

**Catching the Wind 2.0:  
An Update on Changing Employment Practices  
in Minnesota's Wind Energy Industry**

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**Local Jobs**  
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## **Catching the Wind 2.0: An Update on Changing Employment Practices in Minnesota's Wind Energy Industry**

### **Executive Summary**

In June of 2018, the North Star Policy Institute (NSPI) released a report that examined the use of local and non-local construction labor to build wind energy construction projects in Minnesota. *Catching the Wind: The impact of local vs. non-local hiring practices on construction of Minnesota wind farms* highlighted the potential for the wind energy industry to spur economic development in Greater Minnesota, but it also concluded that the state risked losing tens of millions of dollars in potential economic development due to the outsourcing of construction jobs to out-of-state workers. The report considered seven wind energy projects then in permitting or pre-construction stages, and concluded that the use of a largely non-local workforce to build the projects could cost local communities \$32 million in lost economic stimulus over the short term, and \$45 million over the long term, compared to use of a largely local workforce.

Minnesota has made substantial progress in maximizing local socio-economic benefits of new wind farm projects since *Catching the Wind* was published. The Minnesota Public Utilities Commission ("Commission") has made quarterly reporting on the use of local and non-local construction labor a standard feature of wind farm site permits, increasing transparency and making it easier for communities to hold developers accountable for delivering promised jobs. The Commission also determined that the use of local construction labor is potentially relevant to permitting decisions for wind energy facilities in a ruling that sidetracked a project that was proposed by a company with a record of relying on non-local labor.

Finally, Minnesota's utilities and clean energy industry leaders have begun to step up to the plate when it comes to maximizing employment of Minnesota workers on wind farm projects. Local labor leaders estimate that the local share of Minnesota's wind energy construction workforce has shot up from under 20 percent in recent years to well over 50 percent in 2019 thanks to projects like Xcel Energy's Blazing Star and Tenaska's Nobles II wind projects that will not only provide power to Minnesota ratepayers, but they will also provide jobs to Minnesota workers. Industry and labor leaders have also joined together to support clean energy legislation that would require utilities and the Commission to consider local job impacts as part of the resource planning process, and to promote greater use of local workforce and registered apprenticeship programs on clean energy projects.

The news is not all positive, however. While advocates see Blazing Star and Nobles II as success stories, the first report issued under the Commission's new Labor Statistics Reporting requirement shows that local workers accounted for just 32% of hours worked on NextEra Energy Resources' Lake Benton II Repower project in the project's first quarter. Such a poor

result on a project located some 30 miles away from a local hiring success story shows that much work remains to be done. It is not yet clear whether the many projects in the development pipeline will look more like Blazing Star and Nobles II or Lake Benton II.

*Catching the Wind 2.0* summarizes these developments and considers the potential impact of additional wind energy projects that have been announced or begun the permitting process since the original report was published. The report finds, using the same methodology employed in *Catching the Wind*, that use of a largely local workforce (50%-70%) to build 10 proposed wind energy projects is associated with \$62 million in additional local economic activity in Greater Minnesota compared to use of a largely non-local workforce (10%-30%).

*Catching the Wind 2.0* concludes that, with thousands of jobs and tens of millions of dollars in economic development at stake, policymakers, industry and other stakeholders must continue efforts to ensure that the development of local wind resources benefits local workers and communities. The report recommends three concrete steps that can be taken to achieve this goal: (1) enact proposed Clean Energy First legislation to ensure that utility resource plans are developed with workers in mind; (2) continue to hold developers accountable for putting local workers first; and (3) encourage collaboration with bona fide state-registered apprenticeship programs to train a next-generation energy workforce.

## Introduction

In June of 2018, the North Star Policy Institute (NSPI) released a report on the local economic impact of employing local and non-local workers on construction of wind energy infrastructure in Minnesota. The report highlighted the potential for the wind energy industry to spur economic development in Greater Minnesota, but also revealed the high cost to Minnesota communities of reliance on outsourced construction labor by some wind builders. The report found that seven major wind projects then seeking permits or in pre-construction were expected to generate anywhere from \$41 million and \$89 million in local economic activity generated by construction payrolls, depending on how many of the jobs are filled by local workers.

*Catching the Wind 2.0* looks backward to assess the progress made by Minnesota's wind industry one year later. We consider changes that have taken place in the wind energy permitting process and how the use of local labor differs in 2019 from previous years. We also look ahead at the next wave of wind energy projects that will be built in 2020 and beyond. We find that the State of Minnesota, the wind industry, and local skilled trades have made steady progress toward ensuring that wind energy projects benefit Minnesotans. But we also find that much work remains to be done to maximize the benefits of major wind farm projects currently in the development pipeline, including nine new projects that, together with one project from the first report that is still in permitting, could create 2,000 wind energy construction jobs and approximately \$200 million in potential construction payroll.

