady 1, Brady 2 & Oliver 3-Mercer Co. We did agree through the hearing with the PSC, to install aircraft detection lighting systems. It's a radar system that the FAA approved for use in November of 2015.

The problem is the retroactivity of the bill. We have approximately 900 megawatts of wind projects that we installed between 2003 & 2010. We have some preliminary numbers & it will cost approximately 16 million dollars to retrofit those projects with the same types of radar. We believe some of the projects, because of some of the contract that we have with utilities who have retail customers in the state, is our customer. We do not have the ability to go back & ask for a price increase. Some of our projects will become bankrupt.

Because we agreed on new projects & believe this will become a standard, we are not commenting on the prospective nature of installing these new projects. We are not in favor of the retroactive & we ask that you reconsider the retroactivity of installing these projects, not only for us but for the whole industry's sake.

**Rep Kasper:** You have invested about 2 billion dollars in ND in the 3 wind farms?

**DiDonato:** I did say 2 billion dollars, not in those 3 wind farms. It over a dozen wind farms from 2003-2016.

**Rep Kasper:** Total investment is 2 billion invested in ND

**DiDonato:** Yes.

**Rep Kasper:** Did I also hear that to retrofit all the old towers would be 16 million?

**DiDonato:** Approximately 16 million & we are still working on those numbers.

**Rep Kasper:** You indicated that the 16 million could bankrupt, as a company that has invested 2 billion in ND & 16-18 billion in other places of the country, are you so thinly capitalized.

**DiDonato:** Each of those projects are separate companies. I'm talking about bankrupting the individual products that are operating with an individual company.

**Rep Ruby:** It applies to all of the wind towers, if we change that portion, how many would that remove from your number of wind farms.

**DiDonato:** That would be about 2 million dollars. It's a bit of analysis because it's ongoing.

**Rep Louser:** The retrofitting, does the old light have to come off?

**DiDonato:** Yes, they have to come off.

**Rep Dobervich:** If there how often would the lights need to be replaced. What is the lifespan of the old lights?

**DiDonato:** They last 3 to 5 years. It's \$100 for a light bulb & \$4,000 for the system.

**Rep Beadle:** Are you seeing companies coming in & put in one radar system for the farm as a whole instead of each individual tower?

**DiDonato:** Yes, for a different purpose, for example the California Condor, the computer memorizes its patterns.

**Chairman Keiser:** You can't pass the cost on, there is nothing in your contract, that if the state changes its law to offset the expense, is that correct?

**DiDonato:** Yes, that's correct, we take the risk.

**Chairman Keiser:** Further questions from the committee?

# 2017 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee  
Peace Garden Room, State Capitol

HB 1378  
2/1/2017  
27713

- Subcommittee  
 Conference Committee

Committee Clerk Signature

*Ellen Letang*

## Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

## Minutes:

Attachment 1, 2, 3, 4, 5, 6, 7, 8

**Chairman Keiser:** Continues the hearing of HB 1378.

**Rep Daniel Johnston~District 24:** Testimony 1.

4:00

**Rep Lefor:** You put December 31, 2018, what was the reasoning for that?

**Johnston:** It's the timeline that the PSC gave us.

**Chairman Keiser:** Are planes required to have equipment to interface with the radar system & what about drones?

**Rep Johnston:** I don't have the answer to that.

**Rep Ruby:** We had testimony that some towers that are not quite high enough to require the lighting? Would it be preferably to word the language to be required to those towers that are required to have the lighting system currently?

**Rep Johnston:** That would be an amendment that I would support.

**Tom Reichert~Citizen from Stark County:** Attachment 2 & 3. Attachment 3 was submitted by Tom Reichert for Farren & Autumn Richard.

14:10

**Rep Bosch:** When you were talking to the DETECT Corp, did they offer any cost estimates to retrofit?

**Reichert:** In perfect condition, \$300,000 per wind farm, older wind farm, a little more?

**Rep Bosch:** Per wind farm?

**Reichert:** Yes.

**Rep Lefor:** What would it cost for the older farm?

**Reichert:** He really didn't say.

**Chairman Keiser:** Do you have hard data of the impact of your farm?

**Reichert:** It's subjective, it's hard. Did give an example of a neighbor, tried to sell his farm, but the buyers didn't want it because it was in the middle of the wind farm.

**Carla Arthaud~Citizen from Western ND:** Attachment 4.

**21:15**

**Chairman Keiser:** Is there anyone else here to testify in support, opposition, neutral?

**Julie Fedoracheck~Member of the PSC:**

**Chairman Keiser:** When you had your deliberation, the system will identify aircraft without special equipment for drones?

**Fedoracheck:** That's my understanding & that was part of the FFA vetting.

**Chairman Keiser:** Do the federal rules supersede the states rules or do we have any authority to the number of lights on a wind farm? Can we do the perimeter, reduce the lights, for the older wind farms?

**Fedoracheck:** From a legal aspect, I can't speak with any authority. We have the FFA as the experts to protect the air.

**Rep Lefor:** You said that all new farms are required to have this, does that include Brady 1 & 2?

**Fedoracheck:** It does, however, because it was evolving as we were permitting, we allowed the company until December of 2018 & to implement that technology & have it activate.

**Chairman Keiser:** New term, a power purchase agreement, they said that once you sign the power purchase agreement, their rates are locked in. How long do they last & can they get back in & renegotiate because the state implemented a change in the law?

**Fedoracheck:** Is not a significant cost over the lifetime of the project, in my opinion. There are private developers, they are locked in for 20 years, but there are different contracts.

**Rep Kasper:** The cost to the system of wind energy compared to the coal & natural gas, do they give you a cost per kilowatt hour that they think that will be required?

**Fedoracheck:** Yes, they do that. The production price credits are why wind energy is the cheapest. They both have pro's & con's.

**Rep Kasper:** The production tax credit goes away, what would happen?

**Fedoracheck:** The production tax credits for the new facilitates that remains to be seen. The wind energy seems to think that they now could be stainable without those tax credits. I really don't have the information.

**Rep Kasper:** ND statute says that you are required to use the lowest cost of energy. The human factors we have heard from citizens, about what it's like to live near or close to wind farm, was not taken into consideration whatsoever. It's just the dollar bottom line? If we eliminated the requirement that you accept the lowest cost source, what would be the implications to our power system in ND?

**Fedoracheck:** The only time that the low cost comes into play is only when used for ND users, not out of state. The citing process which is separate from the cost allocations. We need to think about all the issues that we care about in citing & require the companies to address that when they come in to permit to construct.

**Rep Kasper:** On a citing for PSC, are you able to take in the human factor the effect on people?

**Fedoracheck:** That is the challenge of citing. Our goal is minimal impact on everything.

**Rep Lefor:** The process, if the county approves a farm, does the PSC have the right to reject that or is it the counties decision?

**Fedoracheck:** The PSC has the right to reject a wind farm if the application doesn't meet the requirements laid out?

**Rep Lefor:** Even if the county approved.

**Fedoracheck:** Yes.

**38:00 – 39:30** Students from Hazen who were observing.

**Chairman Keiser:** Closes the hearing. There are 3 different sets of amendments we will discuss.

**Lea Dorner~Citizen:** Attachment 5. Was unable to attend to testify but submitted testimony.

**Chairman Keiser:** Attachment 6. Technical amendment to change "lighting detection" with "detection lighting".

**Rep Ruby:** Moves the amendment.

**Rep Lefor:** Second.

**Voice vote – Motion carried.**

**Chairman Keiser:** There are 2 additional amendments. These are policy amendment for the committee to considered. The long one was prepared by John Olson to address some of the industries concerns.

**John Olson~Represent Otter Tail Power Comp & NextEra Energy:** Attachment 7. Goes over the amendment he proposed.

**Rep Kasper:** Page 1, line 7, that 4 years from now, why so long?

**Olson:** New technology coming in.

**Rep Kasper:** That begs the argument, that there is always newer technology coming, so we can move it back again?

**Olson:** We are not asking beyond 2021, we don't think it's too long.

**Rep C Johnson:** The amendment, it references federal aviation regulations, are those regulations going to be subject to change or should we put a date in there?

**Olson:** I don't think you can. Any federal intervention into the regulation of wind industries that affect aircraft & so forth, they can overrule anything the state did.

**Chairman Keiser:** Attachment 8. It's a hog house amendment & doesn't address the immediate problem but the long term issue of interfering & contracts that had been negotiated & signed.

**Rep Kasper:** If this were adopted, all the old facilities would not have to retrofit at all?

**Chairman Keiser:** Unless they replace the system if it wore out.

**Rep Ruby:** It sets the date after July 1, has there been any permitted within the last part of last year & first part of this year that will be permitted before them & would not have to follow this?

**Chairman Keiser:** Testimony was, currently the PSC is requiring on anything that has been permitted recently. So we can change that date if the committee so wished. July is moving ahead of August 1 is the only thing this did.

**Rep Laning:** Lock the price in for 20 years & they don't have a way of going back & re-fix the price. There would be a significant cost in the future.

**Rep Kasper:** If a company is going to lock in a 20 year, means to me, that it's sustainable.

**Rep Ruby:** Technical correct, if we are going to take up the amendment on John's amendment, we have to remove the wind out of this or take it out of the bill.

**Rep Lefor:** I'm going to oppose either one of these because I don't think it goes far enough. I certainly be amendable to adding a year, going to 2019 as far as an amendment. From what we have heard on how it's affecting people's lives, I'm not concerned about profitability, I'm concerned about the individuals that live around them.

To put it into a study is a delay, we need to be firm, send a message, that if you are going to do this, you have to take care of your neighbors as well. I would further amend to change the date to December 31, 2019.

**Rep Lefor:** Moves to further amend.

**Rep Becker:** Second.

**Voice vote – Motions carried.**

**Chairman Keiser:** What are the wishes of the committee?

**Rep Becker:** Moves a Do Pass as Amended

**Rep Lefor:** Second.

**Chairman Keiser:** Further discussion?

**Roll call for a Do Pass as Amended on HB 1378 with 14 yes, 0 no, 0 absent & Rep Dobervich is the carrier.**

**PROPOSED AMENDMENT TO HOUSE BILL NO. 1378**

Page 1, line 2, replace "lighting detection" with "detection lighting"

Page 1, line 6, replace "lighting detection" with "detection lighting"

Page 1, line 9, replace "lighting detection" with "detection lighting"

Page 1, line 10, replace "lighting detection" with "detection lighting"

Renumber accordingly

17.0770.03001  
Title.04000

2/1/17 DP  
Adopted by the Industry, Business and Labor  
Committee

February 1, 2017

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1378

Page 1, line 2, remove "lighting"

Page 1, line 2, after "detection" insert "lighting"

Page 1, line 6, remove "**lighting**"

Page 1, line 6, after "**detection**" insert "**lighting**"

Page 1, line 7, replace "2018" with "2019"

Page 1, line 9, remove "lighting"

Page 1, line 9, after "detection" insert "lighting"

Page 1, line 10, remove "lighting"

Page 1, line 10, after "detection" insert "lighting"

Renumber accordingly

Date: Feb 1, 2017

Roll Call Vote #: 1

2017 HOUSE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. HB 1378

House \_\_\_\_\_ Industry, Business and Labor \_\_\_\_\_ Committee

Subcommittee

Amendment LC# or Description: \_\_\_\_\_

Recommendation

- Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar

Other Actions  Reconsider \_\_\_\_\_

Motion Made By Rep Ruby    Seconded By Rep Lefor

| Representatives     | Yes | No | Representatives | Yes | No |
|---------------------|-----|----|-----------------|-----|----|
| Chairman Keiser     |     |    | Rep Laning      |     |    |
| Vice Chairman Sukut |     |    | Rep Lefor       |     |    |
| Rep Beadle          |     |    | Rep Louser      |     |    |
| Rep R Becker        |     |    | Rep O'Brien     |     |    |
| Rep Bosch           |     |    | Rep Ruby        |     |    |
| Rep C Johnson       |     |    | Rep Boschee     |     |    |
| Rep Kasper          |     |    | Rep Dobervich   |     |    |
|                     |     |    |                 |     |    |
|                     |     |    |                 |     |    |
|                     |     |    |                 |     |    |

Total (Yes) \_\_\_\_\_ No \_\_\_\_\_

Absent \_\_\_\_\_

Floor Assignment \_\_\_\_\_ Voice vote ~ Motion carried

*Technical - change "lighting detection" with "detection lighting."*

Date: Feb 1, 2017

Roll Call Vote #: 2

2017 HOUSE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. HB 1378

House \_\_\_\_\_ Industry, Business and Labor \_\_\_\_\_ Committee

Subcommittee

Amendment LC# or Description: 17.0770.03001

Recommendation

- Adopt Amendment
- Do Pass     Do Not Pass     Without Committee Recommendation
- As Amended     Rerefer to Appropriations
- Place on Consent Calendar

Other Actions

- Reconsider
- further amend to Dec 31, 2019

Motion Made By Rep Lefor                      Seconded By Rep Becker

| Representatives     | Yes | No | Representatives | Yes | No |
|---------------------|-----|----|-----------------|-----|----|
| Chairman Keiser     |     |    | Rep Laning      |     |    |
| Vice Chairman Sukut |     |    | Rep Lefor       |     |    |
| Rep Beadle          |     |    | Rep Louser      |     |    |
| Rep R Becker        |     |    | Rep O'Brien     |     |    |
| Rep Bosch           |     |    | Rep Ruby        |     |    |
| Rep C Johnson       |     |    | Rep Boschee     |     |    |
| Rep Kasper          |     |    | Rep Dobervich   |     |    |
|                     |     |    |                 |     |    |
|                     |     |    |                 |     |    |
|                     |     |    |                 |     |    |

Total (Yes) \_\_\_\_\_ No \_\_\_\_\_

Absent \_\_\_\_\_

Floor Assignment \_\_\_\_\_ Voice vote ~ Motion carried

Date: Feb 1, 2017

Roll Call Vote #: 3

2017 HOUSE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. HB 1378

House \_\_\_\_\_ Industry, Business and Labor \_\_\_\_\_ Committee

Subcommittee

Amendment LC# or Description: \_\_\_\_\_

Recommendation

- Adopt Amendment
- Do Pass     Do Not Pass     Without Committee Recommendation
- As Amended     Rerefer to Appropriations
- Place on Consent Calendar

Other Actions     Reconsider     \_\_\_\_\_

Motion Made By Rep Becker

Seconded By Rep Lefor

| Representatives     | Yes | No | Representatives | Yes | No |
|---------------------|-----|----|-----------------|-----|----|
| Chairman Keiser     | X   |    | Rep Laning      | X   |    |
| Vice Chairman Sukut | X   |    | Rep Lefor       | X   |    |
| Rep Beadle          | X   |    | Rep Louser      | X   |    |
| Rep R Becker        | X   |    | Rep O'Brien     | X   |    |
| Rep Bosch           | X   |    | Rep Ruby        | X   |    |
| Rep C Johnson       | X   |    | Rep Boschee     | X   |    |
| Rep Kasper          | X   |    | Rep Dobervich   | X   |    |
|                     |     |    |                 |     |    |
|                     |     |    |                 |     |    |
|                     |     |    |                 |     |    |

Total (Yes) 14 No 0

Absent 0

Floor Assignment Rep Dobervich

REPORT OF STANDING COMMITTEE

HB 1378: Industry, Business and Labor Committee (Rep. Keiser, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (14 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). HB 1378 was placed on the Sixth order on the calendar.

