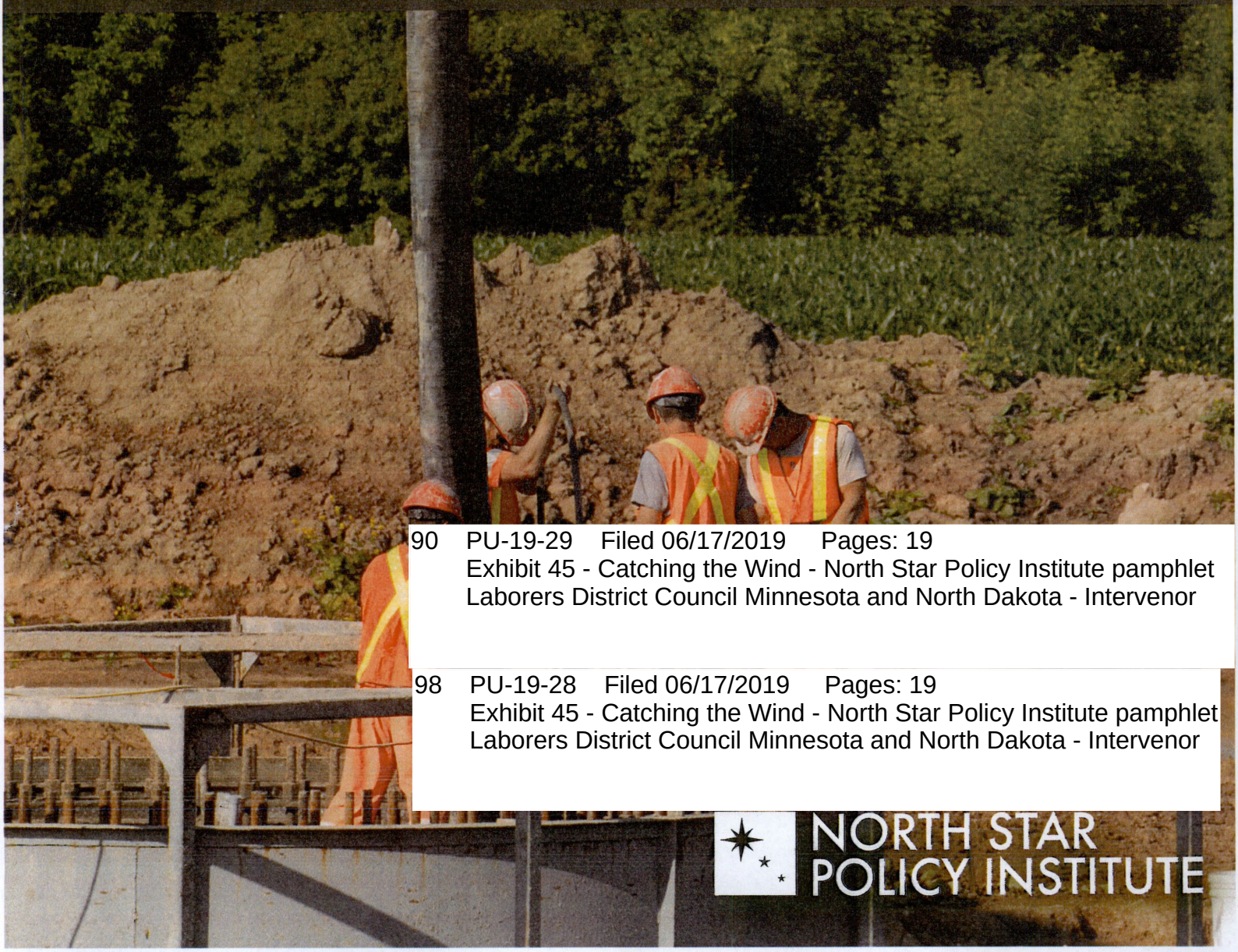
EXHIBIT
45

Catching the Wind:

The impact of local vs. non-local hiring practices on construction of Minnesota wind farms

JUNE 2018



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NORTH STAR POLICY INSTITUTE

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About North Star Policy Institute:

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North Star Policy Institute is a Minnesota progressive think tank that advances public awareness of and discussion about state-level public policies.

Our vision for Minnesota is a state where working families get ahead instead of just getting by; where all Minnesotans have the opportunity to succeed in the changing economy; and where smart investments in public services and infrastructure support healthy and connected communities.

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EXECUTIVE SUMMARY

Minnesota's wind energy economy is booming. The state is eighth in the nation in net generation from wind energy. There are currently at least seven major wind farm projects seeking permits or in pre-construction, all in Southern Minnesota. These projects will generate an additional 1,400 megawatts in renewable power and add to Minnesota's already impressive wind energy portfolio.

