

Brady Deaton: Welcome to FARE-Talk where we set out to provide enduring discussions on contemporary topics relevant to our economy, with particular emphasis on food, agriculture, and the environment. My name is Brady Deaton Jr. of the Department of food, agriculture, and resource economics at the University of Guelph. I'll be your host.

Today is November 20th, 2018, and my special guest on FARE-Talk today is Professor Richard Vyn, and the Department of Food, Agriculture and Resource Economics at the University of Guelph. Professor Vyn has spoken on FARE-Talk before. He is one of North America's foremost experts on wind turbines and their effects on surrounding property values, and that is what he's going to be speaking to us today about.

This is a very special podcast in the sense that it's being recorded live in the class, a land economics class at the University of Guelph, and after Richard speaks for a moment, I'll turn over the questions to the class, and that's how the podcast will be conducted. Richard has just published a very interesting and important article in land economics, and a link to that paper will be made available to you and that will be the subject of this podcast. Richard, welcome to FARE-Talk.

Richard Vyn: Thanks a lot. Brady.

Brady Deaton: Rich, if you could just to get the ball rolling, give us kind of the elevator speech of what the recent article that you wrote is about.

Richard Vyn: Sure. Yeah. So, I have been interested in doing research on the impacts of wind turbines on property values. I've done a couple of prior studies, smaller studies here in Ontario. And over the past number of years, this issue has really taken on a life of its own with the controversy that has raged across the province regarding the whole issue of wind energy development.

And there's a number of issues that have arisen as a result of the expansion of this industry. One of those in particular is the impact on property values. And prior to my study, there hadn't been a comprehensive study done on the impacts that wind turbines have had on property values. And I felt this was necessary just because of the attention that this issue has received.

There had been a couple of very small studies, there's been a lot of conjecture, but what the impacts are in this province. I wanted to address this issue head on, and I was fortunate enough to have a very great database, have rural residential property sales that I could use to try and tease out the impacts that nearby turbines have had on these property values.

And so, I looked at all of southwestern Ontario where the wind energy developments in the province has been concentrated, and was able to identify distances between each of the properties and the nearest wind turbine. And

what I found was that there have the negative impacts on property values in Ontario.

Part of the reason for doing this research also is that, when you look to studies that have been done in other jurisdictions, there isn't really a consensus in terms of what the impacts of wind turbines have been. In some studies, they have found negative impacts, and in others they have not. And that has led me to believe that whether or not impacts occur has more to do with the context of each situation.

And so that may be the reason why we have not seen a consistent results across a number of jurisdictions. So, I wanted to explore what factors may contribute to, you know, to being able to see impacts occur in some areas but not in others. And Ontario was kind of a prime example from which to examine this issue. And as I discussed in the paper, there's two types of municipalities that have emerged here in Ontario.

There's those that have declared themselves to be unwilling hosts where they don't want wind energy development to occur in their municipality. And there's those that have appeared to remain unopposed to wind energy development. And so, I was curious as to whether the differences in attitudes between these two types of municipalities may have contributed to the difference in impacts that have been observed across prior studies.

And that is exactly what I've found were in unwilling host municipalities, there were very significant and large impacts on property values, while in the unopposed municipalities, I didn't find any evidence of significant impacts on property values. So, that's kind of the overview of what my study looked at. And I feel like this study has sort of helped to address for one, the controversy that we've had in Ontario.

So, it's evident that there's certainly have been impacts on property values. And, I think this is the first study that's kind of looked more broadly all across Ontario instead of that one specific wind farm at one particular point in time. And I think maybe it also explains some of the varied results that we've seen in previous studies. So, before I get started on questions, I have a question for you. Do any of you come from areas where we've had wind turbines, and if so, what has been your experience?

Raven:

My name is Raven. [inaudible 00:05:47] to speak to you today. So, I'm from Windsor Essex. There's been a lot of development I think in like Essex, but [inaudible 00:05:54] in Chatham Kent. So driving up to Toronto, I've seen them a lot. I personally never had any negative opinions on them. Sometimes they cause some traffic when they are building them.