Minnesota's wind industry has continued its sustained growth since the publication of *Catching the Wind* in June of 2018. A survey of wind energy projects in development, permitting and pre-construction phases finds 2,000 megawatts of new wind energy currently in the pipeline, including 1,800 megawatts not identified in the original report. This is in addition to more than 1,400 megawatts of wind energy capacity identified in 2018, most of which is currently under construction or scheduled for 2020.

Despite the fact that federal tax credits will begin to phase out in 2021, the corporate market for wind energy and falling production costs is expected to sustain long-term investment. For example, Google's partnership with Xcel Energy to supply wind power to run the company's new \$600 million data center in Becker, Minnesota, reflects growing corporate appetite for clean energy. At the same time, declining costs for renewable energy are driving a transition towards a cleaner energy economy.<sup>1</sup>

This transition to renewable energy sources like wind and solar has many benefits for Minnesotans, from cleaner air to new job opportunities. At the same time, the transition can also mean the loss of a good, family supporting jobs for Minnesota workers employed in

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<sup>1</sup> Megan Mahajan, "Build New Renewable Energy Is Cheaper Than Running Existing Coal," Forbes, December 2018, available here: <https://www.forbes.com/sites/energyinnovation/2018/12/03/plunging-prices-mean-building-new-renewable-energy-is-cheaper-than-running-existing-coal/#75119a7531f3>.

conventional energy generation. These conventional energy jobs provide a middle-class income, health benefits and secure retirements for thousands of Minnesota workers and their families. We are already seeing these impacts with the projected transition of the Becker coal fired power plant to natural gas, which will lead to the loss of 150-160 jobs.<sup>2</sup> Job losses will continue as Minnesota's investor-owned, cooperative, and municipal utilities shutter or transition coal-fired power plants.

Clean energy advocates argue that Minnesota can replace jobs in conventional energy generation with jobs building and maintaining wind and solar installations and energy storage facilities. But the promise of the clean energy economy will only be realized if the industry creates the same kind of high-quality jobs for local workers as conventional energy generation has provided for generations of Minnesotans. Sadly, this has not always been the case. While many clean energy projects are economic success stories, others have relied heavily on out-of-town workers from states like Texas and California. A traveling workforce spends much less money locally than a Minnesota-based construction workforce, robbing local communities and the state as a whole of the full value of clean energy investments.

The goal of the original *Catching the Wind Report* was three-fold. First, we explored the extent to which wind developers were relying on non-local labor to build new wind farm projects. Second, we quantified the estimated impact of employing local and non-local workers on major wind farm projects. Third, we recommended steps that policymakers and industry could take to improve outcomes. Through interviews, field research and review of public records we found a troubling reliance on non-local workers to build recent wind energy facilities.

In looking at seven major wind farm projects between 100 to 300 megawatts (MWs) proposed or under construction, we estimated the difference in regional economic impact between using largely local workforce (50% to 70% local) and a largely non-local workforce (10% to 30% local) to be approximately \$32 million dollars before including retirement benefits. Once anticipated deferred spending associated with retirement benefits was included, the difference grew by \$13 million to approximately \$45 million.

Research by NSPI and advocacy for maximizing the local benefits of new renewable energy development on the part of community advocates and Minnesota Building Trades unions have had an impact both on the conversation around renewable energy development, and on the process used by the Commission to approve wind energy projects. The goal of this report is to evaluate the progress that has been made over the last year and to look ahead at the possible socioeconomic benefits of proposed wind energy projects slated for development in the coming years.

## **Assessing Our Progress**

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<sup>2</sup> Peter Teigland, "What Coal Plant Closures Mean for Minnesotans," North Star Policy Institute, April 2018, available here: <https://northstarpolicy.org/what-coal-plant-closures-mean-for-minnesotans>.

Since the June 2018 release of *Catching the Wind*, the conversation around local hiring practices has shifted. There is growing recognition and concern that the failure to recruit and employ local workers on major wind farm projects in Minnesota could cost regional economies millions of dollars in lost economic opportunities. The issue is increasingly generating the attention of news media, especially in Southern Minnesota communities such as Marshall,<sup>3</sup> Pipestone,<sup>4</sup> Worthington,<sup>5</sup> Rochester,<sup>6</sup> and across the state of Minnesota.<sup>7</sup>

We have also seen elected officials, environmental and clean energy advocates, and industry leaders step up to highlight the importance of the issue and advance solutions. Finally, we have seen the Commission and Department of Commerce begin to explore and weigh local construction hiring impacts in the permitting process.