Page 1, line 2, remove "lighting"

Page 1, line 2, after "detection" insert "lighting"

Page 1, line 6, remove "lighting"

Page 1, line 6, after "detection" insert "lighting"

Page 1, line 7, replace "2018" with "2019"

Page 1, line 9, remove "lighting"

Page 1, line 9, after "detection" insert "lighting"

Page 1, line 10, remove "lighting"

Page 1, line 10, after "detection" insert "lighting"

Renumber accordingly

**2017 SENATE ENERGY AND NATURAL RESOURCES**

**HB 1378**

# 2017 SENATE STANDING COMMITTEE MINUTES

## Energy and Natural Resources Committee Fort Lincoln Room, State Capitol

HB 1378  
3/2/2017  
Job #28637

- Subcommittee  
 Conference Committee

Committee Clerk Signature



**Explanation or reason for introduction of bill/resolution: Relating to aircraft detection lighting systems on wind generators.**

**Minutes:**

Attch#1=Rep. Johnston; Attch#2=Jean Schafer; Attch#3 and #4=John Olson; Attch#5=Brian Duncan; Attch#6=David Sheppard; Attch#7=e-mail Alison Grotberg

**Chairwoman Unruh:** Let's open HB 1378.

**Rep. Daniel Johnston, Dist. 24Kathryn, ND:** I am here in support of HB 1378. (see Attch#1)

**Rep. Mike Lefor, Dist 37, Dickinson, ND:** I am here in support. When we hear this in the House, we extended the time frame to December to Dec 31, 2018. Lives have been changed in our part of the state by wind farms. We have the ability to replace the red lights with the aircraft lighting system. We are all for energy development. We want to have peace in our lives. Please Do Pass. Any questions?

**Sen. Armstrong:** This becomes a retroactive application to existing wind farms as well, right?

**Rep. Lefor:** Yes.

**Sen. Armstrong:** Was there any discussing when the amendments on the cost to do this?

**Rep. Lefor:** Yes, there were examples. I believe some in the audience can answer that question.

**Sen. Oban:** Did you have complaints when oil development came in? Was flaring an issue?

**Rep. Lefor:** No, not really. Stark County does not have that much oil development.

**Julie Fedorchak, PSC Commissioner:** In favor on the House side. This is something the commission has been working itself. We have not gotten any pushback from project developers in the last four projects we approved on this new system, pending FFA approval. This is a step in the right direction. People do not like the blinking red lights all night long. We are giving preference to those using ADL systems, but we are changing the wording to light mitigating systems. More general term. ADL is just one technology, and one of the first. It may not be the best. Let's not put in law that language. Needs to be more general. If you want to provide flexibility on timing, you could require the PSC to approve any extensions.

This technology is new, so we don't have any experience with it yet. What is the FAA going to do, we don't know yet. The industry may need a waiver on the time frames.

**Sen. Armstrong:** Is there any incentive that can we give them to switch over?

**Julie:** Not a bad idea. Have not thought about that before. We have no charges to fall back on.

**Sen. Roers:** Has anyone got an idea of cost? How much would this cost?

**Julie:** Varies depending on technology. LIDS is less expensive. I have heard from \$200,000 to \$10M per project. The investor owned utilities view this as a onetime cost and good technology.

**Sen. Roers:** What aircraft components are needed to make it work?

**Julie:** The system is activated by radar on the ground. It detects when there is an aircraft within a certain distance of the facility and it triggers the lights to go on. They can falsely trigger by a flock of geese, so it is not 100%. (16.32)

**Sen. Roers:** I am glad it is ground up not starting at the airplane going down.

**Vice Chair Kreun:** You indicated that there may be flexibility on the deadline, would that be part of it. As some tower are getting older, they need to be refurbished. Would that be part of the flexibility?

**Julie:** We would look at whatever you want us to look at. (17.44) I was looking more at regulatory approval that they have to go through and FAA. That is a bigger hurdle.

**Chairwoman Unruh:** Can you walk us through the typical siting approval at PSC level and the timing of all that?

**Julie:** Generally, we receive an application and staff looks at it. They determine if all the requirement have been provided. We determine it complete and then set a hearing date. It takes about 2-3 months. We wait for locals to take their action first then we come in to have a public hearing.

**Chairwoman Unruh:** Any more in support? Any testimony in opposition?

**Jean Schafer, Basin Electric:** We are opposed to this bill as written. (see Attch#2) (22.40)

**Chairwoman Unruh:** How long does it take to get FAA approval when you build a farm?

**Amanda Wagner:** Project manager for Prairie Winds I and II. We first had to go through the air force. That took over a year. It was another 3 months to hear back from the FAA.

**Sen. Armstrong:** Have the FAA approved any of these ADLS or similar systems?

**Jean:** Other states, I think I heard on the ADLS, there was one approved.

**John Olson, NextEra Energy:** We are in opposition. I am handing out proposed amendments. (see Attch #3 and #4). These amendments are a work of all the wind companies that have been at the table on these issues. We believe this technology can go forward. Went through the amendments. (33.00-34.00)

**Brian Duncan, NextEra Senior Director, Business Manager:** (see Attch #5) We figure it would cost 1/2Million to 1 1/2 Million per facility. Depends on how many radar units we would have to buy. For the small wind farms, this cost is enormous. The cost falls on the individual project. (41.41)

**Sen. Armstrong:** If the FAA does not approve it, we will not be doing anything.

Brian: That is true.

**David Sheppard, Drake Lighting Inc., Kentucky.** We specialize in lights on towers. (see Attch#6) (42.15-50.08) We have been able to decrease the vertical light and help bring the light away from the neighborhood. It has taken an agency that does not want to change, and

getting them to make big changes. The lights are in a standby mode. We have had a lot of success in Canada. The communities love it.

**Sen. Cook:** Where was the first installation in US?

**David:** Arrutt, Colorado. We have two in Canada, and a 3<sup>rd</sup> was just approved on a new wind farm in Canada.

**Sen. Cook:** Who do you sell to?

**David:** I am on lots of doorsteps. You show your technology to FAA office, if you can get in. They say, sure, go find someone who will pay \$200,000 to test it out. I have been doing that for three years now.

**Mark Koller**, New England, ND: I am here as a landowner. I am here against this bill. (53.40) I am part of the Brady II wind farm. We decided to sign up for the wind farm. I went to all the hearing and got a good education, and it was a good experience. NextEra was very good to us and took care of the land and the neighbors. They reclaimed the land and we are very pleased about the whole process. There are blinking lights. At first we noticed them, but now we do not notice them anymore. We can get along with our neighbors. We adapt.

**Sen. Roers:** Why were you excited about the wind farm?

**Mark:** Money and the economy helped the whole area

**Eugene Roller**, New England, ND: I live in the middle of the Brady I project. I have had lights blinking before the wind farms. Cell towers are blinking all the time, too. I don't notice the blinking lights anymore. There is a little sound, but not much. The traffic noise is worse from the highway. I only have 480 acres. I have one wind tower. But I will never have to pay for another electric bill. It could be 60 years that we get this income. I would not sell my land now. I feel the wind tower increased the value of my land. (1.04.40)

**Chairwoman Unruh:** Any more in opposed? Any agencies? Seeing none, hearing is closed.

e-mail testimony from Alison Grotberg-(See Attch#7)

# 2017 SENATE STANDING COMMITTEE MINUTES

## Energy and Natural Resources Committee Fort Lincoln Room, State Capitol

HB 1378  
3/23/2017  
Job #29594

- Subcommittee  
 Conference Committee

Committee Clerk Signature

*Pam Dever*

**Explanation or reason for introduction of bill/resolution: Relating to aircraft detection lighting systems on wind generators.**

**Minutes:**

Attch#1, #2= Sen. Roers;

**Chairwoman Unruh:** Look at HB 1378.

**Sen. Roers:** I do have amendments to pass out and the Xmas Tree. (see Attch#1 and Attch#2). 17.0770.04001. This amendment is designed to introduce a light mitigation technology system in all future wind tower projects. The lights would automatically dim to a very reduced lighting capacity when there is no aviation activity in the area and vicinity of the wind towers. Section 2, asks that the PSC study and report back the legislative management in the next biennium on the feasibility of requiring this light technology to be used on existing facilities. That is what the amendment does. (2.44)

**Chairwoman Unruh:** I did see these before committee meeting. Are the dates in lines 9 – 11 appropriate, and are the certificate of site compatibility is the right rigger for us to be using? The section of study, I think it is more appropriate to direct them to create rule regarding this. Not just have a study. The end result of a study would be rules anyway. (3.45) Those are my thought with the amendments. I can work with you. Any more thoughts?

**Sen. Roers:** Yes, we will.

**Chairwoman Unruh:** Any more discussion? We will work on those.

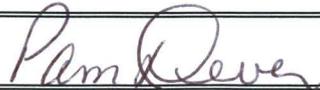
# 2017 SENATE STANDING COMMITTEE MINUTES

## Energy and Natural Resources Committee Fort Lincoln Room, State Capitol

HB 1378  
3/30/2017  
Job #29829

- Subcommittee  
 Conference Committee

Committee Clerk Signature



**Explanation or reason for introduction of bill/resolution: Relating to aircraft detection lighting systems on wind generators.**

**Minutes:**

Committee work 1<sup>st</sup> mtg

**Chairwoman Unruh:** Look at H 1378. Sen. Roers, are you ready?

**Sen. Roers:** I hope to have this by this afternoon.

**Chairwoman Unruh:** We can't meet this afternoon. We will see if you can hurry up LC to get this done. Can we discuss what you are working on?

**Sen. Roers:** The Commission has given us a written description of how they would like to see the policy. They want to go back to June 5, 2016. Everything that was permitted after that date, already meets the new standards of light mitigations. There would be no need for that to be incorporated into a study. Everything that was done prior that date, they want to create a study for how and when a conversion would be done based on economics and feasibility, and FAA regulations. The language is being worked down to a couple of words changes right now. All are in agreement in how the amendment is written right now. Sen. Cook has looked it over with me.

**Sen. Cook:** I did see it. The study would draft administrative rules, to clarify.

**Chairwoman Unruh:** I did get to see the amendment. There was a prevision to report back to the legislature. Is that necessary?

**Sen. Cook:** I suggested that. I thought it would be nice to show progress and nice if they have a goal out there. Or it could take forever to write administrative rules. (3.00)

**Chairwoman Unruh:** I agree with the goal and date and that someone has expectations by a certain date is good idea.

**Sen. Armstrong:** Maybe just tell them they have to have their rules submitted by X date. The admin rules committee is made up of all legislators.

**Chairwoman Unruh:** I will task Sen. Cook and Sen. Roers to get this done in 1 ½ hrs. Done.

# 2017 SENATE STANDING COMMITTEE MINUTES

## Energy and Natural Resources Committee Fort Lincoln Room, State Capitol

HB 1378  
3/30/2017  
Job #29845

- Subcommittee  
 Conference Committee

Committee Clerk Signature



### Explanation or reason for introduction of bill/resolution:

**Minutes:**

Committee work; Attch#1=Sen. Roers;

**Chairwoman Unruh:** We finally have the amendment.

**Sen. Roers:** We have 17.0770.04002 that was just drafted from LC. (see Attch#1) I have talked to all people involved and they say this is OK. It adds some responsibility to the Commission. We changed some date. Explained the amendment to committee.

**Sen. Cook:** Reading this, is there a mistake in removing line 7 and line 8?

**Sen. Armstrong:** It is OK when you look at the original bill.

**Sen. Cook:** I see nods in the audience, so must be ok.

**Chairwoman Unruh:** We have amendment 17.0770.04002 before us.

**Sen. Armstrong:** I move the amendments.

**Sen. Roers:** I second.

**Chairwoman Unruh:** Any discussion? Call the roll. YES 7 NO 0 -0- absent  
Amendment passed.

**Chairwoman Unruh:** We have engrossed HB 1378 as amended before us.

**Sen. Armstrong:** I move Do Pass as amended.

**Sen. Roers:** I second.

**Chairwoman Unruh:** Any discussion? Call the roll. YES 7 NO 0 -0- absent

**HB 1378 Passed as amended.**

**Sen. Roers** will carry the bill.

March 30, 2017

CR  
3/30/17

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378

Page 1, line 2, replace "aircraft detection lighting systems on wind generators" with "light-mitigating technology systems on wind energy conversion facilities"

Page 1, line 6, replace "**Aircraft detection lighting**" with "**Light-mitigating technology**"

Page 1, after line 6 insert:

"1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light-mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].