These seven projects and others in the pipeline have the capacity to create thousands of family-supporting construction jobs. Unfortunately, Southern Minnesota will miss out on many of the economic benefits of new wind farm construction if developers rely primarily on out-of-state construction workers. Unlike local workers, who typically spend their wages locally, out-of-state workers on wind projects take the wages they earn back home when they leave.

To better understand the consequences of using local versus non-local workers, this report analyzes the potential economic impact of seven major wind farm projects in Minnesota.

Findings

- If 70% of the work on all seven projects is done by local workers, total local spending would be approximately $89 million.
- If 30% of the work is done by local workers, total local spending would be $57 million.
- The difference between using 70% local workers and 30% local workers would be approximately $32 million.
- By including deferred fringe benefits that will likely be spent down the road by local workers, the difference grows by $13 million to approximately $45 million.
- For a region of the state that has historically lagged the rest of Minnesota in construction job creation and overall economic vitality, this is a particularly concerning loss in economic activity.

Recommendations

The following recommendations could help to maximize the local employment and economic benefits of new wind projects.

- First, to secure specific commitments from both developers and Engineering, Procurement, and Construction (EPC) contractors to use a specific percentage of local labor on new wind farm projects.
- Second, to require quarterly data reporting by developers on their use of local workers.
- Third, to encourage collaboration with state-registered apprenticeship programs, which can help recruit and train local workers in skills needed to build wind energy facilities.

Through these modest proposals, we can assure efficient use of investments and maximize local benefits.

INTRODUCTION

Minnesota's wind energy economy is booming. The state now ranks eighth in the nation in net generation from wind energy.[1] There are currently at least seven major wind farm projects seeking permits or in pre-construction, all in Southern Minnesota.

These projects will generate an additional 1,400 megawatts in renewable power[2] and add to Minnesota's already impressive wind energy portfolio. Today wind energy conversion facilities provide nearly 18% of the state's power, up 14% percent from 2012.[3],[4]

New wind farm development has created economic benefits for both workers and land owners. The American Wind Energy Association (AWEA) estimates that, in 2017, wind farm projects in Minnesota provided annual land lease payments of between $10 million and $15 million, generated $7.1 billion in total capital investment and supported between 3,000 and 4,000 direct and indirect jobs.[5]

The majority of jobs needed to develop a wind farm are in the construction industry. A 200 megawatt wind farm, consisting of 60-100 turbines, requires 135-200 construction workers.[6]

A 200 megawatt wind farm, consisting of 60-100 turbines, requires 135-200 construction workers.

The construction of a wind farm relies on the labor of a range of skilled construction workers. Construction laborers help to build the access roads needed to carry heavy machinery to turbine installation sites and they pour the concrete foundations for new turbines. Operating engineers prepare the site and hoist the turbine components. Iron workers secure the tower and help construct the foundation. Electricians connect the turbines to transmission lines.

These jobs offer opportunities for Minnesotans across a broad spectrum of construction experience – from those with no experience to career journeymen and women.

A wind farm project typically includes workers with extensive experience and highly specialized skills (e.g. electrical workers with wind turbine expertise), workers with some wind construction experience (e.g. operating engineers with past experience hoisting turbine components), workers with only general construction experience (e.g. laborers

1 Energy Information Administration, "Minnesota State Profile and Energy Estimates," https://www.eia.gov/state/?sid=MN.

2 Minnesota Public Utilities Commission, "Project Database," https://mn.gov/commerce/energyfacilities/Docket.html?searchSubject=Wind+power&searchStatus=openProjects&searchCoverage=&dateStart=&dateEnd=&B1=Submit.

3 Department of Commerce, "Minnesota Renewable Energy," http://mn.gov/commerce-stat/pdfs/2016-renewable-energy-update.pdf.

4 Minnesota Public Utilities Commission, "Project Database," https://mn.gov/commerce/energyfacilities/Docket.html?searchSubject=Wind+power&searchStatus=openProjects&searchCoverage=&dateStart=&dateEnd=&B1=Submit.

5 American Wind Energy Association (AWEA), "Wind Energy in Minnesota," http://awea.files.cms-plus.com/FileDownloads/pdfs/Minnesota.pdf.

6 Jobs estimates based on author's analysis of the National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impacts (JEDI) model. Methodology for job estimates described later in this report.

with experience in pouring concrete) and those that are new to the industry with little to no construction experience.

Thus, there are many opportunities for workers from Southern Minnesota to begin a well-paid job on a wind farm project.

Unfortunately, Southern Minnesota may be missing out on many of the economic benefits of wind farm construction when developers and contractors rely on out-of-state construction workers to build wind energy projects. Unlike local workers, who typically pay local property taxes, send children to local schools, spend their earnings at local establishments, and donate to local churches and non-profits, out-of-state workers on wind projects take the wages earned and the skills developed on wind projects back home when they leave.

