Catching the Wind 3.0:
The impact of local versus non-local hiring practices on wind farms in North Dakota

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Local Jobs
NORTH DAKOTA MINNESOTA

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Executive Summary

North Dakota's wind energy economy is booming. The state is tenth in the nation in net generation from wind energy. In 2018, wind energy provided approximately 26% of power generated in North Dakota.[1]

There are currently at least 9 major wind farm projects either seeking permits or in pre-construction across North Dakota. These wind energy projects could generate an additional 2,435 megawatts in renewable power and add to North Dakota's already impressive wind energy portfolio.

Wind energy projects in the development pipeline could also create thousands of family-supporting construction jobs for North Dakota residents. But the state will lose many of the economic benefits of wind energy development if the firms building wind farms continue to rely heavily on the use of an out-of-state construction workforce.

Workers who live hundreds or thousands of miles away and come to North Dakota for the sole purpose of building wind energy projects can be expected to take the wages they earn back home when they leave, while local workers typically spend their wages where they reside, maximizing economic benefits to their communities. To better understand the economic significance of local hiring on wind energy projects, this report analyzes the potential impact of the use of local versus non-local workers to build proposed major wind farm projects in North Dakota.

We find the following:

- A local wind energy construction worker can be expected to spend roughly three times more locally than a non-local worker over the short-term ($52,000 versus $16,000).
- Wind energy developers currently rely heavily on non-local construction workers, who account for an estimated 86% of construction workforce on recent projects, leaving just 14% of wind construction jobs available for local workers.
- If 50% to 70% of work on all 9 projects were performed by local workers, the total projected economic impact of wind farm construction employment, including the value of deferred fringe benefits, would fall between $170 million and $210 million.

[1] American Wind Energy Association, "Wind Energy in North Dakota," https://www.awea.org/Awea/media/Resources/StateFactSheets/North-Dakota.pdf

- If just 10% to 30% of the work were performed by local workers, the total projected economic impact would be reduced by over $80 million to between $87 million and $127 million.

- Reliance on a non-local workforce is currently costing North Dakota an estimated $14.9 million per year in lost local economic activity.

North Dakota could continue to lose hundreds of jobs and millions of dollars in economic development, or the state could take a page from neighboring Minnesota, where developers, contractors, regulators, utilities, and workforce organizations have made local workforce participation a priority in the development process. Thanks to these efforts, Minnesota has experienced a dramatic turnaround in the use of local labor to build wind energy projects.

Minnesota's Public Utilities Commission now requires wind energy project owners to file quarterly reports on the use of local and non-local labor and considers local job impacts when permitting wind energy facilities. At the same time, utilities, wind energy developers and contractors have partnered with local building trades organizations to recruit, train and deploy Minnesota workers to build wind projects.

The new emphasis on local workforce is paying dividends for workers. Between 2017 and 2018, building trades organizations estimate that fewer than 20% of construction jobs on large Minnesota wind energy projects and communities across Minnesota's wind belt. In 2019, by contrast, the same organizations indicate that local residents accounted for over 50% of the wind energy construction workforce, and they expect local workforce participation to be even higher in 2020. Local ratepayers and communities are also benefiting from the transparency provided by reporting requirements that are shining a light on industry hiring practices.

Like Minnesota, North Dakota has skilled local construction workers and workforce organizations that are capable of recruiting, training, and deploying new workers through registered apprenticeship programs. There is no reason North Dakota workers shouldn't enjoy the same opportunities that are being provided to workers across the Red River Valley.

Introduction

North Dakota's wind energy economy is booming. The state now ranks tenth in the nation in net generation from wind energy.[2] There are currently at least 9 major wind farm projects seeking permits or in pre-construction in North Dakota. If constructed, these projects would generate an additional 2,435 megawatts in renewable power[3] and add to North Dakota's already impressive wind energy portfolio. Today, wind energy conversion facilities provide nearly 26% of the state's power.[4,5]

[2] American Wind Energy Association, "Wind Energy in North Dakota," https://www.awea.org/Awea/media/Resources/StateFactSheets/North-Dakota.pdf
[3] Industrial Info Resources, "Project Search," https://www.industrialinfo.com/dash/project_results.jsp.
[4] American Wind Energy Association, "Wind Energy in North Dakota," https://www.awea.org/Awea/media/Resources/StateFactSheets/North-Dakota.pdf.
[5] U.S. Energy Information Administration, "North Dakota: Profile Overview," https://www.eia.gov/state/?sid=ND.