Richard Vyn:

Yeah. Okay. Anybody else from areas close to wind turbine? All right. Yeah, I was just curious. Sometimes it helps to talk to people who are, you know, right

there where the turbines are being developed. I think that's one area that sort of led to this controversy in Ontario, is that we were trying to develop alternative energy sources, but, it has varied impacts or distribution of impacts on those that might be close by to where the energy is being developed versus those that are at greater distances. So, that can lead to a bit of conflict as well. But anyways, let's carry on with some of the questions.

Jaden: Hi Professor Vyn. My name is Jaden. I'm very excited to have you here today to learn about your perspective on the research that you've been doing. And my question for you is how has the literature changed since you first began your research on the relationship between wind turbines and property values in Ontario?

Richard Vyn: Right. So, yes, there's been a fair bit of research done over the past eight or 10 years. And some of the earlier studies were done with a ... They looked at a generally smaller areas where wind turbines have been developed, and a lot of the earlier studies were based on data sets that didn't have a lot of properties that were in close proximity to turbines.

So, that that can complicate trying to tease out the effects of wind turbines on property values, but that was kind of how things were early on. So that was when we're just starting to try and get a sense as to whether impacts have occurred. A number of studies also kind of looked at what people's opinions were of turbines, and whether there was some willingness to pay to have turbines cited further away from them, and kind of using those types of studies to determine whether turbines have had impacts on property values.

So that's sort of an indirect way to determine whether the turbines have impacted property values. But in more recent years, we've seen a number of studies that have been based on very large data sets with quite a few observations that are in close proximity to the turbines. And so that helps to generate more robust estimates of impacts on property values.

So we've seen also different ways to account for the impact. It's a little bit tricky sometimes to determine how exactly do you determine whether there's been an impact on property values? How do you account for that impact? And a lot of studies have based this on proximity to turbine, just given the visual effect of turbines and how that visual effect will diminish with distance.

More recently, some studies have used digital elevation tools to try and create an idea of what the view shed actually is. So whether ... when you go out in the countryside there, you may have a turbine that's close by, but there may be landscape features that block that view, whether it's trees or anything like that, hills and so on.

So they use digital elevation tools to try and figure out, is this turbine actually visible from a specific property? So, the literature's certainly developed there,

gotten better ways to try and estimate the impacts on property values. But interestingly, one thing that has not changed has been the lack of consensus among these studies.

So, even with studies that have a much larger data sets, more advanced tools to assess the impacts, we still have results for some studies that have found impacts on property values and others that have not found impacts.

Zara: Hi Professor Vyn. My name Zara Mahmoudi. Thank you for being here today. The media coverage of wind turbines seems primarily focused on potential negative impacts. For example, we watched a documentary, Big wind, that some of us felt was primarily focused on the negative impacts of wind turbines. Do you think this kind of media coverage influences public perceptions of wind turbines and in turn influences the effect of wind turbines on property values?

Richard Vyn: Yes. I think the media coverage is definitely going to have some type of influence, and I think we've definitely seen a lot of media coverage in Ontario just given the controversy that ensued following the proposal and the construction of all these wind farms. And so yes, I think there certainly has been an influence from the media.

Now I'm not saying that in a way to try and suggest that the media has had undue influence or that they have contributed to the issue here, because they're merely reporting stories that are of interest, stories that are of concern to quite a few people. So, I think in a lot of these communities where wind farms were being proposed and ultimately constructed, there were a lot of people that were upset about that and had concerns.

And so, the media, especially the local media outlets were printing a lot of stories about the concerns that these people had, and rightly so. But yes, there were so many stories on it that I think it would be hard not to be aware of those, and eventually at some point, if you read a story enough times or hear the same story over and over again, you may start to believe it more so than perhaps you did.

So yes, I think there has been an impact, but I don't want to suggest that the media went too far with this. Definitely not. They're doing their job in reporting what's happening in their communities. But I do think that it does have an impact and there has been a number of studies that have demonstrated that yes, media reports can influence people's perceptions, specifically of wind turbines and their impacts.