Mankato Building Trades President Stacey Karels, whose organization represents thousands of construction workers across Southwestern Minnesota, observes that for decades the industry has relied on local tradesmen and tradeswomen to build wind farm projects. In recent years, however, Karels and his members have seen an increase in the number of projects built with largely non-local labor.

"It seems like a few of our wind developers have forgotten that Southern Minnesota is home to one of the best wind construction workforces in the country. Our members haven't just been building wind projects safely, on-time, and on-budget in Minnesota for more than twenty years. They've also been contributing to their communities through their paychecks, health and retirement benefits, and volunteer hours."[7]

"It seems like a few of our wind developers have forgotten that Southern Minnesota is home to one of the best wind construction workforces in the country."

When wind developers increasingly rely on out-of-state labor for new wind farms, Minnesota communities miss out on the positive economic impacts of hiring local workers. The Red Pine Wind Farm, for example, became the subject of controversy in 2017 when area construction workers and community members criticized the project for employing a largely non-local workforce at the expense of local residents.[8]

Developers and construction contractors that rely on out-of-state workers often argue that there are not enough workers locally to meet their workforce demands. This argument is challenged, however, by the fact that many projects such as the Prairie Rose wind farm have relied on a majority local workforce, according to locals familiar with the projects.[9]

7 This interview was conducted on June 13th, 2018.

8 Karl Evers-Hillstrom, "Southwest Minnesota construction unions push back on wind farm outsourcing," Worthington Globe, September 5, 2017. http://www.dglobe.com/business/4322067-southwest-minnesota-construction-unions-push-back-wind-farm-outsourcing.

9 Information based on informal interviews with generators to gathering systems and transmission lines.

Further, area building trades unions have consistently expressed a willingness to work with wind farm developers to identify and train local workers for work on new wind farm construction projects.[10]

The objective of this report is to assess the economic consequences for local communities throughout Southern Minnesota when wind farm developers and contractors rely largely on local or non-local construction labor. To do this, we analyze the economic impact of seven major wind farm projects that are in the permitting or pre-construction phase, based on a review of applications filed with the Minnesota Public Utilities Commission and news reports. We find that greater use of local workers could not only create hundreds of well-paid jobs, but also generate more than tens of millions of dollars in additional economic activity across Southern Minnesota.

10 Public comments to the Minnesota PUC, "Makato Building Trades Comments on Proposed Flying Cow Wind Project in Yellow Medicine County," PUC, comments submitted March 18, 2018.

THE WIND FARM INDUSTRY IN MINNESOTA

Minnesota is one of the top wind energy producing states. Minnesota ranked eighth in the United States in 2017 with total generation of 10,637 megawatt hours of wind power, which is enough energy to power 983,000 homes.[11,12]

Minnesota wind farms are largely concentrated in Southern Minnesota. The region experiences frequent and sustained wind activity making it an ideal area to capture wind energy.

In addition to this significant existing capacity, there are thousands of megawatts in wind farm projects under permitting review or in the pre-construction phase. Along with these new projects, there are also major re-power projects under review that will increase capacity and efficiency of existing wind farms. Table 1 lists some of the major projects currently in pre-construction or under PUC review.

These projects will not only expand Minnesota's renewable wind energy portfolio, but they also have the capacity to directly create nearly 1,300 family-supporting construction jobs and generate $145 million in employment driven economic activity in Southern Minnesota. On the other hand, if construction work on these wind farm projects were largely outsourced to non-local workers from states like California, Colorado and Texas, Southern Minnesota workers and communities could lose out on hundreds of jobs and tens of millions of dollars worth of payrolls and local economic activity.

New construction jobs could have a particularly profound impact in the Buffalo Ridge area of Southwestern Minnesota. Construction industry employment has lagged in the region.[13] Additionally, average wages in Southwestern Minnesota are below the statewide average wage of $20.07.[14] It is a region that would benefit greatly from additional job opportunities and economic development.

11 Mike Hughlett, "Minnesota continues to be a top state for wind power," Star Tribune, April 14, 2017, http://www.startribune.com/minnesota-continues-to-be-a-top-state-for-wind-power/419868513/.

12 Energy Information Administration, "Minnesota State Profile and Energy Estimates," https://www.eia.gov/state/?sid=MN.

13 Construction employment in Marshall, Minnesota, for example has yet to recover from Great Recession job loses.

14 Wage levels are based on first quarter employment data for 2017 from Minnesota DEED Occupational Employment Statistics (OES) for Economic Development Regions 6W, 6E, 8, 9 and 10. The average wage across all five areas is $17.48. The statewide average wage is $20.07.