Many of the changes that have taken place over the past year are consistent with the recommendations laid out in the 2018 *Catching the Wind* report: (1) secure specific commitments from both developers and Engineering, Procurement & Construction (“EPC”) contractors to employ local labor; (2) require quarterly reporting during construction on the use of local labor; and (3) encourage collaboration with state-registered apprenticeship programs to recruit and train local workers in skills needed to build wind energy facilities.

One of the most important strides forward has been the adoption of local hire reporting requirements by the Commission. On December 20, 2018, the Commission approved for the first time a requirement for quarterly reporting on the use of local and non-local labor to build the 260 megawatt Nobles II Wind project pursuant to an agreement between LIUNA Minnesota & North Dakota and developer Tenaska.<sup>8</sup> Since then, the same reporting requirement has been imposed on other wind energy projects approved by the Commission.

The rationale for local hire reporting was to inform public policy and permitting decisions, and to encourage developers to close gaps between public job creation promises and realities. While just two such reports have been filed with the Commission to date, each highlights the need for transparency and the failure to maximize employment of local workers on Minnesota wind energy projects.

The first report, which was filed prior to the Commission’s adoption of a formal Labor Statistics Report requirement, showed that just 12% of workers employed by RES Americas to build the Stoneray Wind Project lived within Minnesota or within 150 miles of the project as of

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<sup>3</sup> Jim Muchlinski, “Bitter Root project targets the high ground in YMC,” *Marshall Independent*, January 10, 2019.

<sup>4</sup> Kyle Kuphal, “Wind Workers: One union’s push to keep them local,” *Pipestone County Star*, October 29, 2018.

<sup>5</sup> Karl Evers-Hillstrom, “Union wants Minnesota workers hired for wind farm construction,” *Worthington Globe*, September 29, 2018.

<sup>6</sup> Jeremiah Wilcox, “Outsourcing Wind Energy Jobs,” *KIMT 3*, August 6, 2018.

<sup>7</sup> Mike Hughlett, “Regulators table Canby area wind farm over labor concerns,” *Star Tribune*, December 6, 2018.

<sup>8</sup> Minnesota Public Utilities Commission Order Issuing Site Permit for Large Wind Energy Conversion System; In the Matter of the Application of Nobles 2 Power Partners, LLC for a Site Permit for the up to 260 MW Nobles 2 Wind Project and Associated Facilities in Nobles County (January 31, 2019) (eDocket No. 20191-149838-01).

November 1, 2018.<sup>9</sup> The figures are consistent with estimates produced by staff of LIUNA Minnesota & North Dakota, which represents construction laborers that work on commercial building, civil and energy infrastructure projects, including wind farms, and which identified more Texans than Minnesotans on the project. The second report, filed on August 13, 2019, covers work performed during the second quarter of 2019 on NextEra Energy Resources' Lake Benton II Repower project and shows that local workers (Minnesota residents and others living within 150 miles of the project) accounted for just under a third of hours worked.<sup>10</sup>

A second key development was the Commission's first-ever decision to refer wind permitting dockets to a contested case hearing to address concerns over the developer's expected use of non-local construction labor. RES Americas' plans to develop and build the 150 megawatt Bitter Root Wind project in Yellow Medicine County, Minnesota were sidetracked when, rather than issuing a permit at the end of an informal hearing process, the Commission ordered further development of the record on local socioeconomic impacts.<sup>11</sup> The project was ultimately sold to Avangrid, the developer the Trimont Wind Repower project, which is expected to employ a largely local labor force.<sup>12</sup>

Third, Minnesota's investor-owned utilities and many national wind energy developers have stepped up efforts to maximize the local benefits of wind energy development. Xcel Energy is using local labor to build Blazing Star I and II, as is Tenaska's Nobles II Wind, which will serve Minnesota Power customers. Avangrid and EDF Renewables have also indicated plans to prioritize local labor on the Trimont and Fenton Wind Repower projects, respectively. Xcel has taken consideration of Labor's concerns a step further by making the creation of high-quality local jobs an explicit consideration in the company's resource acquisition process.

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<sup>9</sup> Data is based on developer compliance filing report to the Minnesota Public Utilities Commission for the Stoneray Wind Farm Project. The EPC on the project, RES, reported 19 local workers and 153 non-local workers. Thus, 12% of the workers were local. If you include workers employed by the developer and turbine company the total local workforce rises slightly to 14%. Our focus is on construction workers. The Permit Compliance Filing was submitted to the PUC on December 17, 2018, under Docket Number IP-6646/WS-13-216 (eDocket No. 201812-148534-04).