Speaker 5: Hello Professor Vyn, and thank you for coming and speaking with us today. Your paper is first to empirically assess the effect of wind turbines on property values aligned for the effect to vary depending on whether municipalities to find themselves as willing or unwilling hosts. What made you decide to consider the willing or unwilling characterization in your research?

Richard Vyn:

Well, after looking at the existing studies where we've seen varied results, it's evident that there must be something that's contributing to the lack of consensus here. And from reading some of the studies on how people view turbines, it's evident that some people really don't like them, don't like how they look and are concerned about their impacts, and others actually do like how they look.

And so, that made me wonder whether the differences in people's perceptions of turbines would contribute to differences in the impacts. Now it's a little difficult to try and tease out that effect in general just because surveys that have been done on people's perceptions, they're looking at individuals, not at everybody within a certain area.

But just how things went here in Ontario when you started to get some municipalities that were obviously a very large proportion of their residents were against wind energy development and as such, ended up declaring themselves to be unwilling hosts. But yet you still had other municipalities that really didn't seem to go down that road and it didn't seem to mind it, that sort of suggested that there were enough people in those other municipalities that we're not opposed.

And so, I kind of used those two types of municipalities as a way to kind of serve as a proxy for differences in perceptions of turbines and in attitudes toward turbines.

Speaker 6:

Hi Professor Vyn. Thank you for being here with us today. So, I wanted to start by mentioning a very interesting statistic that you mentioned in your paper. So you write that in Ontario there were only 10 turbines in 2003, but that this increased to 2,300 by 2015. So that's a pretty big increase that you mentioned is in part due to the 2009 Green Energy Act, promoting clean energy and growing the green sector. So how has this legislation influence public perception of wind turbines, and what implications might this have?

Richard Vyn:

Well, I think when that legislation was passed, I mean the main emphasis there was to try and develop alternative and renewable sources of energy given some of the concerns, particularly environmental concerns related to existing sources of energy. And so, in the face of it, I think that that sounds like an appropriate path to take. You have to try and find ways to increase the amount of energy that's produced from renewable sources.

I think where the government got themselves into a bit of trouble with this legislation was sort of how they went about expanding the wind energy industry. So, I think that the legislation itself wasn't necessarily the issue, but what happened is, because the government is so focused on trying to expand wind energy and solar and others, they took steps to do whatever they could to increase the wind energy industry.

And that also involved taking away the decision making ability of the municipalities regarding whether or not wind energy facilities were cited within their jurisdictions. And that's where I think the legislation started to perhaps have an impact on people's perceptions was sort of the mechanism through which the wind energy development actually occurred.

So, I explained a little bit of this in the paper where the provincial governments could allow for wind energy development to occur, even if the municipality was completely against it. And of course, you can imagine that if you're in that municipality and you've decided as your municipality, you don't want to have wind energy developmental occurring there, but then the provincial government comes in and overrules your decision, that's probably going to cause some hard feelings.

And you know, I think that came out in sort of how people viewed wind energy as a result. Whereas, when you look at a couple of the wind farms that were put up earlier on prior to the Green Energy Act, in those cases, the municipalities themselves chose to go ahead with wind energy development. So you didn't run into the same issues there. And I think it seems in some of those cases, there are more people that are in favor of wind energy in those municipalities, and you didn't hear as much about the negative perceptions of wind turbines.

Sarah: Hi Professor Vyn, I'm Sarah. In your paper, you noted that municipalities that are opposed or unopposed to wind turbines are not opposed or unopposed absolutely. The label represent the general opinions regarding wind turbines in that municipality. With that in mind, did you find consistencies in municipalities that were labeled as opposed or unopposed to wind turbine projects?

Richard Vyn: I take it to mean you're looking at whether there's similarities among municipalities that declared themselves as unwilling hosts, is that-

Sarah: Yes.