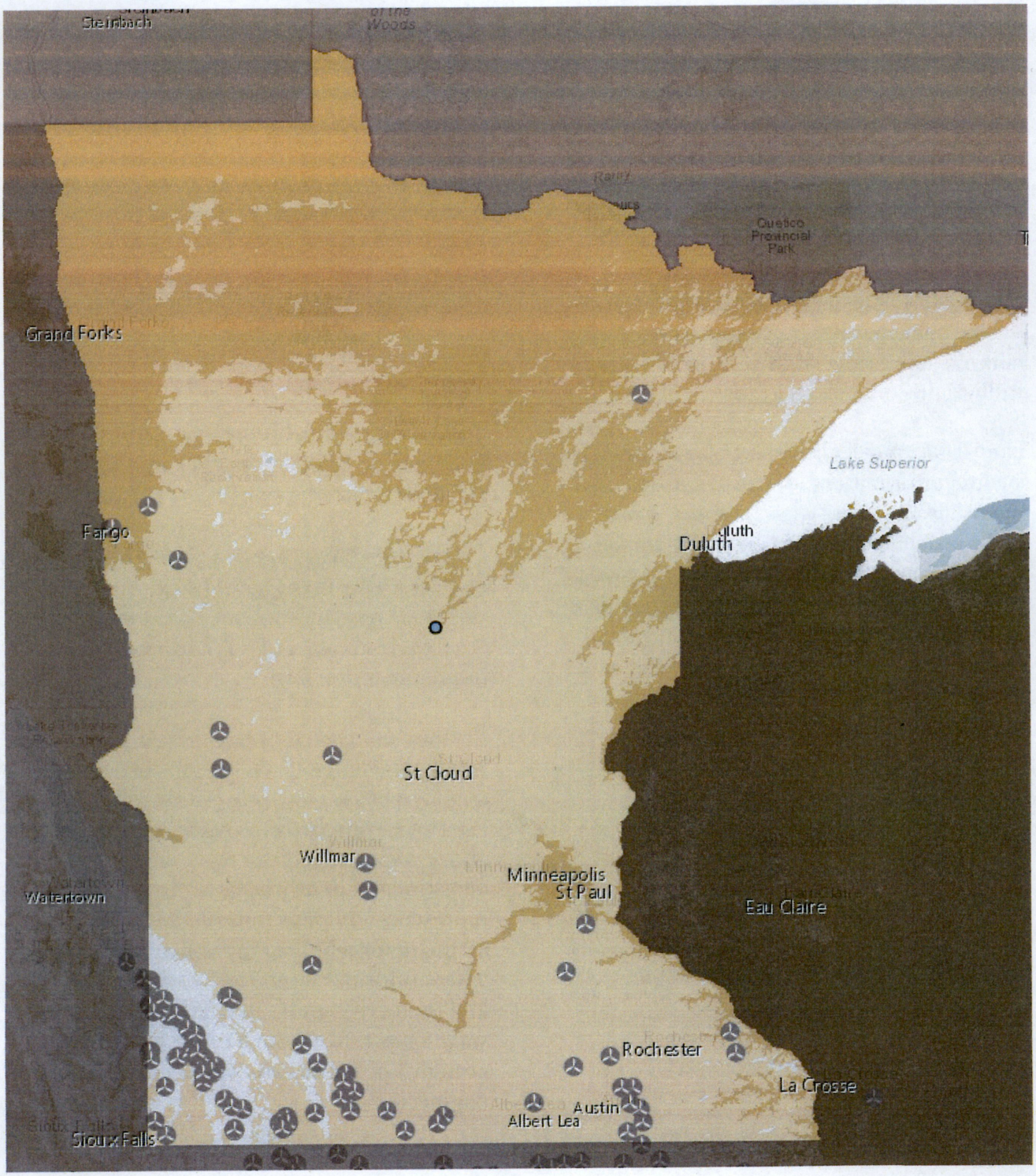
TABLE 1

Major Minnesota Wind Farm Projects Under Review

Proposed Project	Size in MW	Developer Job Estimate
Blazing Star 1 & 2	400.00	400.00
Dodge Steele	200.00	230.00
Bitter Root	152.00	150.00
Nobles 2	260.00	200.00
Freeborn	200.00	200.00
Lake Benton Re-power	107.25	25 to 30 over 3 years
Trimont Re-power	100.50	N/A
TOTAL	**1,419.75**	**N/A**

FIGURE 1

Minnesota Wind Farms



U.S. Energy Information Administration, "Minnesota," https://www.eia.gov/state/?sid=MN

LOCAL VERSUS NON-LOCAL LABOR ON A TYPICAL WIND ENERGY PROJECT

The National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impacts (JEDI) tool models the local impact of wind farm projects. [15] According to the JEDI model, a typical 150-megawatt wind farm project in southwestern Minnesota would create 97 full-time equivalent (FTE) construction jobs.[16] These jobs would require a range of skilled construction professionals including laborers, operating engineers, iron workers, millwrights, and electricians.