<sup>10</sup> Compliance Filing – Section 6.1 – Quarterly Labor Statistics Report (Q2 2019) In the Matter of the Application of Lake Benton Power Partners II, LLC for a Site Permit Amendment for the up to 100.2 MW Lake Benton II Wind Farm in Pipestone County, Minnesota, Docket Number: IP-6903/WS-18-179 (Aug. 13, 2019) (eDocket No. 20198-155154-01).

<sup>11</sup> Order Deferring Action and Initiating Negotiations; Notice and Order for Hearing; In the Matter of the Application of Flying Cow Wind, LLC for a Certificate of Need for the up to 152 MW Bitter Root Wind Project and Associated Facilities in Yellow Medicine County, Minnesota, MPUC Docket No. IP6984/CN-17-676 (January 3, 2019) (eDocket No. 20197-154551-19); and Mike Hughlett, Regulators table Canby area wind farm over labor concerns," Star Tribune, Dec. 6, 2018. <http://www.startribune.com/state-regulators-table-wind-farm-project-after-out-of-state-worker-concerns/502117821/>

<sup>12</sup> Mike Hughlett, "New developer will take on Minnesota wind-farm project after hiring flap PUC held up the project after objections to developer's use of nonunion workers," Star Tribune, May 16, 2019. <http://www.startribune.com/new-developer-will-take-on-minnesota-wind-farm-project-after-hiring-flap/510024142/>

Clean Grid Alliance, which represents the clean energy industry in Minnesota and across the northern Midwest, has partnered with LIUNA Minnesota & North Dakota and Ironworkers Local 512 to support Clean Energy First legislation that would boost deployment of renewable and storage technology, while requiring Minnesota’s utilities and the Commission to consider local job impacts as part of the resource planning process. Clean Grid Alliance has also entered into an agreement with Xcel Energy, LIUNA Minnesota & North Dakota, and leading clean energy advocacy organizations committing the parties to support new renewable investments coupled with efforts to maximize employment of local workers and utilization of bona fide state-registered apprenticeship programs among other provisions.<sup>13</sup>

Mankato Building Trades President Stacy Karels describes the change his members in Southwest Minnesota have seen over the past year:

“It’s been a big turnaround. In 2017 and 2018, you hardly saw Minnesota workers on wind energy projects. This summer we might have a hundred local Building Trades members at Blazing Star alone, and we’ll put even more to work shortly as Nobles II kicks off. Over the last couple years, we saw too many projects like Lake Benton II. This year they’re the exception. For the most part, it seems like the industry understands this needs to be a two-way street, and if they want to develop local resources they need to give back to local workers.”

Despite significant progress, however, challenges remain. The developer of Lake Benton II, where local workers have reportedly accounted for less than a third of the workforce, has plans to both build 170 megawatts of new wind generation in Dodge and Steele Counties in Southeast Minnesota to serve customers of Minnesota Municipal Power Agency, and to rebuild the 100 megawatt Buffalo Ridge Wind to serve customers of Great River Energy. While plans for both projects are under development, NextEra has not indicated how the company plans to improve upon its performance at Lake Benton II. And advocates say that while other developers have recognized the importance of local job creation, few have made commitments to maximize local employment on upcoming projects.

## **Economic Impact of Local versus Non-local Hiring on Proposed Wind Farm Projects**

We have identified 10 major wind farm projects in development or pre-construction stages in Minnesota, nine of which were not included in the original 2018 report. If built, these projects could add more than 2,000 megawatts of wind power to our grid. They also have the potential to create well over 1,000 family-supporting jobs for Minnesota workers.

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<sup>13</sup> Settlement Agreement: Acquisition of the Mankato Center (MEC) (Docket No. IP6949, E002/PA-18-702) (May 20, 2019) (eDocket No. 20195-153012-01).

<b>TABLE 1: Proposed Wind Farm Projects</b>			
<b>Proposed Project</b>	<b>Megawatts (MW)</b>	<b>Job Estimate (1-to-1)</b>	<b>Developer</b>
Fourmile Wind Farm	300	300	TradeWinds
Dodge County Wind Farm	170	170	NextEra
Big Bend Wind Farm	300	300	Apex Clean Energy
Three Waters Wind Farm	200	200	Scout Clean Energy
Oza Tanka Wind Farm	150	150	EDF
Fenton Wind (repower)	205	205	EDF
Redwood River Wind Farm	200	200	EDF
Buffalo Ridge (repower)	109	109	NextEra
Plum Creek	400	400	Geronimo

The common estimate for wind farm construction job creation is one job per megawatt. Thus, we expect these projects to generate approximately 2,000 jobs.