New wind farm development has the potential to deliver economic benefits for workers, land owners, and state and local governments. The American Wind Energy Association (AWEA) estimates that, in 2018, wind farm projects in North Dakota provided annual land lease payments of between $5 million and $10 million, and generated $9.5 million in annual state and local tax payments.[6]

The majority of jobs needed to develop a wind farm are in the construction industry. A 150-200 megawatt wind farm, consisting of 35-70 turbines, requires 135-200 construction workers to build.[7] 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 place the concrete foundations for new turbines. Operating engineers prepare the site, and move and hoist the turbine components. Ironworkers assemble the tower and components, and assist with the construction of the foundation. Electricians connect the turbines to transmission lines.

These jobs offer opportunities for North Dakota workers across a broad spectrum of construction experience. 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 general construction experience (e.g. laborers with experience in pouring concrete) and some that are new to the industry with little to no construction experience (e.g. laborers working to build access roads or excavate turbine foundations). While some jobs in the wind industry require extensive experience, many do not. Thus, there could be many opportunities for local workers to secure well-paid jobs on wind farm projects.

But North Dakota loses much of the benefit of wind farm construction employment 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 nonprofits, out of state workers on wind projects tend to take the wages earned and the skills developed on wind projects back home when they leave.

Steve Cortina, a wind energy construction veteran who lives in Bismarck, observes that the wind industry seems to have forgotten local tradesmen and tradeswomen who successfully built past North Dakota wind farm projects.

“Big wind developers have forgotten that we have one of the best wind farm construction workforces in the country. There are skilled workers with wind farm experience, and others who are ready to step up to wind work, and they’re available to deliver projects safely, on-time, and on-budget. These are people that live in our area. They volunteer in their local

[6] American Wind Energy Association (AWEA), “Wind Energy in North Dakota,” https://www.awea.org/Awea/media/Resources/StateFactSheets/North-Dakota.pdf.
[7] Jobs estimates based on author’s analysis of the National Renewable Energy Laboratory’s (NREL) Jobs and Economic Development Impacts (JEDI) model.

communities, they spend their paychecks and use their health benefits at local business businesses. They're moving these local economies forward."

Data from a survey of recent wind energy projects suggests that non-local workers account for roughly 75% to 95% of construction workforce with a weighted average of 86% non-local and just 14% local workers.[8] Such low levels of local employment cause local workers to miss out on family-supporting construction jobs and regional economies to miss out on millions in socio-economic impacts.

Some developers and contractors that rely on out-of-state workers have suggested that there are not enough skilled workers to meet the workforce demands. This claim does not hold up based on the experience of projects like Sunflower and Tatanka Wind energy projects that were built with a largely local workforce according to union representatives and members who participated in the staffing or construction of the projects.[9] Further, representatives of area building trades unions have consistently indicated that they are ready and willing to recruit and train North Dakotans to safely and efficiently build wind energy construction projects.[10]

The objective of this report is to assess the economic consequences for local communities across North Dakota of decisions by developers and contractors to rely on out-of-state workforce. In order to accomplish our objective, we analyzed the economic impact of nine major wind farm projects that are in the permitting or pre-construction phase, based on a review of applications filed with the North Dakota Public Service Commission, news reports, and data obtained from Industrial Information Resources on planned wind farm projects. We find that greater use of local workers would not only create hundreds of well-paid jobs for North Dakotans, but also generate tens of millions of dollars in additional economic activity across the state.

The Wind Farm Industry in North Dakota

North Dakota is one of the top wind energy producing states. North Dakota ranked tenth in the United States in 2018 with total generation of 3,155 megawatt hours of wind power.[11] North Dakota wind farms are spread across the state. The region experiences frequent and sustained wind activity making it an ideal area to capture wind energy.