The JEDI model allows users to enter specific information on construction materials and labor costs, turbine, tower, blade costs, permitting costs, and annual operating and maintenance costs (personnel, materials, and services) among a range of other inputs. Alternately, the JEDI model can use "default information ... to run a generic impacts analysis assuming wind industry averages." [17]

To determine the economic impact of a hypothetical wind farm project (referred to here as "Buffalo Ridge Wind Farm"), we entered the project location (Minnesota), the project size (150 megawatts), the number of projects (1 total wind farm), and the average turbine size (3500 kW). Outside of these inputs, we relied on the generic impacts analysis generated by the JEDI model.

Workers and Wages

To determine local economic impact, we need to first calculate worker wages. The JEDI estimates for construction labor hourly wages are $18.58 for foundation labor, $21.04 for erection labor, $27.87 for electrical labor and $37.89 for managerial labor. Additionally, the JEDI model estimates that a project this size would create 97 FTE construction and interconnection jobs.

Because management positions are a small percentage of the 97-job total, and employment is relatively evenly split among the three constructions trades jobs listed above, we averaged the three wages to get an estimated hourly wage of $22.50. This represents a highly conservative wage estimate for wind energy construction work, where informal interviews with workers and industry experts indicate that hourly wage rates range from $20 for laborers to around $40 for electricians and operating engineers.[18]

15 The Jobs and Economic Development Impacts (JEDI) Wind model is used to estimate the costs and economic impacts of large wind turbine projects. It relies on wind industry averages to produce economic estimates on a per-project basis. More information is available through the NREL website: https://www.nrel.gov/analysis/jedi/wind.html.

16 The JEDI model is based on FTE jobs that provide 52 weeks of 40-hour-per-week employment for a total of 2,080 hours. In fact, wind energy construction jobs typically last five to seven months and often average 60 hours of work per week for a total of roughly 1,500 hours per year. For this reason, each FTE reported by the JEDI model produces roughly 1.4 full-time wind energy construction jobs.

17 National Renewable Energy Laboratory (NREL), "JEDI Wind Models," https://www.nrel.gov/analysis/jedi/wind.html.

18 Interviews conducted from May 20, 2018 to June 14, 2018 with workers, industry experts and union officials.

The JEDI model assumes that FTEs work 2,080 hours and projects that it will take 201,760 labor hours to complete the Buffalo Wind Farm project (97 FTEs X 2,080 hours per FTE).

Based on insights from a range of industry experts, we know that wind farm work is primarily conducted over the six-month construction season in Minnesota (mid-May to mid-November). During this period, workers work long hours to complete projects, typically working roughly 1500 hours over six months or 60 hours per week.

The bulk of the work on wind farm projects must typically be completed during a single construction season, and construction contractors hire the number of workers needed to complete the work during this six-month period. As a consequence, the average number of workers required to perform the work of the 97 FTEs predicted by the JEDI model is 134 – 201,070 total hours divided by 1,500 hours per worker.

We can test the validity of our model by comparing our estimate of 134 workers for a 150 MW project to industry job projections for each of the seven wind projects analyzed in this report. It is clear from Table 2 that our estimate is consistent with industry figures which typically project one construction job per megawatt of energy installed. The JEDI model also appears to be conservative compared to figures produced by the industry.

In order to estimate total wages earned by wind construction workers, we need to account for both straight-time and overtime wages, since overtime is a standard feature of the work. If workers average 60 hours per week, then at a minimum, a third of their work should be compensated at the time-and-a-half overtime rate (anything over 40 hours is considered overtime). Thus, 500 of the 1500 hours worked would be paid at $33.75 per hour – 1.5 times the $22.50 average wage. Over the construction season, we would expect the average wage for a wind construction worker to be roughly $39,375 using the JEDI model.[20]

TABLE 2 [19]

Developer and JEDI Job Estimates		
Proposed Project	**Developer Job Estimate**	**JEDI Job Estimate**
Blazing Star 1 & 2	400	302
Dodge Steele	230	180
Bitter Root	150	135
Nobles 2	200	165
Freeborn	200	165
Lake Benton Re-power	25-30 over 3 years	N/A
Trimont Re-power	N/A	N/A
TOTAL	**N/A**	**N/A**

The earnings estimates above represent wages and exclude the value of any health, retirement, professional development, or other benefits earned by wind construction workers. In reality, however, compensation packages for wind construction workers typically include some form of health and retirement benefits and may also

19 The JEDI model does not have estimates for re-power projects.

20 Wage estimates are based on prevailing wage rates for highway and heavy work. The wage rate for our hypothetical case (the Buffalo Ridge Wind Farm) uses prevailing wage rates from Region 8 (Southwest Minnesota). A full list of prevailing wage rates can be found here: http://workplace.doli.state.mn.us/prevwage/highway.php.