2."

Page 1, line 7, remove "generator, designed for or capable of wind energy"

Page 1, remove line 8

Page 1, line 9, replace "aircraft detection lighting system in accordance" with "energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light-mitigating technology system that complies"

Page 1, line 9, remove "The"

Page 1, remove lines 10 and 11

Page 1, line 12, replace "standards, and lighting system requirements." with:

"3. The commission shall require the installation of light-mitigating technology systems that comply with rules adopted by the commission as soon as technically feasible and if economically feasible for wind energy conversion facilities for which a certificate of site compatibility was issued before June 5, 2016.

4."

Page 1, line 12, replace "cost" with "costs"

Page 1, line 12, after "with" insert "the"

Page 1, line 13, replace "these systems" with "light-mitigating technology systems"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Renumber accordingly

3/30/17

Date:   
 Roll Call Vote #: 1

2017 SENATE STANDING COMMITTEE  
ROLL CALL VOTES  
BILL/RESOLUTION NO. *HB 1378*  
*engrossed*

Senate Energy and Natural Resources Committee

Subcommittee

Amendment LC# or Description: 17.0770.04002

Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
Other Actions:     Reconsider     \_\_\_\_\_

Motion Made By Sen. Armstrong Seconded By Sen. Roers

| Senators               | Yes | No | Senators       | Yes | No |
|------------------------|-----|----|----------------|-----|----|
| Chairman Jessica Unruh | /   |    | Sen. Erin Oban | /   |    |
| Vice Chair Curt Kreun  | /   |    |                |     |    |
| Sen. Kelly Armstrong   | /   |    |                |     |    |
| Sen. Dwight Cook       | /   |    |                |     |    |
| Sen. Jim Roers         | /   |    |                |     |    |
| Sen. Don Schaible      | /   |    |                |     |    |
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Total (Yes) 7 No 0

Absent -0-

Floor Assignment \_\_\_\_\_

If the vote is on an amendment, briefly indicate intent:

*Amend.  
Passed*

Date: 3/30/17  
 Roll Call Vote #: 2

**2017 SENATE STANDING COMMITTEE**  
**ROLL CALL VOTES**  
**BILL/RESOLUTION NO. HB 1378**  
engrossed

Senate Energy and Natural Resources Committee

Subcommittee

Amendment LC# or Description: 17.0770.04002

Recommendation:  Adopt Amendment  
 Do Pass     Do Not Pass     Without Committee Recommendation  
 As Amended     Rerefer to Appropriations  
 Place on Consent Calendar  
 Other Actions:  Reconsider     \_\_\_\_\_

Motion Made By Sen. Armstrong    Seconded By Sen. Roers

| Senators               | Yes | No | Senators       | Yes | No |
|------------------------|-----|----|----------------|-----|----|
| Chairman Jessica Unruh | /   |    | Sen. Erin Oban | /   |    |
| Vice Chair Curt Kreun  | /   |    |                |     |    |
| Sen. Kelly Armstrong   | /   |    |                |     |    |
| Sen. Dwight Cook       | /   |    |                |     |    |
| Sen. Jim Roers         | /   |    |                |     |    |
| Sen. Don Schaible      | /   |    |                |     |    |
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Total (Yes) 7    No 0

Absent -0-

Floor Assignment Sen. Roers

If the vote is on an amendment, briefly indicate intent:

**REPORT OF STANDING COMMITTEE**

**HB 1378, as engrossed: Energy and Natural Resources Committee (Sen. Unruh, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS (7 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1378 was placed on the Sixth order on the calendar.**

Page 1, line 2, replace "aircraft detection lighting systems on wind generators" with "light-mitigating technology systems on wind energy conversion facilities"

Page 1, line 6, replace "**Aircraft detection lighting**" with "**Light-mitigating technology**"

Page 1, after line 6 insert:

"1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light-mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].

2."

Page 1, line 7, remove "generator, designed for or capable of wind energy"

Page 1, remove line 8

Page 1, line 9, replace "aircraft detection lighting system in accordance" with "energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light-mitigating technology system that complies"

Page 1, line 9, remove "The"

Page 1, remove lines 10 and 11

Page 1, line 12, replace "standards, and lighting system requirements." with:

"3. The commission shall require the installation of light-mitigating technology systems that comply with rules adopted by the commission as soon as technically feasible and if economically feasible for wind energy conversion facilities for which a certificate of site compatibility was issued before June 5, 2016.

4."

Page 1, line 12, replace "cost" with "costs"

Page 1, line 12, after "with" insert "the"

Page 1, line 13, replace "these systems" with "light-mitigating technology systems"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Re-number accordingly

**2017 CONFERENCE COMMITTEE**

**HB 1378**

# 2017 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee  
Peace Garden Room, State Capitol

HB 1378  
4/10/2017  
30020

Subcommittee  
 Conference Committee

*Eileen LeTang*

## Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

## Minutes:

**Rep Beadle:** Opens the conference committee on HB 1378. Looks like the senate made some significant adjustment to the structure of the bill. Could I have one of the senators walk through the bill?

**Sen Roers:** Some of the changes made was to get rid of the was the aircraft detection lighting system & change it to light-mitigating technology. The major change is splitting the requirements into 2 different categories. All the sites that were certified after to June 5, 2016 are fitted with the proper light-mitigating technology. Basically sited prior to that would then go to a study. The PSC would adopt rules for those conversions that would be technically & economically feasible for wind conversion facilities. There is the before & the after.

**Rep Laning:** We had in discussion the type of light system. Ours was aircraft related where it would shut down when an aircraft was not approaching. What type of systems you are talking about?

**Sen Roers:** It's the light-mitigating system. It's a system where the lights are put down to a dim mode & once they detect aircraft in the area, the brightness comes up to full & bright.

**Rep Laning:** How does it detect aircraft?

**Roers:** I don't know.

**Julie Fedorchak ~ Public Service Commission:** So, the light-mitigating technology is a broader term. It would encompass any existing & new technology. Light-mitigating is not a triggering technology; it dims on visibility of the conditions. It doesn't have anything to do with aircraft in the area.

**Rep Beadle:** With that technology, it would be on all the time, it's just that it would be dimmer state the whole time?

**Fedorchak:** That's correct, it will be significantly reduced.

**Sen Roers:** This works on visibility. So on a clear night, the light will still be dim.

**Fedorchak:** That's correct.

**Rep Dobervich:** Number 3 was added in, if economically feasible, it sounded that the conversion was extremely costly. Are we setting it up that it would never be feasible to adjust current existing wind towers?

**Fedorchak:** It's too early to say. This allows us to work in the rule making process on a project by project basis. We will decide if it's economically feasible.

**Rep Laning:** It sounds like you are working on this already. Is this bill necessary?

**Fedorchak:** New projects are already requiring to do this. It's hard to do retroactive rule making without some direction for the legislature. There are 3,000 megawatts operating today that don't have this technology operational. The citizens of this state some consideration of how to incorporate this technology into those existing projects.

**Rep Beadle:** The economic feasibility, I assume that would be determined by the commission or just left up to the individual companies?

**Fedorchak:** The way I read it, it's our discretion on what's economical feasible.

**Rep Laning:** I don't have a problem with the rewrite. For clarity, subparagraph 1, should it be public service commission not commission?

**Rep Beadle:** Under title 49-01, I assume that it falls under the PSC jurisdiction? One more thing, it says that the commission shall adopt rules by January 1, 2019. Do you need until 2019 for the rules to be promulgated?

**Fedorchak:** We are not deliberating rules in this particular issue. 2019 is generous. I view this as a top priority to finish this sooner.

**Rep Beadle:** I'm happy with the changes the senate made. I would entertain a motion.

**Rep Dobervich:** Moves that the house accede to senate amendments.

**Sen Cook:** Second.

**Roll call was taken on HB 1378 for the house to accede to the senate amendments with 6 yes, 0 no, 0 absent.**

# 2017 HOUSE STANDING COMMITTEE MINUTES

## Industry, Business and Labor Committee Peace Garden Room, State Capitol

HB 1378  
4/14/2017  
30151

- Subcommittee  
 Conference Committee

*Ellen Litang*

### Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

### Minutes:

*1 - Attachment*

**Rep Beadle:** Reopens the conference committee on HB 1378.

**Chairman Beadle:** There was consternation amongst certain legislators & they were pushing them for retroactivity, to force them to do everything.

**Rep Laning:** There was one other comment that was made was the landowners that objected to the lights at night.

**Chairman Beadle:** I thought the language in subsection 3, solved their concerns.

**Rep Laning:** I received one note that indicated that they would prefer 3 years after the rules are to establish to implement this. The technology & equipment is really not available at this point. I don't know if you want to extend this further or not.

**Chairman Beadle:** Chairman Keiser suggested to throw a delay of a year to see if we could get that to work.

**Sen Cook:** You mentioned retroactivity, we are getting everything that was built after June 5, 2016 by December 31, 2019, they are supposed to have them installed, that's not enough.?

**Chairman Beadle:** I thought that the retroactivity was in there. We also have it where everything before, the commission will adopt the rules. I think that was fair language.

**Rep Dobervich:** Section 1, number 3, as soon as technologically & economically feasible, it would be the PSC that would make that determination? What is going to determine the economically feasible & some of its newer technology? With that section in there it could be either a hamstring or helpful to insure it's done right.

**Chairman Beadle:** We could have the PSC address the economic feasibility. The way I interoperate is that the commission will put the rules out & say you need to have this done. If the technology is there, they can say, ok, now you have to have a certain date. My assumption is the economic feasibility would be built into the rate. That's why we left it up to the state's jurisdiction to see if it's going to be too much of a hindrance.

The amendment (**Attachment 1**), everything is the exact same is what the senate has adopted with the exception of subsection 3, which is the grayed text. What I did was reworded it a little bit & added 2 years onto the retroactivity portion. It still leaves the parameters, guideline & rules for the PSC but we put in an end date.

**Sen Unruh:** I think this language makes sense. I like the date put in. Since the date is so far out, we will have more legislative sessions. I think after the word commission, strike "unless the commission finds the installation is not technically or economically feasible" language. Put that 2021 date in there and have them draft rules. It would be more amendable to the house floor & I don't think it will cause any long term issues. We will be back before this deadline hits.

**Chairman Beadle:** House members, your thoughts.

**Rep Laning:** That makes sense, we are having another session when we can make changes.

**Chairman Beadle:** I think that's a friendly adjustment and have no problem with that change.

**Rep Dobervich:** I agree.

**Chairman Beadle:** I have 2 thoughts, (a) we can amend or (b), we send it back to the floor.

**Rep Laning:** I move we accept their proposed language minus the last line.

**Chairman Beadle:** We have a motion the Senate would recede from the Senate amendments and further amend by adopting these proposed amendments with the exception of the words, "unless the commission finds the installation is not technically or economically feasible."

**Sen. Unruh:** second

**Chairman Beadle:** We have a second. Any discussion?

**Sen Roers:** Could the PSC make comments on the new amendments.

**Julie Fedorchak ~ PSC:** It allows a conversation between us the wind farms. Not all projects are the same. We are open to either. We can work with the 2021 deadline. The industry would prefer the outlet of the economic and technically feasible.

**Chairman Beadle:** The other rules, when we have other dates in statute that require certain things that fall under the PSC jurisdiction, by having the date, does that mean your rules shut

down any wiggle room? Does that provide any of that additional flexibility or by having that date does that override any rules?

**Fedorchak:** Our rules we adopt will take in the consideration availability of technology, equipment and FAA approval. That to me is an out for FAA would slow things down, we would give them a waiver.

**Sen Roers:** The words “technical and economically feasible” we key words. The technical piece had to do with some of the earlier wind farms lacked technology to bring in the sophisticated systems so you wanted wiggle room. Can you give your reason for using the words “technical abilities?”

**Fedorchak:** It came from the fact that technology is always changing. We wanted to provide opportunity to adopt new technology, it’s availability and how it works with existing facilities. That’s a policy consideration. Can we push the envelope; I think we can. There is still some flexibility.

**John Olson ~ NextEra Energy:** I not given a lot of comfort in believing the PSC will consider technical or economic feasibility. Those words are in the bill now. We changed it to light mitigation because we’re looking into the future of technology. Some old wind farms are fiber incompetent to adopt some of these technologies. We don’t know the ability when they develop those rules. I know the commission with that wording in here will have that ability to have that conversation when they develop those rules. We would prefer to have the wording in statute.

**Chairman Beadle:** Comments? Right now we don’t have that language in there. We’ve overstruck that.

**Rep Laning:** Considering we have 2 sessions in the future, let’s move on. We can add it in the future.

**Chairman Beadle:** the clerk will take the roll for the Senate to Recede from their amendments and further amend.

**Roll call was taken on HB 1378: 5 yes, 1 no.**

# 2017 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee  
Peace Garden Room, State Capitol

HB 1378  
4/17/2017  
30177

- Subcommittee  
 Conference Committee



## Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

## Minutes:

Attachment 1

**Chairman Beadle:** Reopens the conference committee on HB 1378.

**Chairman Beadle:** After when we talked last time, there were some people who questioned if there was the flexibility as we discussed. We had discussed when we get to the deadline, if there are issues with technical feasibility, is there flexibility for the PSC to give leeway towards the towers and companies? I wanted an attorney from the PSC here to comment on the language.

**John Schuh~Legal Staff from the PSC:** As it is written, there is a bit of ambiguity on how it should be applied.

**Chairman Beadle:** The questions are in subsection 3, (attachment 1). When you read the language with the deadline, every wind facility must be equipped. Typically, "must" is clear. If a landowner is not satisfied with the fact that the deadline is past and a tower is not in compliance and they take it to court, the court looks at the letter of the law. By having this language in there, does that make it so they are noncompliant and subject to a penalty?