What is the potential economic impact of using a majority local workforce rather than a largely non-local workforce on these proposed projects? In short, we estimate that the difference in local economic impact between hiring a 50% to 70% local workforce and a 10% to 30% local workforce is \$41 million, not including retirement benefits. When deferred fringe benefits that will produce future spending are included, that difference grows to \$62 million.

***Our Economic Impact Model***

Our economic impact estimates are based on the North Star Policy Institute (NSPI) model developed in *Catching the Wind*. Prior to the NSPI report, there was not an adequate model for the economic impact of local versus non-local workers on Minnesota wind farm projects. As discussed in the 2018 report, the JEDI model developed by the National Renewable Energy Laboratory does not sufficiently account for the realities of wind work in Minnesota.

First, the JEDI model does not include overtime, even though we know from interviews with wind workers, developers and contractors that wind construction involves substantial overtime during a condensed six-month construction season (mid-May to mid-November). During this period workers work long hours to complete projects, typically working an estimated 1,500 hours over six months or 60 hours per week. This requires substantial overtime pay (approximately one third) for wind farm workers.

Second, the JEDI model does not adequately account for fringe benefit payments. Many wind farm workers receive benefits, such as healthcare and retirement benefits. These benefits can often be banked for future needs and utilized near a worker's permanent home, and they can account for a significant portion of total payroll. Excluding the impact of these payments significantly underestimates the overall impact of local versus non-local spending patterns.

Third, the JEDI model does not sufficiently account for different spending patterns of local and non-local workers. Based on insights from wind farm workers, we found that non-local wind farm workers largely try to live off per-diem payments while working away from their permanent home and send hourly paychecks home. Non-local workers are rooted in communities outside of Southern Minnesota. They often have families and own homes in their permanent place of residence. In contrast, local workers are rooted in Minnesota communities. They tend to spend their earnings locally.

The NSPI model compensates for shortcomings with the JEDI model and accounts for these differences in spending patterns. We replicate the NSPI model for this analysis.

### ***Wages and Benefits***

We estimate pay and benefit rates based on an average of prevailing wage rates established by the Minnesota Department of Labor and Industry for heavy industrial and highway projects across southern Minnesota. These prevailing wage rates are calculated based on wage surveys submitted by local construction employers and trade unions, and industry sources affirm that these rates are consistent with the rates commonly paid to Minnesota workers employed on wind energy projects.

Wind farm construction requires the skills of construction laborers, ironworkers, millwrights, operating engineers, and electricians. Workers in these trades typically earn between \$27 and \$38 per hour in wages and \$20 to \$26 in hourly fringe benefit contributions (e.g. healthcare, pension and vacation payments) depending on their trade. We estimate the average wage of a wind energy construction worker based on an average of the rates for each craft.

<b>TABLE 2: Average Prevailing Wage Rates Southern Minnesota<sup>14</sup></b>		
<b>Craft</b>	<b>Wage</b>	<b>Fringe Rate</b>
Laborer	\$27.99	\$20.07
Millwright/Ironworker	\$36.60	\$25.43
Operator	\$34.25	\$20.50
Electrician	\$36.90	\$20.12
<b>AVERAGE (standard)</b>	<b>\$33.94</b>	<b>\$21.53</b>
<b>Overtime</b>	<b>\$50.90</b>	

Based on interviews with wind construction workers and contractors, we found that overtime work is common as wind energy construction workers typically work long hours. In northern climates where the construction season is limited, our research indicates that the typical wind energy project may last six months, during which time workers average 60 hours per week, for a total of roughly 1,500 hours -- 1,000 hours of straight time (\$33.94 per hour) and 500 hours of overtime (\$50.90 per hour).

### ***Spending Patterns of Local and Non-Local Workers***

Local and non-local workers are assumed to perform similar work and earn similar wages on a wind farm construction project. Non-local workers are defined as workers that do not maintain a permanent residence within a daily commuting distance of the project. Non-local workers secure temporary lodgings and generally receive per-diem payments from employers to offset lodging and food costs.

Workers on wind energy projects in Minnesota typically receive per diem payments of roughly \$100 according to interviews with workers and other industry professionals.<sup>15</sup> Per diems are generally provided on working days, so non-local workers on a Minnesota wind project could be expected to receive per-diem payments six days per week over the six-month duration of a project. Thus, we estimate the total value of per-diem payments to a non-local worker employed on a Minnesota wind project to be \$15,600 (\$100 x six days a week x 26 weeks).