Richard Vyn: I think there are some, like it seemed that a lot of municipalities that did declare themselves unwilling host for those where ... there were proposed projects, or perhaps even just talk a proposed projects. But on the other hand, there were also some municipalities that did not declare themselves as unwilling hosts where there were also some wind facilities developed as well. So, it's a little hard to say, and it's actually something I'd like to look into a little bit more to see whether there's some, yeah, some factors that you see that are specific to some of the unwilling host municipalities.

Like are there some demographic factors that would make a municipality more likely to be an unwilling host or is it kind of the process that occurred with respect to the wind energy developments in that municipality that would, you know ... are there some similarities across the unwilling host? So, it's hard to say exactly. It's certainly not the case that the unwilling host municipalities are

those that have had wind energy developmental occur there, and those that are unopposed municipalities that are unopposed have not had wind energy farm.

That's not the case. But I am curious about whether there are some other factors that are similar across unwilling hosts municipalities, and I do hope to take a look at that in the future.

Morgan:

Hi Dr. Vyn. Thank you for being with us today. My name's Morgan. I'm a fourth year environmental sciences student. I'd like to turn the discussion towards the data and methods in your most recent study. The analysis on your paper uses open market sale data from the municipal property assessment corporation between 2002 to 2013. Could you provide some insight into why you also chose to include the three temporal variables of pre turbine announcement, post turbine announcement, and post-construction in your analysis?

Richard Vyn:

Yes. Trying to appropriately account for a turbine impacts is a little bit tricky just because it's not like one day they're all there and now they're starting to have an impact. And so, that's been sort of the challenge for a number of studies that have been done on this issue is trying to determine at what point would you expect the impacts to start to occur?

With the wind energy development process, it goes through a number of stages from either when they first decide to put up a wind energy facility to when you can actually see the physical structures. So obviously, we would expect that once the turbines are up, that that's when you would expect impacts to occur. But there's that whole process leading up to when they're physically constructed that during which period you may also find that there are some impacts.

Because, when the process is ongoing, you know there's going to be access roads that are put in, there are going to be putting in the foundation. So, the process can take a few months, and they may also be doing some prior work, some environmental assessments, and communities at some point do become aware of the fact that there may be a wind farm that's going to be constructed there.

And so, somewhere in that process, we could start to see some impacts occurring. On the other hand, we wouldn't expect any impacts to occur prior to a public announcement of a wind farm being put in place. So, that's why I kind of have divided the time period up into three. So we have the pre-announcement period. So prior to any public knowledge about a wind farm being constructed.

So, in that period, you certainly wouldn't expect there to be any impacts. Then there's the post construction period, and that's after the turbines have been constructed and you would expect that if impacts are going to occur, you would certainly see them occurring in that period. And then we kind of have this in

between period. So it's kind of the post announcement and pre construction period.

So, everything that happens following the announcement of the wind farm all the way up to the construction period. And during that time period, you may start to see some impacts. And so, looking at some studies that have been done, some have found impacts during this announcement period and others haven't. In the case of my study, I did find that there were impacts occurring during this intermediate period.

And I think because people in the area become aware that there are going to be turbines there, the locations become available, people know where they're going to be even if they're not physically there yet. And so, that can start to have an impact then on the property values.

Speaker 9:

Hi Professor Vyn. Typically, it's common practice for economics to empirically assess the impact of wind turbines on property values by determining the effect that proximity to wind turbines has on the sales prices of nearby residential properties. So in your model, you also include variables involving turbine density, distance from the nearest turbine as well as time period, control, and contextual variables. In addition, in your paper, you use a difference in differences method. We were hoping you could explain this approach further and how it adds benefit to the analysis.

Richard Vyn:

Right? Yes. So, for doing these studies there are some approaches that are used at ... so you know, they can be a little bit difficult to explain for those who haven't used them before. So essentially, what I'm trying to do is to figure out whether being close to a turbine has an impact on the property value. Now you could look at, well, you know, before the turbine was put up, your house was worth this amount, and then after the turbine was put up, well now properties in this area are worth, five percent more.