**John Schuh:** It would indicate that they would be required to have that technology. It would come in front of the legislative rule making committee and that would indicate some legislative intent.

**Chairman Beadle:** If they look through the legislative session history for this bill, they will see original language that was overstruck. We did have language in there that said the commission can give an exemption for certain economic and technical feasibility. That has been overstruck. The legislative intent would be that there is no exemption allowed.

**John Schuh:** I do believe that could be used to make that case.

(6:30)

**Shane Goettle ~ Represents Nextera and MDU Resources:** We have the same concern about flexibility to give more time with the technical or economic. Litigation probability is high. We propose there would be a presumption that the companies would have installed light mitigation technology and they would have to go to the PSC for exception to allow for that circumstance. Gives an example of the Edgeley-Kulm windfarm. We want some flexibility.

**Chairman Beadle:** What percentage of the wind farms might be affected to be able to comply?

**Shane Goettle:** I don't have a percentage for you. It's going to be on a case by case basis. With the old farms you have to run new fiber and grant new easements.

**Chairman Beadle:** We have two legislative sessions between now and the effective date on this.

**Shane Goettle:** If there were exceptions and it was believed the PSC had no flexibility, you will see legislation. The uncertainty can have impacts upon their decisions now.

(12:48)

**Carlee Mcleod ~Utility Shareholders of North Dakota:** The rules the PSC has to promulgate are due before next session.

**Jean Schafer ~ Basin Electric:** Our concerns are with the technical standpoint. The Senate and House had two very different hearings. We have missile silos in the middle of our windfarm. We have a helipad. This is germane to aircraft detection lighting systems. We understand that the FAA would trump most of what we would choose to have to do for mitigation technology at that location. The language would give us a little bit more comfort, we would be supportive if the PSC is alright with it.

**Chairman Beadle:** We can leave this as we acted on Friday. Or we can put back the overstruck language, "unless the commission finds the installation is not technically or economically feasible." We thought that language could possibly jeopardize it going through the House. Or we could add in the language "the commission may grant an extension of time based upon technical or economic feasibility concerns."

**Rep Laning:** Moves to reconsider our actions wherein the Senate receded from the Senate amendments and we further amended the bill.

**Sen Roers:** Second.

**Motion failed** due to a lack of majority in both chambers.

**Sen Unruh:** I would like more time to see what is appropriate to move forward.

**Chairman Beadle:** We will reschedule for another meeting.

# 2017 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee  
Peace Garden Room, State Capitol

HB 1378  
4/18/2017  
30195

Subcommittee  
 Conference Committee

*Ellen Letang*

## Explanation or reason for introduction of bill/resolution:

Aircraft lighting detection systems on wind generators.

## Minutes:

Attachment 1, 2

**Rep Beadle:** Reopens the conference committee on HB 1378.

**Chairman Beadle:** Yesterday, we discussed issues with the language we had before. With conversation with some people indicated the way the language is right now, there is not the flexibility that the PSC originally indicated that might be. Because of the last sentence change in subsection 3. We have been discussing measures to adjust it.

**Attachment 1**, the commission may grant an extension of time. We added in the additional language of "after public hearing, based upon technical or economic feasibility considerations". The idea behind this adjustment is, we know there is issues with the technologically insufficient or old, bad systems to make it to the 2021 deadline. This will give the PSC some latitude to do an extension of time.

Section 1, is a technical correction that the PSC's legal counsel notice today for us to adjust. In summary, it restructures the flow in paragraph 1. **Attachment 2.**

**Sen Unruh:** Moves to reconsider.

**Sen Cook:** Second.

**Roll call was taken to reconsider our action on senate to recede amendments with 6 yes, 0 no, 0 absent.**

**Chairman Beadle:** What we need to do is recede from the amendments & further amend.

**Sen Unruh:** Moves that recede from the senate amendments & further amend as outline on the technical amendment for subsection 1 & the addition of the language in subsection 3.

**Rep Laning:** Second.

House Industry, Business and Labor Committee

HB 1378

April 18, 2017

Page 2

**Roll call was taken on HB 1378 for the Senate to recede from Senate amendments & amends with 6 yes, 0 no, 0 absent.**

April 14, 2017

9/17/17 DP

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378

That the Senate recede from its amendments as printed on pages 1401 and 1402 of the House Journal and pages 1093 and 1094 of the Senate Journal and that Engrossed House Bill No. 1378 be amended as follows:

Page 1, line 2, replace "aircraft detection lighting systems on wind generators" with "light-mitigating technology systems on wind energy conversion facilities"

Page 1, line 6, replace "**Aircraft detection lighting**" with "**Light-mitigating technology**"

Page 1, after line 6 insert

"1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light-mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].

2."

Page 1, line 7, remove "generator, designed for or capable of wind energy"

Page 1, remove line 8

Page 1, line 9, replace "aircraft detection lighting system in accordance" with "energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light-mitigating technology system that complies"

Page 1, line 9, remove "The"

Page 1, remove lines 10 and 11

Page 1, line 12, replace "standards, and lighting system requirements." with:

"3. By December 31, 2021, every wind energy conversion facility for which the commission issued a certificate of site compatibility before June 5, 2016, must be equipped with a functioning light-mitigating technology system that complies with the rules adopted by the commission.

4."

Page 1, line 12, replace "cost" with "costs"

Page 1, line 12, after "with" insert "the"

Page 1, line 13, replace "these systems" with "light-mitigating technology systems"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Re-number accordingly

April 18, 2017

4/18/17 DOR  
1 of 2

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378

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Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Renumber accordingly

4/15/20  
2022









Date: 4/18/2017  
Roll Call Vote: 2

**2017 HOUSE CONFERENCE COMMITTEE  
ROLL CALL VOTES**

BILL/RESOLUTION NO. HB 1378 as (re) engrossed

**House Industry, Business & Labor Committee**

- Action Taken**
- HOUSE accede to Senate Amendments
  - HOUSE accede to Senate Amendments and further amend
  - SENATE recede from Senate amendments
  - SENATE recede from Senate amendments and amend as follows
- Unable to agree**, recommends that the committee be discharged and a new committee be appointed

Motion Made by:

Sen Unruh

Seconded by:

Rep Laning

| Representatives | 4/18 |  | Yes | No |  | Senators          | 4/18 |  | Yes | No |
|-----------------|------|--|-----|----|--|-------------------|------|--|-----|----|
| Rep Beadle      | X    |  | X   |    |  | Sen Unruh         | X    |  | X   |    |
| Rep Laning      | X    |  | X   |    |  | Sen Cook          | X    |  | X   |    |
| Rep Dobervich   | X    |  | X   |    |  | Sen Roers         | X    |  | X   |    |
|                 |      |  |     |    |  |                   |      |  |     |    |
|                 |      |  |     |    |  |                   |      |  |     |    |
| Total Rep. Vote |      |  | 3   |    |  | Total Senate Vote |      |  | 3   |    |

Vote Count      Yes: 6                      No: 0                      Absent: 0

House Carrier \_\_\_\_\_ Senate Carrier \_\_\_\_\_

LC Number 17.0770 . 04005 of amendment

LC Number \_\_\_\_\_ . 07000 of engrossment

Emergency clause added or deleted

Statement of purpose of amendment

Moves that recede from the senate amendments & further amend as outline on the technical amendment for subsection 1 & the addition of the language in subsection 3.

**REPORT OF CONFERENCE COMMITTEE**

**HB 1378, as engrossed:** Your conference committee (Sens. Unruh, Cook, Roers and Reps. Beadle, Laning, Dobervich) recommends that the **HOUSE ACCEDE** to the Senate amendments as printed on HJ pages 1401-1402 and place HB 1378 on the Seventh order.

Engrossed HB 1378 was placed on the Seventh order of business on the calendar.

Insert LC: 17.0770.04005  
House Carrier: Beadle  
Senate Carrier: Unruh

**REPORT OF CONFERENCE COMMITTEE**

**HB 1378, as engrossed:** Your conference committee (Sens. Unruh, Cook, Roers and Reps. Beadle, Laning, Dobervich) recommends that the **SENATE RECEDE** from the Senate amendments as printed on HJ pages 1401-1402, adopt amendments as follows, and place HB 1378 on the Seventh order:

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Re-number accordingly

**Insert LC: 17.0770.04005**  
**House Carrier: Beadle**  
**Senate Carrier: Unruh**

Engrossed HB 1378 was placed on the Seventh order of business on the calendar.

**2017 TESTIMONY**

**HB 1378**

1

**HB1378 Regarding Aircraft Detection Lighting Systems  
Industry, Business, and Labor Committee 1/23/17  
Testimony: Alison Grotberg, Wimbledon, ND**

**Chariman Keiser, Vice-chair Sukut, Members of the Committee,**

**Intro** — With this bill we are asking the North Dakota legislature to grant North Dakota citizens relief.

Wind farm projects have exploded across the countryside and citizens are getting very weary of them. Although there are many, many very reasonable complaints surrounding the existence of wind farms, the fastest complaint to rise to most people's lips is "those lights!"

**Examples** — I could give you example after example of people from all across the state troubled by the proliferation of untiring red blinking lights polluting our beautiful prairie night skies.

**On our farm** alone, when we look to the northeast we can see red blinking lights 20 miles away. To our northwest, the southern edge of the newly developed Courtney Wind Farm is only 8 miles away and has a dreadfully energetic line-up of blinking red lights. From our bedroom window we can see twelve of them. Now, the same developer of the Courtney Wind Farm is trying to develop another farm with a northeastern edge 1 mile from our house. The invasion feels very real to us.

**Carrington** — Recently, I drove home from Carrington in the dark. I watched the blinking red lights of the Courtney Wind Farm for 50 minutes. Every few seconds they were here, every few seconds they were there and as the road wound one way and then another; it was disorienting. It was distracting. My peripheral vision was constantly being pulled off the road first this way and then that. I felt exhausted as I drove. When I finally broke past the edge of the wind farm, relief flowed over me and for the first time on my trip, I felt able to fully focus on the road. My thirteen year old daughter was with me. When the last blinking red light was out of sight, even she said, "Oh good, now we can finally relax."

**This bill is intended to bring relief to residents of North Dakota who live within view of wind farms and the visual pollution they produce every night.**

**PSC** is now requiring newly developed wind farms to have aircraft detection lighting systems.

We applaud the Public Service Commission for recognizing the disturbing, discouraging, and disorienting effect of night-sky pollution in our state created by wind farms and in so doing requiring all newly developed wind farms to install aircraft detection lighting systems. These systems use radar to determine when aircraft is within

~~3~~ miles of a wind farm. At that point, the lights on the turbines turn on to warn them; otherwise, the red blinking lights stay off.

**We are simply asking the legislature to put the very same requirement to install aircraft detection lighting systems on existing wind farms that the new wind farms are now being required, by the PSC, to install.**

**North Dakota Welcome Mat** —For several years, North Dakota has been a welcome mat to Wind Energy. As a result, its citizens have become a door mat and have borne the brunt of some very unpleasant realities, the constantly blinking red lights are arguably at the top of that list. It's time wind energy takes responsibility for the visual pollution it has proliferated across North Dakota. It's time they thank North Dakotans for the welcome mat they have received. Please help restore the beauty of the prairie night sky and provide relief to your fellow citizens who live near wind farms by supporting this bill.

**No Losers with this Bill** — There are no losers with this legislation: citizens will gain respite from a huge night-sky nuisance; attitudes toward wind farms will improve; the legislature will be viewed as proactive and responsive to an increasing problem on the minds of North Dakotans.

Thank you for your service as legislators, your time, and for considering this bill.

HB1378 Regarding Aircraft Detection Lighting Systems  
Industry, Business, and Labor Committee 1/23/17  
Testimony: Alison Grotberg, Wimbledon, ND  
agrotberg@gmail.com

● Come before this committee today to share my perspective and my experience relating to the issue of the wind towers that have invaded my neighborhood.

When I heard that wind towers were coming to Courtenay, I had absolutely no idea how their presence would affect the life of my family.

We live on the west side of Highway 20. We own a very small rural property on top of a hill.

Across the highway to the east of us, we are experiencing a visual assault—one that invades the wide-open spaces we have enjoyed from our “hill of a view” for the past 22 years. During daylight hours, they stand like an artificial metallic sentinel army, wildly waving their arms, seemingly taunting us. At night they are much more offensive—blinking and pulsating in rhythmic singularity, attempting to hypnotize us to accept their presence.

This visual pollution forces us to sleep with our blinds down and causes us to retreat to the west behind the cover of our house when spending time outside at night so that we can ignore, momentarily, the distraction they create in our night sky.

● We do have an option—to move to the other property that is in our care after the passing of my husband’s uncle. But, much like our current view, this property is near Hannaford with a view out of the large living room picture window that faces the army of wind towers on the Luverne moraine. The pulsing and blinking in that neighborhood has kept us from remodeling and expanding that property, and causes us to realize that it is possibly unmarketable in the future because the pulsating visual presence is so obnoxious that we would most certainly face opposition from a potential buyer for the same reasons we shirk from considering that our home near Courtenay would be marketable in the future.

Many of our neighbors to the east are obviously benefitting financially from the planting of these immovable figures. They will have to reconcile the real or perceived damage to their health and well-being.

My family, on the other side of the road, will have to reconcile the presence of this nightly invasion without financial recompense. We would rather have our pristine view restored. Knowing that these waving giants will not move, we would beg for a satisfactory compromise.

If these unsightly sentinels were only required to show their presence when aircraft were near, we would at least be spared from the relentless rhythm of living in their intense, red light district. The reprieve of occasional distraction would be more tolerable than the current situation.

I should leave you with something positive. The winter weather has been a blessing and answer to prayer, for with the blizzards and snow fog, the view to the east is obliterated and gives us a benchmark to measure the visibility factor for our travel.