We expect local workers on a Minnesota wind project to earn approximately \$59,388 in pay, excluding benefits, while non-local workers should receive gross pay totaling \$74,988, excluding benefits. These estimates are calculated based on 1,000 hours of work at the standard pay level (1,000 x \$33.90) plus 500 hours of overtime (500 x \$50.90). For non-local workers, we add per-diem to their total pay (\$59,388 + \$15,600).

<sup>14</sup> This is the average prevailing wage rates across Department of Labor and Industry Regions 6, 7, 8 and 10. The millwright/ironworker rate is an average of the two crafts.

<sup>15</sup> Per diem rates are based on interview and survey data from past and current wind farm construction workers.

<b>TABLE 3: Gross Pay Non-Local Workers</b>		
	<b>Local Worker at 1500 hours</b>	<b>Non-Local Worker</b>
1500 hr Salary	\$59,387.89	\$59,387.89
Per Diem	\$0.00	\$15,600.00
Gross pay	\$59,387.89	\$74,987.89

We can estimate the amount the average local worker spends in their local area by deducting taxes and savings, and by applying an estimated share of their income that will be spent in a local area based on the work of economists that have studied the economic impact of local payrolls. The following table presents expected tax payments and savings for each worker:

<b>TABLE 3 - Tax Deductions 2018</b>		
<b>Deductions</b>	<b>Local Worker</b>	<b>Non-Local Workers</b>
Effective Federal (12.17%)	\$7,304.00	\$7,304.00
Effective FICA (7.65%)	\$3,334.00	\$3,334.00
Effective State (5.55%)	\$4,592.00	\$4,592.00
Total Tax	\$15,230.00	\$15,230.00
After Tax Income	\$44,157.89	\$44,157.89
Savings (3.1%)	\$1,368.89	\$1,368.89
After savings	\$42,789.00	\$42,789.00
Current Fringe Benefits	\$16,146.33	\$16,146.33
Deferred Fringe Benefits	\$16,146.33	\$16,146.33
<b>Total Local Spending Per Worker</b>	<b>\$55,988.56</b>	<b>\$15,600.00</b>
<b>Difference in local spending per worker</b>		<b>\$40,388.56</b>

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 are situated.<sup>16</sup> Per diems are generally not treated as taxable income.

<sup>16</sup> Tax estimates corroborated by Smart Asset’s online tax estimator. The full estimator is available at: <https://smartasset.com/taxes/income-taxes#SRQvQjkXhc>.

The average American currently saves approximately 3.1% of their income.<sup>17</sup> If we assume this trend holds, the average after-tax and after-savings income of both local and non-local workers would be about \$42,789. On top of this income, non-local workers are expected to receive \$15,600 in per-diem payments.

The economic contribution of local workers to local economies is not limited to their paychecks. Fringe benefits, which for construction workers typically include health care coverage and retirement, training, and vacation benefits can also contribute to local economic activity. Among these benefits, health care and retirement benefits account for the lion's share.

Health care contributions are usually spent in the short-term in local economies as workers and their families patronize local clinics, hospitals, and pharmacies. Retirement funds, on the other hand, are deferred and will only contribute to local economies once a worker retires and begins to draw on pension payments or retirement savings.

For this reason, we estimate that half of fringe benefit contributions (\$32,292/2 or \$16,146) have a similar impact to post-tax, post-savings income, and the other half are treated as income that is deferred to be spent after retirement.

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 region in which they live.<sup>18</sup> Thus, we would expect a construction job on a Minnesota wind energy project that is filled by a local worker to directly contribute \$55,989 in the regional economy (95% of after tax /after savings income + 50% of fringe benefits or 95% of \$42,789+ \$16,146) in the near term, and likely an additional \$16,146 over the long term. We separate the impact of fringe retirement spending because such spending is deferred until retirement so impacts may only occur five, 10, or 20 years later.

Our research indicates that non-local workers, on the other hand, seek to restrict their local spending to the amount of their per diem and can be expected to spend the remainder of their wages and benefits in their primary place of residence .<sup>19</sup> Thus, we expect that a non-local worker employed on a Minnesota wind energy project will spend \$15,600 locally over the duration of the project.

One former wind energy construction worker, explained how, "When you're traveling on a wind project, you usually get two checks: your hourly check and your per diem allowance." He

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<sup>17</sup> James Chen, "Savings Rate," May 15, 2018, Investopedia, available here: <https://www.investopedia.com/terms/s/savings-rate.asp>

<sup>18</sup> 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.