include additional services such as free skills training. Additionally, we know from informal interviews with workers, contractors and union officials that the JEDI wage estimates are $5-$10 below actual wage rates in the industry.[21]

To better estimate wage rates and to account for fringe benefits, we use Minnesota's prevailing wage rates for our economic impact analysis. Prevailing wage rates report the hourly wages and benefit amounts commonly paid to each class of worker based on annual surveys of private employers.[22] For this hypothetical case, we use the prevailing wage rates for Southwestern Minnesota – referred to as Region 8 by the Department of Labor and Industry. Prevailing wage rates and fringe benefit payments for Region 8 are as follows:

TABLE 3 [23]

Prevailing Wage Region 8		
Craft	**Wage**	**Fringe Rate**
Laborer	25.74	18.50
Ironworker/Millwright	37.79	23.74
Operator	36.34	20.30
Electrician	35.61	15.83
AVERAGE (standard)	**33.87**	**19.59**
Overtime	**50.81**	

Not all construction employers pay prevailing wage rates, but many do, including leading wind energy engineering, procurement and construction (EPC) contractors Mortenson Construction and White Construction. The Mankato Building Trades Council estimates that a large majority of Minnesota workers employed on wind energy construction projects over the past decade have been compensated at prevailing wage rates.

Local versus Non-Local Spending Patterns

Local and non-local workers are assumed to perform similar work and earn similar wages. Non-local workers, who we define as workers that live beyond a daily commuting distance and must therefore secure temporary lodging, typically receive per diem payments to off-set travel costs. Workers on wind farms in Southern Minnesota can be expected to receive an estimated per diem of $100.[24]

Per diems are generally provided on working days, so workers on the Buffalo Ridge project would be expected to receive per diem payments six days per week over the six-month duration of the project. Thus, the average per diem on the Buffalo Ridge project would be $15,600 ($100 x six days a week x 26 weeks).

Using prevailing wage rates, the gross pay for non-local workers, including their per diem, would be approximately $74,872.50 excluding benefits, while local workers will earn approximately $59,272.50 in pay. These numbers are calculated based on 1,000 hours of work at the standard pay level (1,000 x $33.87) plus 500 hours of overtime (500 x $50.81). For non-local workers, we add per diem to their total pay ($59,272.50 + $15,600).

21 Interviews conducted from May 20, 2018 to June 14, 2018 with workers, industry experts and union officials.

22 A full list of prevailing wage rates can be found here: http://workplace.doli.state.mn.us/prevwage/highway.php.

23 The Ironworker/Millwright wage and fringe rate is based on a blended rate.

24 Per diem rates are based on interview and survey data from past and current wind farm construction workers.

TABLE 4

Gross pay for local and non-local Workers		
	Local Worker at 1500 hours	Non-Local Worker
1500 hr Salary	59,272.50	59,272.50
Per Diem	-	15,600.00
Gross pay	**59,272.50**	**74,872.50**

We can estimate the amount the average local worker spends in his or her local area by deducting taxes and savings, and by applying an estimated share of local spending based on the work of other economists. The following table presents expected tax payments and savings per worker:

TABLE 5

After Tax and Savings Income		
Deductions		
Effective Federal (13.42%)	7,954.37	7,954.37
Effective FICA (7.65%)	4,534.35	4,534.35
Effective State (7.05%)	4,178.71	4,178.71
Total Tax	**16,667.43**	**16,667.43**
After Tax Income	42,605.07	42,605.07
Savings (3.1%)	1,320.76	1,320.76
After savings	41,284.32	41,284.32
Fringe Benefits	14,694.38	14,694.38
Deferred Fringe Benefits	14,694.38	14,694.38

These calculations are based on standard tax rates for Minnesota. The "effective" tax rate is based on an analysis of the income bracket in which workers in this income bracket fall. Per diems are non-taxable.

On top of estimated state and federal taxes, the average American currently saves approximately 3.1% of their income.[25] If we assume this trend holds, the average after tax and after savings income of both local and non-local workers would be about $42,605.07. On top of this income, however, non-local workers receive a $15,600 per diem.

Fringe benefit contributions largely fall into two categories: health benefits that are paid out to health providers on behalf of plan participants and retirement benefits that are deferred until retirement. Health and retirement benefits are generally not taxed, and the local economic impact of retirement contributions are deferred until the participant retires. Our review of available information on fringe benefits supports a rough 50/50 split between current and deferred fringe benefits.

While local workers spend their fringe benefits locally, non-local workers tend to utilize their fringe benefits near home. Those funds will be spent later. Fringe benefit payments include health care coverage, vacation money and retirement benefits. Since local workers spend 50% of their fringe benefits locally in the short-term, we include 50% of fringe benefits as a form of local spending in our analysis.