So, does that mean that the turbine cause a property value to go up? Well, not necessarily because there's other factors that that occur in between. So, when you're looking at trying to tease out an effect, what you want to do is to compare any price changes that have occurred in an area where turbines might impact property values to an area where there are no turbines.

Okay? So in this example I say that, well, from period before the turbine went up until the period after the turbine went up, property values went up by five percent. But in areas where no turbines went up, property values went up 10%. So this difference in differences looks at comparing the change in value in areas where you would expect to see turbine impacts to changes in value that occur in areas where you don't expect to see turbine impacts.

So, you're not looking at specifically whether the values have gone up in a particular area, but the relative change in values. So, in areas we find that



property values in areas close to turbines have gone up by five percent, but property values in areas that are not anywhere near turbines have gone up by 10%, then we're looking at the relative difference there.

So, suggest that the increase in value that occurred in the control area where there are no turbines is greater than the increase in the treatment area or the area where turbines have been constructed. And so, that's kind of what we're looking at. And if there is a bigger change in value or bigger increase in value in areas without turbines, then we kind of take that to mean that the turbines have kind of ...

It's not that they've necessarily reduced the value, it's just that they've reduced the value relative to what it could have been if the turbine wasn't put up. Okay? So that's kind of what the difference in differences refers to. So, it's the difference in the change in values that occur in a control area with no turbines compared to the change in value that occurs in an area with turbines.

Now, it's also important to account for a wide variety of factors that affect property values in general. So you know, if you look at, for example, one area close to turbines where property values are ... it seemed to be higher than in another area, or relative to a house in an area further away, that doesn't mean that turbines have positively impacted the value of this house close by because maybe there's some differences in other factors.

So, you want to account for factors that generally impact the value of houses such as square footage, whether there's a pool, whether there's fireplace, a whole number of factors that are going to contribute to the value. So, after accounting for all these other factors that account for houses value, then you can compare.

So what happens, what about this attribute of being close to a turbine, how does that impact the value? So, without going into the specifics of how to run these models, that's essentially what you're trying to look at.

Connor:

Hi Professor Vyn. My name's Connor. I'm a fourth year environmental economics and policy student here at the university. So now I'd like to sort of open the discussion to the results of your recent study. So in your paper, I noticed that your sample size of observations for analysis and unopposed municipalities is much less than the observations for opposed municipalities. So why is that? Is it simply that there are far more municipalities that are generally unopposed to wind turbines, or is there another sort of reason behind this?

Richard Vyn:

Yeah, in terms of the municipalities that are included in the data set, there were a lot more that declared themselves to be unwilling hosts versus those that were unopposed. So as a result, there were more observations in municipalities that were unwilling host compared to the unopposed municipalities. So that's kind of why we see a big difference in the sample size there.

Tim: Hello? Professor Vyn. My name is Tim. Thanks for coming into class today. In your paper, information from wind concerns, Ontario, was used to classify a municipality as either opposed or unopposed to the construction of wind turbines. How would you interpret the economic and statistical differences that were found when comparing the effect of wind turbines on property values in opposed and unopposed municipalities?

Richard Vyn: Yeah. So, what was the model that I used was trying to do is to first determine whether there's a statistically significant impact of being close to a wind turbine. And I did find that to be the case for properties in the unwilling hosts municipalities or in the opposed municipalities, but did not find that to be the case in the unopposed municipalities.

So, you draw the distinction in your question between the economic and the significance of the impacts. And so, just because you find a statistically significant impact, you also want to look at, well, is that impact actually economically relevant? So, if you find a statistically significant impact that's only one to two percent, that's not really a big impact that you would have on our property value.

And sure, while it may be statistically significant, it's not really having much of an impact on the market itself. But in the case of my study where I looked at the impacts specifically for the unwilling host municipalities, the impact range more from about five so just over nine percent depending on how close you were to the turbine.

And so, when you get up over nine percent, that starts to be a fairly economically relevant impact. So, if you lose nine percent off the value of your property, I think it starts to raise some concerns among property owners.