<sup>19</sup> This assumption is based on survey analysis and interviews with current and past wind energy construction and other sectors that typically employ traveling workforce.

further detailed how he, “always tried to live on my per diem and send my hourly check home. I had bills to pay at home, my house, my family.”

The near-term difference in local spending patterns between a local and a non-local worker employed on a Minnesota wind energy project is \$40,389 (\$55,989 - \$15,600). This is \$40,389 less that a non-local worker can be expected to spend at neighborhood grocery stores, car dealerships, restaurants and clothing stores. This amount is the economic stimulus gained or lost by decisions to hire local or non-local workers. The gap grows to approximately \$56,535 when deferred spending associated with retirement benefits are taken into account.

The potential gain or loss in local spending is considerable when we consider total anticipated employment on all 10 proposed wind farm projects. Based on industry standard estimates of job creation (one non-supervisory construction job per megawatt of wind energy), the projects will employ approximately 2,000 construction workers. The local economic impact of these projects could differ greatly depending on how many of the workers come from the local area or hundreds or even thousands of miles away.

It is rare for a wind energy project to employ an entirely local workforce. The leading U.S. wind energy EPCs pursue national business models and employ a national workforce that includes key personnel who are essential to the safe and successful execution of the company’s wind energy projects. There can be significant differences, however, between projects built by EPCs that partner with local workforce providers and deliver projects where a large majority (50% to 70%) of hours worked on the project are performed by local workers, and projects that rely largely on out-of-state crews where local workers account for a small share of hours worked (10% to 30%).<sup>20</sup>

The following table lays out estimates of total local spending for all 10 projects based on hypothetical levels of local and non-local construction hiring:

<b>TABLE 4 - Direct Local Spending</b>	
100% local	\$113,880,726.84
70% local	\$79,716,508.79
50% local	\$72,805,563.42
30% local	\$56,375,498.05
10% local	\$39,945,432.68
0% local	\$31,730,400.00

<sup>20</sup> The low range was originally developed based on conversations with tradesmen and women with industry experience has subsequently been validated by early results of local workforce reporting which range from 12% to 32%. The High range is based estimates from numerous tradespeople and others familiar with wind projects in Minnesota, which will be compared to results from Nobles II Wind Labor Statistics Reports once they are available.

<b>70/30% Difference</b>	<b>\$23,341,010.73</b>
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The projected difference in cumulative local spending between a project that relies on a 70% local workforce and 30% local workforce would be roughly \$23 million in current spending.

The differences in local impacts continue to 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.<sup>21</sup>

In this report, we focus on the earnings multiplier. In Nissen and Zhang’s 2006 study of the economic impact of local hiring on two major construction projects in Florida, they provide an earnings multiplier of 1.7377 for new construction work. This means that every dollar spent in a local economy will result in an additional 73.77% in economic activity, beyond the earnings of those employed on the project.<sup>22</sup>

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

<b>TABLE 5 - Total Economic Impact</b>	
Percent Local	Total Impact with Multipliers
100% local	\$197,890,539.02
70% local	\$138,523,377.32
50% local	\$126,514,227.55
30% local	\$97,963,702.96
10% local	\$69,413,178.37
0% local	\$55,137,916.08

<sup>21</sup> The following is an example of using multiplier effects on a major pipeline project in Minnesota: 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.

<sup>22</sup> 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 North Dakota.

<b>70/30% Difference</b>	<b>\$40,559,674.35</b>
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When we include economic multipliers, the present value difference in total economic impact of using 70% local workers versus 30% rises to \$17 million. When deferred retirement benefits are included, the total difference in economic impact between 70% and 30% local increases by another \$21 million to a cumulative difference of \$62 million.

<b>TABLE 7: Impact with 50% of Deferred Fringes</b>	
Percent Local	Total Economic Impact
100% local	\$252,105,996.77
70% local	\$176,474,197.74
50% local	\$153,621,956.43
30% local	\$114,228,340.29
10% local	\$74,834,724.15
0% local	\$55,137,916.08
<b>70%-30% Split</b>	<b>\$62,245,857.45</b>

For rural areas of Minnesota, these differences in local economic impacts could amount to meaningful boosts to local household and business incomes, and to the tax base for local schools and governments.

### ***The Availability of Local Workers***

Prioritizing local hiring on these wind farm projects can not only create good, family-supporting jobs for local workers and millions of dollars in local economic activity, but can also provide a pathway into a career in the construction industry. In Southern Minnesota, there are thousands of workers employed in low-wage, part-time jobs with few opportunities for upward mobility. For example, among the roughly 414,403 workers in the region, 38,099 are employed in low-wage retail, accommodations, and food service jobs. Many of these workers would welcome an opportunity for a well-paid, 40+ hour per week job with generous benefits.<sup>23</sup>

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<sup>23</sup> Arne L. Kalleberg, “Good Jobs, Bad Jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s-2000s,” 2011, Russell Sage Foundation.