Respectfully submitted,



● Laurie Christensen  
8454 16<sup>th</sup> St SE  
Courtenay, ND 58426  
701-435-2947 (H)  
701-320-8556 (Cell)

**House Bill 1378—Testimony in Opposition**

House Industry, Business, and Labor, Chairman George Keiser

January 23, 2017

Chairman Keiser, members of the committee, I am Carlee McLeod, President of the Utility Shareholders of North Dakota (USND), and I come before you to testify in opposition to this bill on behalf of my members, including Xcel Energy, Otter Tail Power Company, and Montana Dakota Utilities.

We understand the desire to make lighting more palatable for those in the immediate vicinity of a wind farm. Those people in a wind farm's footprint are compensated for the use of their land under the terms of their land use agreement with the developer. However, we recognize that others more removed from a site that is not on their land might dislike the aesthetics of the lights. My member companies believe in being good neighbors. They are already looking into ways to use aircraft monitoring systems on future projects, but the technology is new, expensive, and has not been vetted enough to support this sort of mandate. In the past, North Dakota legislators and regulators have adamantly opposed forcing untested, expensive technology on companies and consumers. The onerous requirements of the Clean Power Plan and the EPA's regional haze standards come to mind, both of which force technology on an industry without consideration for the cost to companies, and ultimately the consumer. We hope this committee will reject this bill with the same force those federal mandates have been opposed.

Lighting on wind tower generation is regulated by the FAA to ensure the safety of aircraft. Unlike this legislation, not every tower is required by the FAA to have lighting. This additional lighting would create more of a public nuisance than current regulations.

In addition, the cost of this new technology is problematic. According to information from one of my member companies, this technology would cost between \$.75M to \$1.5M to install, depending on the site. Since it is unknown how the technology will interact with existing FAA lights, current FAA lights might need to be replaced in order to support the new technology. Without replacing them, costs would run \$250,000-\$300,000 for control boards to integrate the technology with existing lights. If light replacement was needed, it would add another \$450,000 to \$500,000 per project (based on a 200MW farm.) For one project, the total costs could run \$1.45M-\$2.3M. While the legislation states the costs of this technology would be the sole responsibility of the owner, capital costs are included in rates. **Customers would pay for this mandate.**

If the committee does decide to mandate this new technology, the timing is problematic. To the best of my knowledge, there are only two companies in the county making this sort of equipment, and the technology has not matured beyond its first generation. North Dakota consumers will be paying to be the guinea pigs for the rest of the industry. While we believe this issue is too new to pass this mandate this session, at the very least the implementation date should be pushed a few years into the future for the technology to be appropriately vetted.

We understand that regulators and legislators must find a balance between keeping costs reasonable for consumers and limiting the burden absorbed by landowners surrounding generation and transmission. This mandate does not strike that balance, and we urge you to oppose it.

Thank you.



HB 1378

January 23, 2017

House IBL Committee

Mr. Chairman, Members of the Committee:

My name is Robert Harms. I'm the lobbyist for Tradewind Energy, Inc. We **OPPOSE** HB 1378 as written but, Tradewind is supportive of using aircraft lighting detection systems as the technology evolves.

Tradewind Energy, is a wind-developer that has been in business since 2003 and developed the Lindahl Wind Project north of Tioga. The Lindahl Wind Project—developed by local landowners themselves provided:

- 150 MW of new power into the Bakken region
- 18,000 acre foot print; approximately 75 towers
- 28 landowners (who developed their own land lease)
- \$250 million investment
- 100 construction jobs
- 12 permanent jobs after construction
- Low-cost power to local market in need of power, as per ND Transmission Authority (2012)
- 25 year power purchase agreement signed with Basin Electric-executed November, 2014
- Constructed in 2016 and placed in service by December, 2016

Tradewind opposes HB 1378, as written because we don't think the bill can be implemented in the time provided. The legislation should be amended to:

- be sufficiently generic to allow the operator to select the systems they want and
- be prospective after December, 2018 provided the technology is commercially available.

Retrofitting by 2018, wind projects currently in place presents a serious challenge, if not an impossibility. First, the commercial availability of the technology is limited. Only one vendor offers FAA approved systems that we have identified. More importantly existing projects may not be capable of hosting the aircraft detecting technology, because of design parameters, wiring limits, SCADA system capacities, site specific limitations themselves (that may impede the functionality of the systems), and compliance with approved FAA lighting plans for the project. All of which cause concerns for HB 1378 as written.

For these reasons we ask that HB 1378 be amended as suggested above, or the bill be rejected.

Robert W. Harms, JD  
On behalf of Tradewind Energy, Inc.

## **HB 1378 Aircraft Detection Lighting Systems**

**IBL Committee 2/1/2017**

**Rep. Daniel Johnston**

### **Intro**

With the proliferation of wind farms across North Dakota come unintended negative consequences of constant red flashing lights and the subsequent health and safety issues associated with them. These consequences have necessitated the commonsense safeguards that HB 1378 offers.

### **How / Why**

This legislation was developed in collaboration with the PSC, by legislatively requiring existing wind farms to retrofit to this technology by it will prevent the PSC from pursuing retroactive rules on their own, which is not an optimal approach. Furthermore, the PSC may not require the retrofitting of existing wind farms until at least one project is running and approved by the FAA in North Dakota. Currently, the PSC has issued permits for four wind farm projects with the requirement that they be equipped with the aircraft detection lighting technology (ADLS). It is unknown and doubtful that any of the four farms will be operational by Dec. 2018, which would likely delay a PSC mandate to retrofit barring legislative intervention.

### **Is December 2018 a viable timeline**

Yes, currently there is an operational FAA approved wind farm that is utilizing this technology. Standards for ADLS technology were introduced by the FAA in December 2015. The radar-activated lighting technology was installed on a recently constructed and commissioned 80MW wind farm in Wyoming; flight tests were successfully conducted and the system went operational in November of 2016.

The results of the Wyoming project were characterized by this statement, "Since we turned the system on in Wyoming, we regularly see nights where the lights are off 99% of the time."

Recently, residents of New England fought the construction of wind farms located 10 miles of the coast claiming irreparable harm would be done to their communities and way of life. Undeterred, and flush with \$40 million in federal grants the wind energy company is pressing forward with the coastal project. In North Dakota, wind farms are almost always much closer than 10 miles to a residence and yet, the communities across ND ask for one thing...peace at night from a distracting red light.

<http://www.businesswire.com/news/home/20170130005096/en/Laufer-Wind-Announces-Operational-Aircraft-Detection-Lighting>

<http://www.pressherald.com/2016/11/01/monhegan-residents-renew-fight-against-off-shore-turbines/>

**HB1378- Aircraft Detection Lighting System**

**Testimony 2/1/2017-Thomas W Reichert, Stark County**

**INTO:**

Good Morning. My name is Tom Reichert and I live in Stark County. My wife and I have a small farm 12 miles SE of Dickinson and 3 miles north of the Brady 1 Wind Farm in southern Stark County. Pam and I bought this farm because we loved the peaceful location, the beautiful prairie vistas as well as the many benefits of country living. We have spent significant time and financial resources restoring a classic farm house, farmstead, improving wildlife habit and have planted nearly 10,000 trees in the last 14 years.

**RESULT:**

All that we worked so hard to develop, as well as our financial investment is threaten by the Brady 1 Wind Farm. The pollution of the landscape, the spoiled view both in the day and at night is the result of the Brady 1 Wind Farm.

**BENEFIT of HB1378:**

The bill before you will almost entirely eliminate the visual pollution at night. And more importantly it will give much needed relief to the many residents who live within the boundaries of the wind farm. Those are the people that suffer most from all the negative consequences of this intrusive development, many receive no financial benefits and because of ridiculous set back regulations some have homes as close as close as 2,000 feet from a 430' turbine. And Stark County's set back regulations are more strict then many counties in the state.

**PILOT'S PERSPECTIVE:**

I am a licensed pilot, own and fly my airplane out of the Dickinson airport ( located 5 miles north of Brady1). Sometimes I fly in and out of the airport at night. Reasonable and safe night flight operations would not be threatened by unlit towers and the ADLS will provide adequate warning to any errant pilot.

**AIRCRAFT DETECTION LIGHTING SYSTEM:**

The ADLS is relatively new. I would like to quickly pass on some facts about the system manufactured by DETECT CORP. of Panama City, Florida. Source of my information is Mr. Delan Ruptel. He is the Project Development Engineer for the company.

- DETECT CORP's system is the only system reviewed and approved for use in the US by the FAA.

They currently have 9 systems in operation.

- 1 in Canada
- 1 in Arizona
- 2 in Sweden
- 5 NY State

Mr. Ruptel estimated they could install the ADLS on recently constructed and operating wind farms in 1 ½ to 2 weeks time. The time required could be greater with older WFs. The retrofit to the wiring in older WFs can be more difficult and time consuming however definitely doable.

#### **CONCLUSION**

I strongly urge this committee to give HB1378 a do pass. I believe the ND legislature must take every opportunity to embrace the latest technology available for the benefit of the citizens of the state. Particularly when the owners of the wind farms are not excessively burdened by this requirement. And think of all the energy saved by not having the "the devils eyes" flashing every night from dusk to dawn for the next 30 years. That is no small savings.

Thank You

Tom Reichert

Feb. 1, 2017

HB 1378

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Farren and Autumn Richard live four miles west from Lefor and have resided in their home for 12 plus years. Their home and farmland is within the center of the Brady 1 Windfarm, and although they actively did not participate in the Next Era Wind Energy Project, at least 9 wind towers are within a mile or less of their home and have been quoted to saying they can count up to 40 turbines within eye sight of their driveway.

This is their testimony:

We were always concerned about the changes that would be seen in our community from the erection of the wind farm. Now that it is in full effect, we can see the long term and negative effects that disrupt our lives on a daily basis.

From our residence, we can visually see several windtowers above the tree line; the rotation can often be heard at our home. At times, the sound is equivalent to an airplane, and the roar can be heard even within the house. We have not measured the decibels of the sound, but it is loud enough to be noticeable and disruptive; clearly not what was portrayed by Next Era.

At night, we can no longer see the wind towers, or the shadowing that can often flicker on the roads when traveling, so you would think this is a good thing, except for the obnoxious glaring red lights that flash. And these lights are three hundred feet in the air; they are hard to miss. If they were dimmer or at least didn't manically flash, it might be considered tolerable. A good comparison would be trying to live within an airstrip, in the middle of the landing zone.

We have company visit us often; since the completion of the wind farm, it has been interesting to see the reaction of friends and family. Even those who have traveled to visit many times now struggle to navigate the roads to our house due to the disruptive red flashing. Our daughter had not visited since the towers and lights were completed. She came to visit one evening and turned off the Enchanted Highway onto roads that she's traveled since she was seven; in the dark, she said she became extremely disoriented by the 'floating lights' and missed her turn to our house, several times. We believe this is an excellent example of the quality of travel and life in southcentral Stark County.

As for our personal quality of life, living day to day within a wind farm, we believe the wind turbines will cause more disruption when summer arrives, simply because we will no longer have our quiet summer nights that we used to enjoy. The turbines are loud, almost constantly. Long shadows are created by the blades, and the night only brings the red flashes. We can hear the whooshing sounds within our bedroom and upper levels of our home.

Though we cannot confirm or correlate our suspicions, Autumn has had a spike in migraines, which developed shortly after the wind farm was completed; she is now prescribed a daily medication to control the increase of migraines that she suffers and we find this concerning.

Another major concern we have, as non participants within the footprint of Brady 1 Windfarm, is the decrease in property value. We could have sold our home, and lived in another region where there is no chance for another project, but we realized that the value we would receive for our home would be subpar. A close neighbor bought a home within the city limits of Dickinson, and has been trying to sell his farmstead for almost a year; the neighbor confided in us that every prospective buyer was dismayed by the proximity of the wind farm and was no longer interested in the property. We feel that this is a good indication of the loss in property value that everyone in this footprint suffers from, whether they signed on for the project or not.

If we could make a request, we would say that we would like the entire farm eradicated, or transported to a less populated area. However, since this is unlikely, we would settle for the elimination of the red lights, or at least something less disruptive to the community. Until then, we both agree that the red lights are so glaring, harsh, and hazardous to drivers, that it would not be outside the realm of consideration to place a moratorium on more farms and halt the towers and lights until a more appealing solution arises.

Finally, we want to leave you with these final thoughts; we love our home and intend to live there, regardless of the turbines. However, everyday, when we pull into our drive, we have the luxury of seeing our house being towered over by two wind turbines and they look to be literally in our backyard and are less than a mile away. It is disheartening and a constant reminder of what has been lost in our community. Not a gain, but surely a loss.

Thank you for taking the time to listen to our testimony and personal experience of life within a wind farm.

Sincerely,

Autumn & Farren Richard

Feb 1, 2017

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House Industry Business and Labor Committee

HB 1378 Testimony

Carla Arthaud

Good Morning Chairmen Keiser and members of the House IBL committee, my name is Carla Arthaud and I'm here to testify in support of House Bill 1378.

Like many people who support Bill 1378, I've lived in North Dakota my whole life. I know first-hand the numerous natural resources North Dakota has to offer the entire world while benefiting North Dakota's growing and strong economy. However, North Dakotan industries, such as coal and oil are held to the highest safety standards to ensure North Dakota land and residence are safe so why is it even a question that wind energy wouldn't be held to these standards?

When wind energy was first introduced into North Dakota, many land owners and residence were promised and believed that the wind turbines would be held to the highest safety standards possible. However, many residence were quick to find out that the infrasound, low- frequency echoes are in-fact not low-frequent and are the cause of many health complaints. Also, the constant blinking red lights from the wind turbines have also caused distress and anxiety to many North Dakotans, some who didn't even sign off on the turbines, but their neighbors did.

There is an, Aircraft Detection Lighting System, better known as ADLS, that has been approved in other states and needs to be implemented on the existing and new wind turbines in North

pg 1

Dakota. This system is a step forward that would make these turbines a bit more tolerable for people in the vicinity of these structures.