In past efforts to measure the local economic impact of local employment, economists have estimated that, on average, local workers spend 95% of their income within the

25 Tax estimates corroborated by Smart Asset's online tax estimator. The full estimator is available at: https://smartasset.com/taxes/income-taxes#SRQvQjkXhc.

region in which they live.[26] Thus, we would expect the average local construction worker on the Buffalo Ridge Wind Farm to spend approximately $53,179.76 in the regional economy (95% of after tax /after savings income + 50% of fringe benefits or 95% of $41,284.32+ $14,694.38).

Non-local workers, on the other hand, tend to restrict their local spending to the amount of their per diem.[27] Thus, we expect that Buffalo Ridge Wind Farm workers would spend $15,600 locally over the duration of the project. The difference in local spending per worker is approximately $37,579.76. This is $37,579.76 less per worker that would be spent at neighborhood grocery stores, car dealerships, restaurants and clothing stores. It amounts to the direct economic stimulus gained or lost when a decision is made to hire local or non-local workers.

The potential gain or loss in local spending becomes significant when we consider total employment on a wind farm project. Based on the JEDI model, the Buffalo Ridge Wind Farm would employ a total of 134 construction workers, and the local economic impact of the particular project changes substantially based on how many of the 134 are local residents.

It is rare that a project uses either 100% local workers or 100% non-local workers. Instead, most projects fall within a range. Wind developers typically hire a single general contractor to provide engineering, procurement and construction (EPC) services.

When an EPC contractor has existing workforce or partnerships with workforce providers in a local area, local workers can account for roughly 50% to 70% of hours worked. In other cases, the EPC contractor may employ out-of-state crews to perform the vast majority of work on a project, and local workers account for anywhere from 30% to as little as 10% of work hours.

Total cumulative spending by workers at these different levels of local versus non-local workforce are as follows:

TABLE 6

Total Payroll and Total Local Pre-Multiplier Spending

Percent local workers	Total Payroll	Total Local Spending
100%	11,880,607.50	7,126,087.33
70%	12,507,727.50	5,615,381.13
50%	12,925,807.50	4,608,243.67
30%	13,343,887.50	3,601,106.20
10%	13,761,967.50	2,593,968.73
0%	13,971,007.50	2,090,400.00

If a project similar to the hypothetical Buffalo Ridge Wind Farm relies on 70% local workers versus 30% local workers, the difference in cumulative local spending would be about $3.5 million in direct spending – a substantial difference. If you include deferred fringe benefits, that will be spent once a worker retires, the difference in local spending between 70% local workers and 30% local workers rises to approximately $4.5 million.

26 Bruce Nissen and Yue Zhang, "Hiring Our Own? The impact of local vs. non-local hiring practices in two county GOB projects," August 16, 2006, Research Institute on Social and Economic Policy at Florida International University.

27 This assumption is based on survey analysis and interviews with current and past wind energy construction and other sectors that typically employ traveling workforce.

These differences in local impact grow when we account for multiplier effects of local spending. Wages earned by local construction workers are re-circulated within local economies through secondary purchases and other economic transactions. This spending creates additional jobs via multiplier effects that have been well-documented by economists.[28]

In this report, we focus on the earnings multiplier. In Nissen and Zhang's 2006 study of the economic impact of local hire on two major construction projects in Florida, they rely on a earnings multiplier of 1.7377 for new construction work. This means that every dollar spent in a local economy will result in 73.77% additional earnings, beyond the earnings of those employed in doing the original work.[29]

If we replicate the multiplier used by Nissen and Zhang (2006), total local spending would be as follows:

TABLE 7

Local Spending After Applying Multiplier Effects (in dollars)

Percentage of Local Workers	Economic Impact
100% local workers	12,383,001.95
70% local workers	9,757,847.79
50% local workers	8,007,745.02
30% local workers	6,257,642.24
10% local workers	4,507,539.47
0% local workers	3,632,488.08

Now the difference in local spending if the hypothetical Buffalo Ridge Wind Farm project relies on 70% local workers or 30% local workers is approximately $3.5 million. In you include deferred benefits, the total difference in economic impact between 70% and 30% local is $5 million. For a small community in Greater Minnesota, these differences in local economic impact could provide a boost in the tax base for local schools and a substantial stimulus to local businesses.

28 The following is Minnesota specific example of a report using multiplier effects: Bureau of Business and Economic Research (BBER) at the University of Minnesota Duluth (UMD) Labovitz School, " Enbridge Pipeline Construction: Economic Impact Study," prepared for Area Partnership for Economic Expansion (APEX), April 18, 2017.