Figure 1: North Dakota wind farms[12]

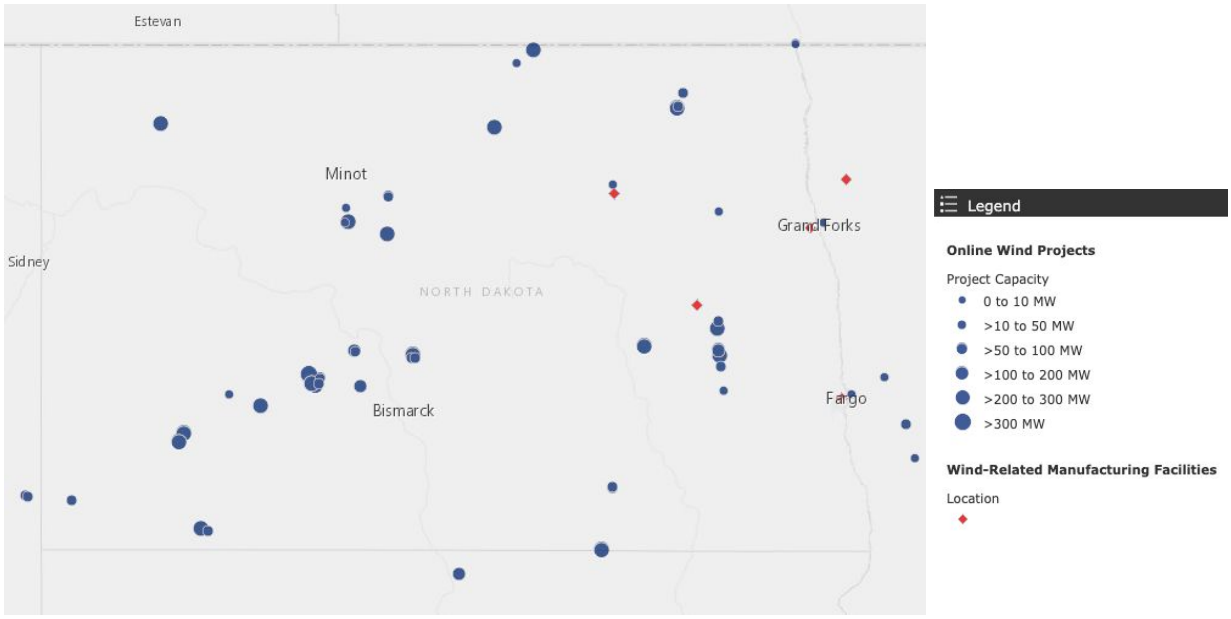
[8] Data was gathered from observations of personal vehicles on wind farm construction sites and supplemented by conversations with wind farm construction workers. For more information on the survey methodology, see testimony filed with the Minnesota Public Utilities Commission here: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=eDocketsResult&docketYear=17&docketNumber=307#

[9] Information based on informal interviews with local officials and representatives of various trade unions.

[10] Steve Cortina testimony (see footnote 9).

[11] American Wind Energy Association (AWEA), "Wind Energy in North Dakota," https://www.awea.org/Awea/media/Resources/StateFactSheets/North-Dakota.pdf..

[12] U.S. Energy Information Administration, "North Dakota," https://www.eia.gov/state/?sid=ND.



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 could increase capacity and efficiency of existing wind farms.

We have identified 9 major wind farm projects in development or pre-construction stages in North Dakota that could, if built, add more than 2,400 megawatts of wind power to the electric grid. They also have the potential to create more than 1,500 family-supporting jobs for North Dakotans if developers prioritize use of local workforce.

Table 1: Major North Dakota wind farm projects under review or in pre-construction

North Dakota Projects			
Proposed Project	**Size in MW**	**Job Estimate (1-to-1)**	**Developer**
Burke County Wind Energy Center	200	200	NextEra Energy
Aurora Wind Project	300	300	Tradewind Energy
Ruso Wind Project	205	205	Southern Power
Red Butte Windfarm	200	200	Tenaska & PRC Wind
Ward County Windfarm	300	300	NextEra Energy

Garrison Butte Windfarm	151	151	Capitol Power
Bowman Phase I & II	300	300	Apex Clean Energy
Glacier Ridge Windfarm	179	179	RES Americas
Hartland Windfarm Phase I & II	600	600	NextEra Energy
Total	2,435	2,435	

The most commonly-accepted estimate for wind farm construction job creation is one job per megawatt. Thus, we expect these projects to generate approximately 2,435 jobs.