As a rural, North Dakota resident. I would like to see an immediate moratorium on all new wind turbines until the ADLS is implemented by all wind energy organizations in North Dakota.

Thank you,

Carla Arthaud

Feb 1, 2017

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House Industry Business and Labor Committee

HB 1378 Testimony

Lea Dorner

Good Morning Chairman Keiser, and Member of House IBL Committee.

My name is Lea Dorner, and I support HB 1378.

My name is Lea Dorner. I live North of New England, ND. I am one of the many directly affected by the Brady I and Brady II wind tower farms. Please accept my apologies for not being able to be here in person. I hope I can convey my concerns and experiences correctly with the sincerity that's in my heart.

Therefore I will begin. These towers are a threat to everyone. They claim to be environmentally safe, but are far from it. They not only pollute the land with garbage, but the people's health. I have experienced migraines, nausea, and ear ringing since they turned them on, back in December. My youngest son who is 5, experiences the feelings of plugged ears.

There were attempts to help address all these concerns by the PSC at their meetings. But now when problems are arising, there is no effort to find truths. For example the noise level of these towers at ½ mile away is exhausting to say the least. There are three noises to their pollution. The first is a "whoosh" sound heard from the blades piercing the air. The second is the constant motor that fluctuates up and down. The third is the sound of a jet that is hovering overhead. I have used two different decibel apps inside and outside of my house at 2:00 in the morning. They range in the 80-90 decibel reading, and that is with a wind speed of 5-10 miles an hour. The PSC set a maximum of 50 decibels, no matter which sound you hear. But when called and informed of the high volumes noted, I was told they have no third party testing abilities. Instead they contacted the wind company to test their towers. I was called by their project manager and told they would look into it with a report in two days. That was 2 ½ weeks ago and I'm still patiently waiting a response from him or the PSC, on a report.

These noises make my ears ring. The pressure in my head is very painful. Imagine putting in an 18 hour day at work, and longing to go home to put your feet up and relax, or just crash into a deep sleep. I no longer have that luxury. When I get home to relax in my cozy haven, I hear constant roaring noises from outside. There is nothing I can do to get them to quiet down. Unlike an old freezer that hums or phone charger that squeals. I have no power in the noises that they produce, that attack my health. There are three towers within a half a mile away from my house. One to the North, one to the East, and one to the Southeast. I not only hear them, but can feel their pressures they give off.

The other pollutant these towers possess is the blinking red light at night. They cause a hypnotic affect when I have to drive through them to my house. I really have to take note at what I'm doing, or I end up thinking, how I got this far without remembering that curve in the road. A big sale on these at the County Commissioners meeting in Mott, was that they were supposed to have the latest and greatest technology.

pg 1

Where they would only turn on while an aircraft was in the area, which would be detected by radar in the plane. At the PSC meeting it wasn't as far in technology as they had planned, but would get right on it to install them as soon as they could.

I understand the importance of keeping our passengers in the sky as safe as we can. But when things are promised and no repercussions for lies portrayed, one questions why these things were so great. That and the story changed from meeting to meeting on every account. Before they turned the towers on they had a dull red light on them. Some still don't have any lights on them. The planes that used to fly right over our place seem to veer around to the East of the towers to get to Dickinson's airport anyway. But my question to you is, if they were safe enough to sit in the air for 3 months while completing construction with a solid, not so bright red flashing light, and not one airline complained, why is it demanding that we have the bright blinking red light now? I think it is time to hold these big companies accountable to their words and actions. If not for the ND government, for the great people of ND.

This company has lied not only to you but everyone they came in contact with. They don't care about us here or respect our laws. They care about their dollar only. Setting laws now to keep those in check should not be harder than the most daunting of chores. We have held the oil and coal industries to the highest standards and given the wind industry free reign. We also hold farmers and ranchers to high standards of supply and demand, along with safe products. We have to follow rules of the trade. We take pride in our product and only want the best for everyone to enjoy it as much as we do. If I can't eat what I grow, I sure wouldn't push it on anyone else, and don't. I take pride in the hard work I do to provide, not for just my family, but others who enjoy the benefits of beef. I think we need to enforce these companies to live up to the pride they claim they have for the product they are selling, without intoxicating anyone's life for it. If we are going to be a success with this, we need to set high standards on any new industry, and stick to our ground on keeping everyone here safe.

We have good people here in ND. The best around in my book. But these wind farms tear apart the strongest communities, and friendships. They have even managed to tear apart families. How do we raise the future generations by teaching them hardships that could be averted. We shouldn't have to keep touching the fire to know it burns. Many communities have divided from these, it's time to take a stand and save the next ones who are in line. Small town caring communities is what ND is all about. You may have heard many celebrities loving our state for its gracious hospitality throughout. Why should we let that go? Grab on to it, hold it with Pride, and never let another community get pushed to the sidelines. It does reflect the state as a whole unit. If those who keep taking from us are laughing, let them have their laugh. Now it's time to get our ground back and stand tall. Dust ourselves off and learn from the mistakes. Hold these big companies accountable for their actions. Set strict laws that benefit the North Dakotans and protect us from the ugly money hungry intruders, who are making us the end of their jokes. Listen to the great people of ND, who love this land, and want the best for the future of her. They are the people that are here today, fighting for the protection of the people, and not their wallet.

Thank you for your time today on this sensitive and heartfelt subject. I hope you can listen with a pure heart and open mind.

If anyone has any questions on my experiences please feel free to call the phone numbers listed at the bottom of this page. Please leave a message if I'm unavailable, I will get back to you. I have 3 boys, (preteen to preschool) and my husband and I work in town as well, while ranching 90 head of cattle.

I won't be ignoring you or snobby, I'm just pulled in many directions to follow a dream I hope to carry out in this life.

Thank you again,

Lea Dorner

Home: 1-701-579-4226

Cell: 1-701-590-0255

Feb 1, 2017

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17.0770.03000

Prepared by Legislative Intern 8  
January 23, 2017

**PROPOSED AMENDMENT TO HOUSE BILL NO. 1378**

Page 1, line 2, replace "lighting detection" with "detection lighting"

Page 1, line 6, replace "lighting detection" with "detection lighting"

Page 1, line 9, replace "lighting detection" with "detection lighting"

Page 1, line 10, replace "lighting detection" with "detection lighting"

Renumber accordingly

Feb 1, 2017

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17.0770.03000

Prepared by Legislative Intern 8  
January 31, 2017

**PROPOSED AMENDMENT TO HOUSE BILL NO. 1378**  
**-Amendment changing compliance deadlines**

Page 1, line 2, replace "lighting detection" with "detection lighting"

Page 1, line 2, replace "generators" with "energy conversion facilities"

Page 1, line 6, replace "lighting detection" with "detection lighting"

Page 1, line 7, replace "2018" with "2021"

Page 1, lines 7 and 8, replace "generator, designed for or capable of wind energy conversion exceeding one-half megawatt of electricity" with "wind energy conversion facility placed in service on or after July 1, 2017, and issued a certificate of site compatibility"

Page 1, line 9, replace "lighting detection" with "detection lighting"

Page 1, line 9, replace "rules adopted by the commission" with "Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]"

Page 1, line 10, after "rules" insert "in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]"

Page 1, line 10, replace "lighting detection" with "detection lighting"

Page 1, line 11, replace "generators" with "energy conversion facilities"

Page 1, line 12, replace "Any cost associated with" with "The"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Page 1, line 13 after the period insert the following:

The commission shall study the technical and economic feasibility of installing aircraft detection lighting systems on wind energy conversion facilities placed in service before July 1, 2017 and report its findings to the legislature by July 1, 2019.

Renumber accordingly

**With the Proposed Amendment, the bill will read as follows:**

A BILL for an Act to create and enact a new section to chapter 49-22 of the North Century Code, relating to aircraft detection lighting systems on wind energy conversion facilities.

**BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

**Section 1.** A new section to chapter 49-22 of the North Dakota Century Code is created and enacted as follows:

**Aircraft detection lighting system – Rules.**

By December 31, 2021, every wind energy conversion facility placed in service on or after July 1, 2017, and issued a certificate of site compatibility, must be equipped with a functioning aircraft detection lighting system in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]. The commission shall establish rules in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.] relating to the implementation of aircraft detection lighting systems on wind energy conversion facilities which must include service and maintenance requirements, safety standards, and lighting system requirements. The implementation, operation, and maintenance of these systems is the sole responsibility of the wind energy conversion facility owner. The commission shall study the technical and economic feasibility of installing aircraft detection lighting systems on wind energy conversion facilities placed in service before July 1, 2017 and report its findings to the legislature by July 1, 2019.

Feb 1, 2017

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Prepared by Legislative Intern 8  
February 1, 2017

**PROPOSED AMENDMENT TO HOUSE BILL NO. 1378**

Page 1, line 2, replace "lighting detection" with "detection lighting"

Page 1, line 2, replace "generators" with "energy conversion facilities"

Page 1, line 6, replace "lighting detection" with "detection lighting"

Page 1, remove lines 7 through 13 and replace with the following:

A new wind energy conversion facility permitted after July 1, 2017 must be equipped with a functioning aircraft detection lighting system in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]. If an existing wind energy conversion facility lighting system is replaced, it must be equipped with a functioning aircraft detection lighting system in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]. The commission shall establish rules in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.] relating to the implementation of aircraft detection lighting systems on wind energy conversion facilities, including service and maintenance requirements, safety standards, and lighting system requirements. The implementation, operation, and maintenance of these systems is the sole responsibility of the wind energy conversion facility owner.

Renumber accordingly

With the Proposed Amendment, the bill will read as follows:

A BILL for an Act to create and enact a new section to chapter 49-22 of the North Century Code, relating to aircraft detection lighting systems on wind energy conversion facilities.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

**Section 1.** A new section to chapter 49-22 of the North Dakota Century Code is created and enacted as follows:

**Aircraft detection lighting system – Rules.**

A new wind energy conversion facility permitted after July 1, 2017 must be equipped with a functioning aircraft detection lighting system in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]. If an existing wind energy conversion facility lighting system is replaced, it must be equipped with a functioning aircraft detection lighting system in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]. The commission shall establish rules in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.] relating to the implementation of aircraft detection lighting systems on wind energy conversion facilities, including service and maintenance requirements, safety standards, and lighting system requirements. The implementation, operation, and maintenance of these systems is the sole responsibility of the wind energy conversion facility owner.

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## HB 1378 Aircraft Detection Lighting Systems

IBL Committee 3/2/2017

Rep. Daniel Johnston

### Intro

The proliferation of wind farms across North Dakota has been a good thing for our state and economy, but they also come with unintended negative consequences. The constant red flashing lights and the subsequent health and safety issues associated with them. Members of my community have also reported a decline in property value due to wind farm visibility. The negative consequences have necessitated the commonsense safeguards that HB 1378 offers.

### How / Why

This legislation was developed in collaboration with the PSC, by legislatively requiring existing wind farms to retrofit to this technology it will prevent the PSC from pursuing retroactive rules on their own, which is not an optimal approach. Furthermore, the PSC may not require the retrofitting of existing wind farms until at least one project is running and approved by the FAA in North Dakota. Currently, the PSC has issued permits for four wind farm projects with the requirement that they be equipped with the aircraft detection lighting technology (ADLS). It is unknown and doubtful that any of the four farms will be operational by Dec. 2018, which would likely delay a PSC mandate to retrofit barring legislative intervention.

### Is December 2019 a viable timeline

Yes, currently there is an operational FAA approved wind farm that is utilizing this technology. Standards for ADLS technology were introduced by the FAA in December 2015. The radar-activated lighting technology was installed on a recently constructed and commissioned 80MW wind farm in Wyoming; flight tests were successfully conducted and the system went operational in November of 2016.

The results of the Wyoming project were characterized by this statement, "Since we turned the system on in Wyoming, we regularly see nights where the lights are off 99% of the time."

Recently, residents of New England fought the construction of wind farms located 10 miles of the coast claiming irreparable harm would be done to their communities and way of life. Undeterred, and flush with \$40 million in federal grants the wind energy company is pressing forward with the coastal project. In North Dakota, wind farms are almost always much closer than 10 miles to a residence and yet, the communities across ND ask for one thing...peace at night from a distracting red light.

<http://www.businesswire.com/news/home/20170130005096/en/Laufer-Wind-Announces-Operational-Aircraft-Detection-Lighting>

<http://www.pressherald.com/2016/11/01/monhegan-residents-renew-fight-against-off-shore-turbines/>

original

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Pg. 1

**HB 1378**

**Jean Schafer - Basin Electric Power Cooperative, March 2, 2017  
Senate Energy & Natural Resources Committee**

Chairman Unruh and members of the Senate Energy & Natural Resources committee, for the record my name is Jean Schafer, representing Basin Electric Power Cooperative.

Basin Electric is opposed to HB 1378 as currently written. Our main issues revolve around three areas, the specific technology required, the timeline allowed, and the availability of a trained workforce. This legislation would retroactively apply to the PrairieWinds ND 1 project owned by Basin Electric located south of Minot. This project went online in late 2009 and consists of 77 turbines that generate approximately 120 MW of wind energy.

We have concerns related to the fact that this technology is a new application that has very few equipment suppliers and very few actual installations in the United States. Our research has found that there are only two suppliers of this type of equipment in the U.S. and together they only have three systems installed in the U.S. one in Arizona, Colorado, and New Hampshire respectively. We have also contacted GE, the manufacturer of the specific turbines we use at PraireWinds ND, and at this time they have only retrofitted the "Design to Order" Laufer system on these specific turbines on one project in Europe.

Basin Electric is not opposed to investing in lighting mitigation technologies if the landowners in the area of the wind project feel it is necessary and we can install the most feasible, reliable, federally-approved technology available. With only two suppliers and three systems installed in the U.S. we question whether the equipment is readily available, guaranteed to withstand the weather conditions of the upper Midwest, and can be installed on a timely basis.