Speaker 12: Hi Professor Vyn. I'd like to ask you a question related to the implications of your research. Given that some municipalities like Chatham Kent are willing hosts for wind turbines, do you think it is possible that some properties in willing host municipalities could see an increase in property values due to wind turbines?

Richard Vyn: I don't know if they would ... I don't think that any impact or any positive impacts would occur because of the turbine themselves. Like for example, being close to a turbine in the county such as Chatham Kent would necessarily increase the value. However, if there is some increase in the economic activity that occurs in a municipality because of the wind energy construction, that could lead to overall an increase in demand for houses within a municipality.

So, that could lead to more of perhaps a slight general increase in property values. So, I don't think it's the turbines themselves that would cause that increase. I think it's just ... if there's increase in economic activity that's

occurring in general, it leads to more of a general increase in demand for properties which can then start to increase the price.

Melissa: Hello, Professor Vyn. My name is Melissa. Thanks for speaking with us today. You state that your study may help explain the lack of consensus in the literature regarding the impact of wind turbines on property values. What do you conclude are the main factors, and are there other factors that you now consider to help explain the lack of consensus?

Richard Vyn: Yeah, I think there's a number of factors that can contribute to whether or not you observe impacts on property values. So, I use the example of attitudes toward wind energy and I think there can be differences in attitudes towards wind energy because of a number of factors that may vary depending on the context. So for example, if you're in an area like in Ontario where you don't feel you've had much say in terms of whether or not a wind farm gets developed.

So, if you're a resident there and it seems like it just gets pushed through without considering feedback from the residents. So, you don't feel like you've had any say in the matter, that can lead you to perhaps view wind energy more negatively or view wind turbines more negatively. So, this is something that has been mentioned a couple of times in related literature, about certain types of contexts that could contribute to more of a negative view of wind energy.

So, whether you've had some say in the process, whether there's some additional benefits provided. So, some of the wind energy developers may provide some community benefits, whether it's making financial contributions to the local community in some way. Obviously they're also paying the land owners on which the wind turbines are constructed, but providing some types of benefits.

What we saw here in Ontario is a lot of situations as I mentioned, where the provincial government would essentially override what the municipality want. And essentially would ignore the concerns of the residents. And it wasn't for lack of trying because there were a lot of communities that were very vocal in their opposition to the wind energy development.

But I think when it gets pushed through like that, that can lead to a lot of hard feelings and can certainly cause people to view wind turbines and wind energy in general more negatively. So some of these things can then further contribute to the observed impacts on property values. Whereas if you're at a municipality or any kind of location where you feel like you've had a say in the process, if there are concerns, they've been handled well, they've been discussed.

You feel like there are some things maybe you aren't so sure about, but you had the forum through which to discuss these things, and to get those questions answered, and to get those concerns addressed, then you may end up feeling more positive towards wind energy, and you may be less likely to observe

impacts. So, some of these things actually I think have contributed to a difference in impact even among my own studies.

So, the first study that I did here in Ontario is looking at impacts or trying to find whether impacts occurred around the first major wind farm that was constructed in the province. So, that was in Millington Township. It was a very large wind farm, but in that case, the municipality decided on their own to have this wind farm constructed.

I think there were some concerns expressed along the way. It's not like everybody was in favor of it, but it certainly didn't get the backlash that a lot of future wind farm developers had when they tried to propose their wind farms. And I think that was one of the contributing factors is that, that township made the decision and they went through the process.

So, when I looked at that wind farm and look for impact, I didn't find any significant impact there. And I know when I first reported those results that came a few years after I had actually done the research, and that study got published kind of during a period where the controversy was really taking off, so people weren't convinced about those results.

And when you look at the results of this paper that I have where I do find negative impacts, and a question that may come up is you know, why is there no impact from this study and you do find impacts in this study? Does that discredit the results of your original study? And I would argue that the results of my current study actually support those of the first study.

Because, if you consider how the process went in Millington Township, that would definitely fit the definition of an unopposed municipality, and I didn't find any negative impacts occurring there. And so, that's consistent with the results that I find in this more recent study. So, there are or the way that impacts can occur I think is definitely dependent on the context of each situation, and there's going to be a number of factors.