29 Bruce Nissen and Yue Zhang, "Hiring Our Own? The impact of local vs. non-local hiring practices in two county GOB projects," August 16, 2006, Research Institute on Social and Economic Policy at Florida International University, pg. 8. Nissen and Zhang use an earnings multiplier specific to their region of analysis – Miami-Dade County, Florida. We do not have a regionally specific RIM II earnings multiplier for Southern Minnesota. However, we expect only minor variation from the regionally specific earnings multiplier used by Nissen and Zhang. Additional research is needed to determine the exact earnings multiplier for Southern Minnesota.

THE CUMULATIVE IMPACTS OF LOCAL VERSUS NON-LOCAL LABOR

There are currently seven major wind projects in Southern Minnesota either moving through the permitting process or in pre-construction.

TABLE 8

Major Wind Farm Projects in Southern Minnesota		
Proposed Projects	**Size in MW**	**Developer Job Estimate**
Blazing Star 1 & 2	400	400
Dodge Steele	200	230
Bitter Root	152	150
Nobles 2	260	200
Freeborn	200	200
Lake Benton Re-power	107	50
Trimont Re-power	101	50
TOTAL	**1,420**	**1,280**

These projects will cumulatively lead to over 1,400 MW in new wind production and create over 1,200 jobs.[30] They have the potential to greatly benefit the regional economy of Southern Minnesota. However, Southern Minnesota communities will miss out on new construction jobs and the full positive economic benefits if these projects rely primarily on non-local workers.

To calculate the cumulative economic impact on the above projects, we replicate the economic model used to determine the impacts of the Buffalo Ridge Wind Farm project. The following table provides an overview of our findings:

TABLE 9

Cumulative Impact of Proposed Wind Farm Projects	
Megawatts	1,419.75
Jobs	1280
Total Local Spending Pre-Multiplier	
100% local workforce	64,887,765.18
70% local workforce	51,177,835.63
50% local workforce	42,037,882.59
30% local workforce	32,897,929.55
10% local workforce	24,723,747.92
0% local	19,188,000.00
Total Economic Output	
Multiplier at 100% local workforce	112,755,469.55
Multiplier at 70% local workforce	88,931,724.97
Multiplier at 50% local workforce	73,049,228.58
Multiplier at 30% local workforce	57,166,732.19
Multiplier at 10% local workforce	41,284,235.80
Multiplier at 0% local workforce	33,342,987.60

30 The job estimate is based on developer estimates provided in PUC application materials or as documented in media sources. The Re-power job estimates are based on a conservative assumption of job creation.

We rely on an average wage and fringe benefit rate of the four prevailing wage regions that cover Southern Minnesota including regions 6, 7, 8 and 10. There is only small variation in wage and fringe benefit rates for each region. The prevailing wage rates across all four regions are as follows:

TABLE 10

Average Prevailing Wage for Southern Minnesota		
Craft	**Wage**	**Fringe Rate**
Laborer	27.01	18.78
Ironworker/Millwright	37.61	23.55
Operator	32.31	19.95
Electrician	36.09	17.71
AVERAGE (standard)	**33.25**	**20**
Overtime	**49.88**	

Similar to our analysis of the hypothetical Buffalo Ridge Wind Farm project, we focus on the difference in economic impact of projects using 50-70% local workers versus those that rely on out-of-state workers and only use 10-30% local workers. The differences in cumulative economic impact at these two levels are striking.

If local workers comprise 30% of the workforce, the economic benefit to Southern Minnesota communities will be approximately $57 million. If, however, local workers comprise 70% of the workforce, the economic benefit will be $89 million. Thus, the difference between using a 70% local workforce versus a 30% local workforce would be at least $32 million. If we include deferred fringe benefits, that will likely be spent down the road by local workers, the difference grows by $13 million to approximately $45 million. For a region of the state that has historically lagged much of the rest of Minnesota in construction job creation and overall economic vitality, this is a particularly concerning loss in economic activity.

CONCLUSION

Wind farm construction has the potential to create new job opportunities for Southern Minnesota residents and to inject millions of dollars into the region's economy. Unfortunately, some wind developers have relied largely on out-of-state labor for new wind farm construction. The region's residents will continue to miss out on hundreds of new jobs and millions of dollars in local investment if nothing is done to shift industry practices.

To increase the community benefits of new wind farm projects, we recommend the Minnesota Public Utilities Commission take the following actions.

(1) Secure specific commitments from developers and Engineering, Procurement, and Construction (EPC) contractors to use a certain percentage of local labor on new wind farm projects to the project approvals process. Developers rarely follow through on commitments to employ local workers. The state needs to tie project permitting to local hire commitments.

(2) Require developers to quarterly report data on their use of local workers. There is very little information publicly available on workforce utilization. To better understand the economic impact of wind farm projects, we must have improved public data on hiring and employment practices.

(3) Encourage collaboration with state-registered apprenticeship programs, which can help recruit and train local workers in skills needed to build wind energy facilities.

Through these modest policy proposals, we can assure that we are efficiently using resources and maximizing local benefits.

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