Furthermore, all of the wind turbines Basin Electric's PrairieWinds 1 wind project are integrated into a system that communicates the status of all operations to a central dispatch center located at our headquarters building in Bismarck. This monitoring system is our "fail safe" mechanism for any lighting anomalies and we know instantly if there is one light that is not working. At this time we do not know how an ADLS system would integrate with the existing control and monitoring system we have in place on our existing project.

Along with the equipment reliability and availability is the time required to make changes to existing facilities. As I stated earlier the FAA has to approve any lighting system on a wind project. That

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same approval and process is required when an existing lighting system is either modified or replaced. That approval is done on a case-by-case basis and takes a minimum of 90-120 days for approval (FAA Information). Further complicating this process is the fact that the PrairieWinds 1 project surrounds a ballistic missile base that includes a helicopter pad, and is within close proximity to the MAFB, therefore changing the lighting system on this project also requires approval from the U.S. Air Force.

Timely installation of new lighting is another concern for us. Currently there are approximately 1,500 wind towers in ND. Approximately 65 percent of those towers have lights installed on them, so there are approximately 1,000 towers that must be modified to implement this legislation. Not only will it be a time-consuming physical task to complete this work on specialized equipment in confined spaces over 200-feet in the air, the modifications cannot be done by a readily available contractor or electrician. The technicians who do this work must be certified on these specific turbines and their availability is unknown. Additionally, Basin Electric requires not just one person, but two people are required to conduct any work on our turbines, especially a retrofit such as this.

Therefore based on our analysis - the time needed to research vendors, determine how to integrate the lighting system with our control system, consult with the Air Force, prepare the FAA application, apply for the FAA lighting change permit, order equipment, install and test the equipment, and achieve full compliance would be a minimum of three years.

Also as written that the three-year clock would not start, as the legislation states starting on line 9, "until the commission has established rules relating to the implementation of the ADLS systems." Development of these rules will require a period of fact finding, hearings and input from all stakeholders including wind generator manufacturers, ADLS manufacturers, wind developers, utilities, and the public.

As I stated earlier, Basin Electric is not opposed to installing lighting mitigation technology on our wind projects as long as the people in the area feel it is needed, we can obtain and install reliable equipment, and get the proper approvals and properly trained people to complete the work safely and efficiently. The investment wouldn't be cost-prohibitive but we do our best to always ensure we are spending our member's money wisely.

John Olson, Lobbyist No. 65  
March 2, 2017

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**PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378**

Page 1, line 2, replace “aircraft detection lighting systems on wind generators” with “light mitigating technology systems on wind energy conversion facilities”

Page 1, line 6, replace “Aircraft detection lighting” with “Light mitigating technology”

Page 1, lines 7 and 8, replace “generator, designed for or capable of wind energy conversion exceeding one-half megawatt of electricity” with “energy conversion facility for which an application for a certificate of site compatibility is filed after July 1, 2017”

Page 1, line 9, replace “aircraft detection lighting” with “light mitigating technology”

Page 1, line 9, replace “rules adopted by the commission” with “Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]”

Page 1, line 10, after “rules” insert “in accordance with Federal Aviation Administration regulations [14 CFR § 1.1 et seq.]”

Page 1, line 10, replace “aircraft detection lighting” with “light mitigating technology”

Page 1, line 11, replace “generators” with “energy conversion facilities”

Page 1, line 12, replace “Any cost associated with” with “The”

Page 1, line 13, replace “a turbine” with “the wind energy conversion facility owner”

Page 1, line 13, after the period insert “The commission shall study the technical and economic feasibility of installing light mitigating technology systems on wind energy conversion facilities for which an application for a certificate of site compatibility is filed on or before July 1, 2017 and report its findings to the legislature by July 1, 2019.”

Renumber accordingly

John Olson, Lobbyist No. 65  
March 2, 2017

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**PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378**

A Bill for an Act to create and enact a new section to chapter 49-22 of the North Dakota Century Code, relating to light mitigating technology systems on wind energy conversion facilities.

**BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

**SECTION 1.** A new section to chapter 49-22 of the North Dakota Century Code is created and enacted as follows:

**Light mitigating technology system – Rules.**

By December 19, 2019, every wind energy conversion facility for which an application for a certificate of site compatibility is filed after July 1, 2017, must be equipped with a functioning light mitigating technology system in accordance with Federal Aviation Administration regulations [14 CFR §1.1 et seq.]. The commission shall establish rules in accordance with Federal Aviation Administration regulations [14 CFR §1.1 et seq.] relating to the implementation of light mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements, safety standards, and lighting system requirements. The implementation, operation, and maintenance of these systems is the sole responsibility of the wind energy conversion facility owner. The commission shall study the technical and economic feasibility of installing light mitigating technology systems on wind energy conversion facilities for which an application for a certificate of site compatibility is filed on or before July 1, 2017 and report its findings to the legislature by July 1, 2019.

Renumber accordingly

Brian Duncan

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March 2, 2017

HB 1378 – Hearing

Testimony from NextEra Energy Resources, LLC (“NextEra”), Brian Duncan, Senior Director, Business Management

Chair Unruh and Senators:

My name is Brian Duncan, and I am a Senior Director with NextEra Energy Resources responsible for managing the commercial operations of our wind projects in the Midwest and North region of the United States, including North Dakota. We value our partnership with North Dakota, which continues to be very important to the success of our company.

Our three most recent wind projects built in 2016 and 2017 (Brady I, Brady II and Oliver III) provide excellent examples of NextEra working with landowners, counties and the State to address concerns and develop successful projects. These projects are now operating and bringing revenue and jobs to their local communities. We are very proud that earlier this week we were named the Corporate Citizen of the Year by the 4-H in Morton County, where we built the Oliver III wind facility that went into operation in January 2017.

I am here today to express NextEra’s general support for HB 1378, as it applies to wind facilities that begin commercial operation after the date of enactment of the proposed legislation. Notably, on the three wind projects we built in 2016 and 2017, NextEra committed to install, subject to approval by the Federal Aviation Administration (“FAA”), radar-activated Aircraft Detection and Lighting Systems (“ADLS”) at the facilities. For these wind facilities, we recommend a more general requirement to use lighting mitigation systems approved by the FAA, instead of specifically requiring “Aircraft Detection Lighting Systems.” Allowing for lighting mitigation systems allows wind projects to use new technologies as they become available in the market. The legislature could implement the more general requirement by granting the Public Service Commission the authority to permit the use of any FAA-approved technologies that, in the Commission’s judgment, satisfies the objective of mitigating the visual impact of aircraft warning lights.

NextEra does not support the retroactive provisions of the bill that require existing wind facilities to install ADLS systems. Before requiring existing wind facilities to be retrofitted with a new technology such as ADLS, the legislature should take the time to carefully study the proposal and strive to avoid unintended and unnecessary negative financial impacts on wind projects and North Dakota electric consumers. The proposed retroactive requirement does not mitigate a public safety concern, but instead may actually create new safety and liability issues.

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pg 2

Before implementing this requirement, the legislature should consider and review the technological challenges and costs to retrofit existing facilities, including: financial impacts on existing facilities, potential safety risks and new liabilities introduced by ADLS, the feasibility of deploying widely ADLS across many wind facilities in the State, and potential FAA limitations. Consistent with its past practice, the legislature should take care to balance the financial impacts on existing businesses while furthering important public interests. This is particularly true in this specific situation, where retroactive application of HB 1378 would require a wind facility that fully complies with safety-related rules to shoulder a significant cost in order to modify aspects of its facilities that do not improve safety.

We expect that the financial impacts on existing businesses will be significant and potentially financially damaging for some wind facilities. Based upon preliminary work, we believe that installation of current ADLS technology at an existing wind facility would cost between \$500,000 and \$1,500,000 (or more) per wind facility, depending upon how many radar units are required for a specific wind facility.

To illustrate the potential impacts of the proposed requirements, I will provide some background on the economics of wind contracts. Wind facilities generally sell power through long-term Power Purchase Agreements ("PPAs"). The PPA is the contract between the wind facility and the energy company that purchases the power for its customers. The pricing in the PPA is typically set for the term of the agreement at either a fixed rate or a rate that escalates at a defined interval, and the cost of ADLS installation cannot be recovered through the PPA.

The wind industry in North Dakota has been highly competitive for many years. PPA rates are competitive and often set through a formal auction. North Dakota energy purchasers require set pricing in PPAs with wind facilities to limit risks and hedge against future electric price increases.

In contrast, regulated utilities or electric cooperatives that own electric generation are able to recover increased operating costs from their customers. For example, if a power plant owned by a utility or electric cooperative is required to install emission reduction equipment, the capital cost and increased operating costs are both passed through to their electric customers. In contrast, when additional costs are imposed on a wind facility that sells power to a regulated utility or electric cooperative, those costs are shouldered by the project and its lenders.

Long-term PPAs, as described above, are necessary to support financing arrangements, which are required to fund a significant portion of the capital required to build wind facilities. Project finance arrangements, which have been widely used in the energy and infrastructure business for many decades, work only when businesses have reasonably predicible cash flows. Significant and unexpected costs, including requiring increased expenditures or potentially increased liabilities, imposed by the government can stress a wind facility's finances. Without a careful and comprehensive study of the potential costs and impacts of HB 1378, the

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pg 3

legislature risks causing significant unintended financial harm to existing wind facilities. This is particularly true for older and smaller wind facilities, or underperforming wind facilities, that may be less able to absorb large unexpected costs.

Further, we are concerned that ADLS systems potentially increase risk to the public. Red flashing lights on wind turbines, communications towers, tall buildings and other structures are intended to alert aircraft of the presence of a structure. Requiring wind facility owners to abandon a proven system, in favor of a system that relies upon radar to activate lights that would otherwise already be turned on, potentially increases safety risks without a compelling benefit to justify the increased risk. This is especially true where the reason for the change appears to be visual concerns and not intended to enhance the overall safety of the operation. We believe the legislature needs to consider these potential risks before adopting the proposed mandate.

NextEra encourages the legislature to continue to support reasonable, fair and predictable energy policy for wind generation, and for the reasons outlined in my testimony, the retroactive application of this bill is not in line with that policy absent a careful study of HB 1378's potential impacts and benefits. Thus, NextEra urges the committee to:

- 1) Amend HB 1378 so that it only applies prospectively and specifically authorizes the Public Service Commission to permit other technologies and solutions that achieve the same objective, and
- 2) Carefully study the impacts of retroactive application to existing wind facilities.

Background on NextEra

NextEra currently owns 14 operating wind farms in North Dakota, including three that began operations in late 2016 and early 2017. We have been doing business in North Dakota for over a decade investing in wind and oil and gas. Our wind farms represent a capital investment of over \$2.4 billion. We employ over 75 full-time employees, spend approximately \$8.5 million in annual payroll, \$3.0 million annually in property taxes and \$6.5 million annually in lease payments to local landowners in the state.

STATE OF NORTH DAKOTA

HB 1378

COMMENTS OF DRAKE LIGHTING INC.

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My name is David Shepard, president of Drake Lighting Inc. the US distributor for Technostrobe, Inc. We provide aviation obstruction lighting equipment on wind farms across the US. I am here today as a resource to the committee regarding current and future regulations of obstruction lighting equipment. I have with me a lighting unit that we can turn on if anyone wants to see it. I also have several slides that we can use to better visualize the two main light mitigating technologies on the market today.

The current bill before the Senate has language that is restrictive to only one light mitigating technology. The Aircraft Detection Lighting System – ADLS this technology was the first non-standard light mitigating technology approved for use in the US but it is by no means the last one to come.

The ADLS system is a technology that does in fact turn the light systems off but should not be considered as a 100% off solution. Since the lights are in an off state this means they must be ready to turn on at a moments notice. A typical ADLS system should offer between 80-90% of off time or stand-by mode. This will vary depending on how close the facility is to flight paths and the sensitivity of the radar equipment.

It is more likely for the community to see the lights on during normal hours of activity or just after dark and just before dawn. Communities surrounding the wind facility are more likely to see light on while they are awake not when they are asleep. This can tend to give the community a false hope of the lights always being off. When in fact during the times they are awake an more likely to see the lights this is also the time pilots are more likely to be flying.

It is also note worthy to understand when the lighting equipment is turned on it will be at 100% intensity. If for any reason communication is loss to either the radar units or the lighting equipment the entire farm will go into the default mode of operation. The default status of the lighting equipment is to be on and at 100% intensity.

In this new rule it indicates that an Aircraft Detection Lighting System should be installed on every turbine. This wording should be reconsidered since it's reflecting something that is not part of the FAA standards. A typical wind farm will have an aircraft obstruction light on between 50-70% of the turbines. The Aircraft Detection Lighting System is a network of radar units linked to these obstruction lights through the underground SCADA network. A central processing unit then instructs an obstruction light control unit to put the lights into a stand by mode. The current wording indicates one of these ADLS units and another light would be required on every turbine. I am sure this is not the intent of this bill and it would be wise to address this now.

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The final note regarding ADLS is several factors go into the determination of the use of an ADLS on a wind farm. If the wind farm were near a military training facility, near a civil airport, in the path of low flight routes, or the path of frequently used flight paths this light mitigating technology would not be allowed. In those cases the FAA would not approve this system.

As an alternative to ADLS light mitigating technology we are in the final stages of a new technology called LIDS or Light Intensity Dimming Solution. This technology does not focus on aircraft but on the visibility of the wind farm.

Lights are designed by the FAA to be bright enough to penetrate the very worse flight conditions. Our research has determined 85% of the time the lights are at least 10 times brighter than is required to offer safe avoidance distances to pilots. Our LIDS technology uses visibility sensors around the farm and directs the lighting equipment to dim when the visibility is good. As visibility worsens we increase the light intensity.

An advantage of dimming over turning on and off is the community around the farm sees the lowest possible light output from dusk to dawn. As the visibility worsens the community would not notice the increase in light output since they too are in the same low visibility. To the community the lights on the wind farm will be significantly dimmer.