I think it's important for wind farm developers to understand this as you know, what's going to lead to perhaps a better route to take in terms of getting this wind farms constructed if you want to minimize the impacts on property values, minimize the backlash that you get from residents, because it certainly appears to have a big impact as to whether or not impacts are going to occur.

Speaker 14: Hi Professor Vine, you conclude that the effect of wind turbines on property values are more pronounced in communities that have identified themselves as unwilling hosts. Do you think that in the future municipalities will seek out greater autonomy over what can occur in their jurisdiction?

Richard Vyn: I think this kind of a big impact on that. When you look at ... I know if you're a municipality where obviously you have control over some things that occur

within your municipality, and you kind of look to the province for support for other aspects in terms of what goes on in your municipality, when you've gone through a situation like this where you've made a decision as a municipality but then that decision gets overridden by the provincial governments.

I think it has kind of broken the trust between municipalities and the provincial government, and may certainly cause municipalities to try and make more of these decisions on their own, because now they're not convinced that the provincial government necessarily is going to have their back on a lot of things. So, I think you may see and sort of in backlash to what the steps of the province took regarding wind energy development.

You may see municipalities trying to kind of separate themselves from the province and yes, trying and be a little more autonomous in some of the decisions that they make that are going to have an impact on their municipality. Making sure that they're the primary driver of the decision making process, not that they don't want the provincial government involved, but I think because they feel like the trust has been broken a bit there.

They're certainly going to want to try and do more things on their own. I can see that as sort of a natural reaction to how things went in some municipalities.

Taylor:

Hi Richard. Taylor Dupont speaking. So, I'd like your opinion on future issues regarding wind energy. So, your paper and made it apparent that a variety of socioeconomic impacts influenced people's attitudes on wind turbines. For example, you discussed the idea that job loss in Chatham Kent influenced resident support for wind turbines as they hoped to improve their economy.

So looking into the future, what is your opinion about other external economic effects? For example, how would the support of wind turbines change if the economy were to enter into a recession?

Richard Vyn:

That's a good question. I think if you are in a situation where you go into a recession, if it's more of a general recession, I'm not sure what exactly that would do regarding perceptions and attitudes toward the wind turbines, but I think if you're in a municipality where yeah, you are experiencing some hard times economically, and you're given an opportunity to perhaps create a lot of jobs through something like wind energy development, I think that may change the picture a little bit for you in terms of how you view wind energy.

Particularly if your family has been hard hit by the downturn in the economy, you're losing jobs and so on. You're probably gonna not be as concerned about some of these other impacts of wind turbines if the fact that having a wind farm constructed in your municipality may create jobs and to generate income for your family. So, I think that could have an impact.

What happened in Chatham Kent, I think that the situation there may have contributed, I don't know for sure, but it may have contributed to a difference in attitudes towards wind energy relative to some other unwilling host municipalities. So, it's hard to say exactly. I think it really depends on the situation, but I think there's the potential that negative economic downturn could lead to a little less resistance to wind energy development.

Speaker 16:

Hi Professor Vyn. Thank you for your time today. So, property values would most likely be the most negatively impacted at the height of public opposition and media coverage. However, as time passes, interest in the topic declines. So, do you think the negative effect of wind turbines on property values will lessen as time passes or will these old concerns and stick those persist?

Richard Vyn:

I think there's definitely the possibility that you could see the impacts weigh in a little bit. When you look at some studies that have been done of how people perceive turbines and their impacts, it's been kind of interesting that there's been some evidence that people that are in areas where turbines have already been constructed view turbines less negatively than in areas where wind farms are being proposed.

So yes, I think you may see that as time goes on that the negative impacts and the negative perceptions of turbines may change. And some of that I think has to do with the fact that there's that passing of time, you're further away from the point in time in which that change occurred. And I think it's the change that really drives the negative perceptions.