**TABLE 6 - Total Employment and Wages in SE & SW Minnesota<sup>24</sup>**

Industry	Average Employment	Average Hourly Wage	Average Weekly Wage (40 hrs)	Average Annual Wage (2,080 hrs)
Health Care and Social Assistance	48,443	\$26	\$1,058	\$55,016
Manufacturing	34,478	\$28	\$1,104	\$57,408
Retail Trade	22,638	\$12	\$498	\$25,896
Educational Services	18,891	\$20	\$817	\$42,458
Accommodation and Food Services	15,461	\$7	\$297	\$15,444

We estimate that the average construction worker on a Minnesota wind energy project would earn approximately \$2,376 per week (40 hours at straight time rate of \$33.94 per hour and 20 hours as overtime rate of \$50.90 per hour) excluding fringe benefit payments. This is three to five times the average weekly earnings of a worker in accommodation, food service or retail work.

The experience and training requirements for wind energy construction workers vary widely: from positions that require specialized skills, years of experience, and a license or certification; to jobs that can be filled by individuals with little or no construction experience. When local workers are hired to build wind energy projects, some may be entirely new to construction, while others are recruited from lower-paying jobs in civil, building, and residential construction.

Some of the 38,099 workers currently employed in the retail, accommodation, or food service industries could begin work on a wind project as soon as construction begins, while others could benefit from jobs opened up when current construction workforce “moves up” to wind projects. Those employed by contractors that participate in registered apprenticeship programs would also benefit from classroom, hands-on, and on-the-job training to improve their skills and career prospects.

We expect that many of the 38,099 workers employed in industries that pay substantially less than wind energy project jobs would be eager to seize an opportunity to earn higher wages in the construction industry. Regional building and construction trades unions are ready and

<sup>24</sup> Employment data is for Q1 2019. Wage and employment data is based on averages for Southwest and Southeast Minnesota Planning Areas. A map of all planning areas is available here: <https://apps.deed.state.mn.us/assets/lmi/areamap/plan.shtml>.

willing to work with wind developers and contractors to help dispatch the existing skilled workforce, and to recruit and train a new workforce.

## **Conclusion**

The 10 proposed wind farm projects identified in the current, together with projects identified in NSPI's 2018 report that have not yet been built, have the potential to create hundreds and possibly thousands of family-supporting jobs for Minnesota residents and to inject millions of dollars into the local economies across Southern Minnesota. Project developers can maximize the benefit of the project to Minnesota by working with their EPC contractors and area skilled trades to prioritize local hiring and ensure that a large majority of construction work on each project is performed by local workers.

Minnesota has made substantial progress toward ensuring that local workers benefit from the creation of high-quality jobs on wind farm construction projects, but the work is just beginning. New data reporting standards will help to make the process more transparent, but reporting isn't enough unless developers are held accountable. Further reforms are needed if we want local jobs to be a consistent benefit of clean energy development rather than depending on the whims of a developer.

First, Minnesota should pass bi-partisan Clean Energy First legislation to ensure that local hiring efforts are prioritized in the utility resource planning process. Second, local policy makers in the communities where wind farm projects are being built need to hold developers accountable for making local hiring a priority. Third, policymakers and utilities should seek greater collaboration with state-registered apprenticeship programs, which can help to recruit and train local workers with the skills needed to help build clean energy facilities as proposed in the Mankato Energy Center settlement agreement. Through these modest efforts, the state can complete the work of ensuring that we are making efficient use of renewable energy resources and promoting a sustainable transition to a clean energy economy that works for all Minnesotans.

## **About Local Jobs North**

Local Jobs North Dakota & Minnesota seeks to promote good, family-supporting construction jobs for North Dakotan and Minnesotan workers through research and advocacy. Their goal is to educate the public and policy makers about the social and economic benefits of using local workers.

[www.locajobsnorth.org](http://www.locajobsnorth.org)

## **About the Author**

Lucas Franco is the Research Manager for LIUNA Minnesota & North Dakota, which represents more than 12,000 unionized construction laborers across Minnesota and North Dakota and is affiliated with the half-million member Laborers International Union of North America. He has completed the requirements for a Ph.D. (to be conferred September 2019) in Political Science from the University of Minnesota. He has published numerous articles and reports on employment trends in the construction industry.

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