Drake Lighting would propose that the words Aircraft Detection Lighting System be replaced with Light Mitigating Equipment. This will allow the commission flexibility to use not only LIDS technology but also newer technology as it becomes available.

Drake Lighting would propose the following wording be considered.

By December 31, 2019, every wind generating facility, designed for or capable of wind energy conversion exceeding one - half megawatt of electricity, must be equipped with a functioning light mitigating technology equipment in accordance with rules adopted by the commission. The commission shall establish rules relating to the implementation of the light mitigating technology equipment on wind generating facilities, which must include service and maintenance requirements, safety standards, and lighting system requirements. Any cost associated with implementation, operation, and maintenance of these systems is the sole responsibility of a turbine owner

With this new wording the intent of the rule is not changed but clarifies the use of light mitigating technology. In cases where developers find themselves not able to achieve FAA approval due to time restraints or economical reasons the commission could consider other light mitigating solutions and allow for extra time if needed to install these technologies.

original

*For  
email*

*HB 1378  
3/2/17  
Attach #7  
p87*

**HB1378 Regarding Aircraft Detection Lighting Systems  
Committee 3/2/2017  
Testimony: Alison Grotberg, Wimbledon, ND**

**Chairman and Members of the Committee,**

**Intro** — With this bill we are asking the North Dakota legislature to grant North Dakota citizens relief.

Wind farm projects have exploded across the countryside in North Dakota, and citizens are getting very weary of them. Although there are many, many very reasonable complaints surrounding the existence of wind farms, the fastest complaint to rise to most people's lips is "those lights!"

**Examples** — I could give you example after example of people from all across the state troubled by the proliferation of untiring red blinking lights polluting our beautiful prairie night skies.

**On our farm** alone, when we look to the northeast we can see red blinking lights 20 miles away. To our northwest, the southern edge of the newly developed Courtney Wind Farm is only 8 miles away and has a dreadfully energetic line-up of blinking red lights. From our bedroom window we can see twelve of them. Now, the same developer of the Courtney Wind Farm is trying to develop another farm with a northeastern edge 1 mile from our house. Just over ten miles to our southeast residents are being approached with wind easement contracts near Sanborn. We are surrounded, and the invasion is very real and unwanted. Wind towers change the very nature of a location. The peaceful, rural place you once called home and built your dreams becomes a metallic jungle of giants always demanding the service of your eyes from flailing paddles in near-constant motion, to stalwart posts that never go away crowding the horizon, to constant red blinking lights in your bedroom window, your kitchen, your living room. **There is no peace and no relief from their presence. When you are farmers, they are there where you live, work, and play. Rural residents like us are desperate for relief!**

**Carrington** — Recently, I drove home from Carrington in the dark. I watched the blinking red lights of the Courtney Wind Farm for 50 minutes. Every few seconds they were here, every few seconds they were there and as the road wound one way and then another; it was disorienting. It was distracting. My peripheral vision was constantly being pulled off the road first this way and then that. I felt exhausted as I drove. When I finally broke past the edge of the wind farm, relief flowed over me and for the first time on my trip, I felt able to fully focus on the road. My thirteen year old daughter was with me. When the last blinking red light was out of sight, even she said, "Oh good, now we can finally relax."

**This bill is intended to bring relief to residents of North Dakota who live within view of wind farms and the visual pollution they produce every night.**

*original*

HB1378  
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pg 2/7

**PSC** is now already requiring newly developed wind farms to have aircraft detection lighting systems.

We applaud the Public Service Commission for recognizing the disturbing, discouraging, and disorienting effect of night-sky pollution in our state created by wind farms and in so doing requiring all newly developed wind farms to install aircraft detection lighting systems. These systems use radar to determine when aircraft is within the vicinity of a wind farm as defined by the FAA. At that point, the lights on the turbines turn on to warn them; otherwise, mercifully, the red blinking lights stay off.

**We are simply asking the legislature to put the very same requirement to install aircraft detection lighting systems on existing wind farms that the new wind farms are now being required, by the PSC, to install. Please provide relief to those living near wind farms.**

**North Dakota Welcome Mat** —For several years, North Dakota has been a welcome mat to Wind Energy. As a result, its citizens have become a door mat and have borne the brunt of some very unpleasant realities, the constantly blinking red lights are arguably at the top of that list. It is time wind energy takes responsibility for the visual pollution it has proliferated across North Dakota. It's time they thank North Dakotans for the welcome mat they have received. Please help restore the beauty of the prairie night sky and provide relief to your fellow citizens who live near wind farms by supporting this bill. December 2019 is almost three years away. Please remember that every extension of time you allow for implementation of this requirement are days, weeks, and months that your fellow North Dakotans will experience the distraction, disorientation, and discouragement of dozens of red blinking lights in their night skies.

**No Losers with this Bill** — There are no losers with this legislation: citizens will gain respite from a huge night-sky nuisance and pollution; attitudes toward wind farms will improve; the legislature will be viewed as proactive and responsive to an increasing problem on the minds of North Dakotans. The wind farm lobby wants to maintain their current free range status quo, but your fellow citizens and constituents, who just want to live peaceful lives, need relief. You can help deliver it to them!

Thank you for your service as legislators, your time, and for considering this bill.

HB1378 Regarding Aircraft Detection Lighting Systems  
Industry, Business, and Labor Committee 1/23/17  
Testimony: Alison Grotberg, Wimbledon, ND  
agrotberg@gmail.com

original

March 10, 2017

HB 1378  
3-23-17  
AH #1  
p81

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378

Page 1, line 2, replace "aircraft detection lighting systems on wind generators" with "light mitigating technology systems on wind energy conversion facilities; and to require a public service commission study and report to legislative management"

Page 1, line 6, replace "**Aircraft detection lighting**" with "**Light mitigating technology**"

Page 1, line 7, remove "generator, designed for or capable of wind energy"

Page 1, line 8, replace "conversion exceeding one-half megawatt of electricity" with "energy conversion facility for which an application for a certificate of site compatibility is filed after July 1, 2017"

Page 1, line 9, replace "aircraft detection lighting" with "light mitigating technology"

Page 1, line 9, replace "rules adopted by the commission" with "federal aviation administration regulations [14 CFR 1.1 et seq.]"

Page 1, line 10, after "rules" insert "in accordance with the federal aviation administration regulations [14 CFR 1.1 et seq.]"

Page 1, line 10, replace "aircraft detection lighting" with "light mitigating technology"

Page 1, line 11, replace "generators" with "energy conversion facilities"

Page 1, line 12, replace "Any cost associated with" with "The"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Page 1, after line 13, insert:

**"SECTION 2. PUBLIC SERVICE COMMISSION STUDY AND REPORT TO LEGISLATIVE MANAGEMENT.** During the 2017-18 interim, the public service commission shall study the technical and economical feasibility of installing light mitigating technology systems on wind energy conversion facilities for which an application for a certificate of site compatibility is filed on or before July 1, 2017, and report its findings and recommendations, together with any legislation required to implement the recommendations, to the legislative management by July 1, 2019."

Renumber accordingly

HB 1378  
3-23-17

Sixty-fifth  
Legislative Assembly  
of North Dakota

AH 2  
P81

Introduced by

Representatives Johnston, Headland, Kiefert, Simons

Senator Clemens

1 A BILL for an Act to create and enact a new section to chapter 49-22 of the North Dakota  
2 Century Code, relating to ~~aircraft detection lighting systems on wind generators~~ light mitigating  
3 technology systems on wind energy conversion facilities; and to require a public service  
4 commission study and report to legislative management.

5 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

6 **SECTION 1.** A new section to chapter 49-22 of the North Dakota Century Code is created  
7 and enacted as follows:

8 **Aircraft detection lightingLight mitigating technology system - Rules.**

9 By December 31, 2019, every wind ~~generator, designed for or capable of wind energy~~  
10 conversion exceeding one-half megawatt of electricityenergy conversion facility for which an  
11 application for a certificate of site compatibility is filed after July 1, 2017, must be equipped with  
12 a functioning aircraft detection lightinglight mitigating technology system in accordance with  
13 rules adopted by the commissionfederal aviation administration regulations [14 CFR 1.1 et  
14 seq.]. The commission shall establish rules in accordance with the federal aviation  
15 administration regulations [14 CFR 1.1 et seq.] relating to the implementation of aircraft  
16 detection lightinglight mitigating technology systems on wind ~~generators~~energy conversion  
17 facilities which must include service and maintenance requirements, safety standards, and  
18 lighting system requirements. Any cost associated withThe implementation, operation, and  
19 maintenance of these systems is the sole responsibility of a turbinethe wind energy conversion  
20 facility owner.

21 **SECTION 2. PUBLIC SERVICE COMMISSION STUDY AND REPORT TO LEGISLATIVE**

22 **MANAGEMENT.** During the 2017-18 interim, the public service commission shall study the  
23 technical and economical feasibility of installing light mitigating technology systems on wind  
24 energy conversion facilities for which an application for a certificate of site compatibility is filed

AD 1378  
3-23-17  
AH #2  
PS 2

- 1 on or before July 1, 2017, and report its findings and recommendations, together with any
- 2 legislation required to implement the recommendations, to the legislative management by
- 3 July 1, 2019.

March 30, 2017

3-30-17  
AH #1  
p81

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378

Page 1, line 2, replace "aircraft detection lighting systems on wind generators" with "light mitigating technology systems on wind energy conversion facilities"

Page 1, line 6, replace "**Aircraft detection lighting**" with "**Light mitigating technology**"

Page 1, after line 6 insert:

"1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].

2."

Page 1, line 7, remove "generator, designed for or capable of wind energy"

Page 1, remove line 8

Page 1, line 9, replace "aircraft detection lighting system in accordance" with "energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light mitigating technology system that complies"

Page 1, line 9, remove "The"

Page 1, remove lines 10 and 11

Page 1, line 12, replace "standards, and lighting system requirements." with:

"3. The commission shall require the installation of light mitigating technology systems that comply with rules adopted by the commission as soon as technically feasible and if economically feasible for wind energy conversion facilities for which a certificate of site compatibility was issued before June 5, 2016.

4."

Page 1, line 12, replace "cost" with "costs"

Page 1, line 12, after "with" insert "the"

Page 1, line 13, replace "these systems" with "light mitigating technology systems"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Re-number accordingly

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1378

Page 1, line 2, replace "aircraft detection lighting systems on wind generators" with "light mitigating technology systems on wind energy conversion facilities"

Page 1, line 6, replace "**Aircraft detection lighting**" with "**Light-mitigating technology**"

Page 1, after line 6 insert:

"1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light-mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].

2."

Page 1, line 7, remove "generator, designed for or capable of wind energy"

Page 1, remove line 8

Page 1, line 9, replace "aircraft detection lighting system in accordance" with "energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light-mitigating technology system that complies"

Page 1, line 9, remove "The"

Page 1, remove lines 10 and 11

Page 1, line 12, replace "standards, and lighting system requirements." with:

" 3. By December 31, 2021, every wind energy conversion facility for which the commission issued a certificate of site compatibility before June 5, 2016, must be equipped with a functioning light-mitigating technology system that complies with rules adopted by the commission unless the commission finds the installation is not technically or economically feasible.

4."

Page 1, line 12, replace "cost" with "costs"

Page 1, line 12, after "with" insert "the"

Page 1, line 13, replace "these systems" with "light-mitigating technology systems"

Page 1, line 13, replace "a turbine" with "the wind energy conversion facility"

Renumber accordingly

Apr 17, 2017

HB 1378

1

**SECTION 1.** A new section to chapter 49-22 of the North Dakota Century Code is created and enacted as follows:

**Light - mitigating technology system - Rules.**

1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light - mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].
2. By December 31, 2019, every wind energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light - mitigating technology system that complies with rules adopted by the commission.
- ~~3. The commission shall require the installation of light - mitigating technology systems that comply with rules adopted by the commission as soon as technically feasible and if economically feasible for wind energy conversion facilities for which a certificate of site compatibility was issued before June 5, 2016.~~
3. By December 31, 2021, every wind energy conversion facility for which the commission issued a certificate of site compatibility before June 5, 2016, must be equipped with a functioning light - mitigation technology system that complies with rules adopted by the commission. The commission may grant an extension of time based upon technical or economic feasibility considerations
4. Any costs associated with the implementation, operation, and maintenance of light - mitigating technology systems is the sole responsibility of the wind energy conversion facility owner.

Apr 18, 2017

HB 1378

1

**SECTION 1.** A new section to chapter 49-22 of the North Dakota Century Code is created and enacted as follows:

**Light - mitigating technology system - Rules.**

1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light - mitigating technology systems on wind energy conversion facilities which must include service and maintenance requirements and safety standards and lighting system requirements, and which are consistent with the federal aviation administration regulations [14 CFR 1.1 et seq.].
2. By December 31, 2019, every wind energy conversion facility for which the commission issued a certificate of site compatibility after June 5, 2016, must be equipped with a functioning light - mitigating technology system that complies with rules adopted by the commission.
- ~~3. The commission shall require the installation of light - mitigating technology systems that comply with rules adopted by the commission as soon as technically feasible and if economically feasible for wind energy conversion facilities for which a certificate of site compatibility was issued before June 5, 2016.~~
3. By December 31, 2021, every wind energy conversion facility for which the commission issued a certificate of site compatibility before June 5, 2016, must be equipped with a functioning light - mitigation technology system that complies with rules adopted by the commission. The commission may grant an extension of time, after public hearing, based upon technical or economic feasibility considerations.
4. Any costs associated with the implementation, operation, and maintenance of light - mitigating technology systems is the sole responsibility of the wind energy conversion facility owner.

Apr 18, 2017

HB 1378

2

Subsection 1 will now read as follows:

1. The commission shall adopt rules by January 1, 2019, relating to the implementation of light-mitigating technology systems on wind energy conversion facilities. The rules must be consistent with the federal aviation administration regulations [ 14 CFR 1.1 et seq.] and must include service and maintenance requirements and safety standards and lighting system requirements.