I mean, people naturally resist change. We like things the way they are, unless we see a good reason to change things, we don't want that especially when a change occurs for which there are unknowns, and that has been a big issue in Ontario. We don't know what the health impacts of wind turbines are, and earlier on we didn't really know what the property value impacts were.

So, when something like that, when a change like that is introduced that has all these unknowns, it naturally is going to generate some resistance. Now when you look at communities where wind turbines have been there for a little while, you're no longer introducing that change, perhaps they've gotten a little bit used to them and perhaps they have a little more information about what the impacts actually are, maybe they are less concerned about that.

So, I think that as time goes on, yeah, you may not see as much of an impact. There may still be people that are unwilling to live close to them even if they've been there for 10 years or more. So, there may still be a little bit of an impact, but I think that would certainly be an interesting studies to look at. Is there a difference in impact between say the first five years versus the 10 years following that period to see whether the magnitude of the impact changes at all?

And at some point, do the impacts disappear? I think that would be interesting to take a look at. I think here, because in Ontario though, the wind energy industry, this has developed so quickly that we're still kind of more at the beginning stages. We can't really see what's going to happen longer term, but if you have the ability to compare impacts over a longer period of time, I think that'd be an interesting topic of study to see whether these impacts are going to be reduced over time.

Brady Deaton: Rich, we're coming to the end of the podcast, but I wanted to say that this podcast is listened to fairly widely from policymakers to the generally interested public to academics, really throughout the world and I wanted to make sure that there was ... if there's anything that you wanted to add that we might not have covered, or if you want to talk a little bit about where you might be going in with respect to future research, feel free to do so.

Richard Vyn: Right. Yeah. I think what's come out of this study is that the context really does matter. How the wind energy development occurs, whether people feel involved in the process, whether they feel like they have a say. I think that that certainly contributes to the nature of the impact, meaning whether you're going to see impacts on property values or not.

So, if you're in a jurisdiction that is considering wind energy development where there previously has not been any, I think this speaks to the need to go through a process very transparently and make sure you get the feedback from residents, and at least try to take steps to get them on board to, to understand what the impacts could be.

And to also look at the positive benefits that you can have from wind energy development because, I think a lot of those may have gotten lost in the controversy that we've had here in Ontario. There are some benefits. So, trying to present that information to residents rather than just kind of pushing the development through and just trying to get the wind farm developed.

I think it's important to ... if you want the process to go well, and if you want to minimize the impacts on your residents, that's an important step to take. I think there's still more to learn about both the impacts. And my study have found that the impacts extended about four kilometers away from the nearest wind turbines. So at some point, the impacts do start to diminish where you don't see any significant impacts any longer.

But just kind of getting an understanding as to what distance do impacts typically decline and become minimal. So, taking a look at that and understanding the magnitude of the impact too. So, that's found to vary depending on where you are. So, I think there's still more room for looking into this, and certainly the question regarding weather impacts may decline over time, I mean that's worth looking at, at some point down the road.

I am interested in finding out a little bit more about factors that influenced the municipalities decision to declare themselves an unwilling host or not. But I think again, when we look at all the studies that have been done, we're no longer in a period where there hasn't been enough studies done to understand this issue.

I think from the studies that we've seen, sure there are some limitations of these studies, but the literature has gotten to a point where we've been able to address a number of these limitations, but yet we're still finding that the effects are varied. In some areas, you do find impacts, and others you don't. So, I hope that my study will be helpful.

Also for those that are doing research on this issue, hopefully highlighting the fact that the context can contribute to differences and impacts like even within the province of Ontario. So, it's not like all across the province we see the same impact occurring everywhere. There's differences from one jurisdiction to another. So, that's important to consider, and I think it's important to understand. And overall, I hope that this does make a positive contribution to studies on this issue and just to knowledge on this issue in general.

Brady Deaton: Well, on behalf of land economics and the class and all the listeners, thank you very much.

Richard Vyn: My pleasure.

Brady Deaton: Thanks for joining us at FARE-Talk. We hope you will continue to check our website for updates and the latest podcast.