What is the potential economic impact of using a majority local workforce rather than a largely non-local workforce on these proposed projects? 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 $62 million, not including retirement benefits. When deferred fringe benefits that will produce future spending are included, that difference grows to $82 million.

Our Economic Impact Model

Our economic impact estimates are based on the North Star Policy Institute (NSPI) model developed in *Catching the Wind: The impact of local vs. non-local hiring practices on construction of Minnesota wind farms*.[13] Prior to the NSPI report, there was not an adequate model for the economic impact of employing local versus non-local workers on 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.

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 construction season (typically mid-May to mid-November). During this period, workers generally work long hours to complete projects -- an estimated 1,500 hours over six months or an average of 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 fringe benefits, that may include health coverage, vacation, and retirement benefits. These benefits are typically banked for future needs and spent near a worker's permanent home, and they can account for a significant portion of total payroll.

[13] Lucas Franco and Katie Hatt, "Catching the Wind: The impact of local vs. non-local hiring practices on construction of Minnesota wind farms," June 2018, The North Star Policy Institute.

Excluding 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, while sending hourly paychecks home. Non-local workers are rooted in communities hundreds or thousands of miles away, where they may have families and/or own homes. By contrast, North Dakota workers are generally rooted in North Dakota communities where they spend their earnings and utilize health and other benefits.

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 U.S. Department of Labor for heavy industrial and highway projects across North Dakota. 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 North Dakota 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 $23 and $35 per hour in wages and $12 to $17 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.

TABLE 2: Prevailing Wage North Dakota

North Dakota Prevailing Wage		
Craft	**Wage**	**Fringe Rate**
Laborer	$23.78	$16.22
Millwrights/ Ironworker	$32.13	$22.61
Operator	$28.47	$16.41
Electrician	$35.64	$11.67
AVERAGE (standard)	**$30.01**	**$16.73**
Overtime	**$45.01**	

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 ($30.01 per hour) and 500 hours of overtime ($45.01 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 North Dakota typically receive per diem payments of roughly $100 according to interviews with workers and other industry professionals.[14] Per diems are generally provided on working days, so non-local workers on a North Dakota 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 North Dakota wind project to be $15,600 ($100 x six days a week x 26 weeks).

We expect local workers on a North Dakota wind project to earn approximately $52,509 in pay, excluding benefits, while non-local workers should receive gross pay totaling $68,109, excluding benefits. These estimates are calculated based on 1,000 hours of work at the standard pay level (1,000 x $30.05) plus 500 hours of overtime (500 x $45.01). For non-local workers, we add per-diem to their total pay ($52,509 + $15,600).

TABLE 3: Gross Pay Non-Local Workers

	Local Worker at 1500 hours	**Non-Local Worker**
1500 hr Salary	$52,508.75	$52,508.75
Per Diem	$0.00	$15,600.00
Gross pay	$52,508.75	$68,108.75

We can estimate the amount that the average local worker spends in his or her 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:

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

TABLE 4: Tax Deductions 2018		
Deductions	**Local Worker**	**Non-Local Workers**
Effective Federal (8.78%)	$4,449.00	$4,449.00
Effective FICA (7.65%)	$3,876.00	$3,876.00
Effective State (.9%)	$456.00	$456.00
Total Tax	$8,781.00	$8,781.00
After Tax Income	$43,727.75	$43,727.75
Savings (3.1%)	$1,355.56	$1,355.56
After savings	$42,372.19	$42,372.19
Current Fringe Benefits	$12,545.63	$12,545.63
Deferred Fringe Benefits	$12,545.63	$12,545.63
Total Local Spending Per Worker	**$52,171.92**	**$15,600.00**
Difference in local spending per worker		**$36,571.92**

These calculations are based on standard tax rates for North Dakota. The "effective" tax rate is based on an analysis of the income bracket in which workers in this income bracket are situated.[15] Per diems are generally not treated as taxable income.

The average American currently saves approximately 3.1% of their income.[16] If we assume this trend holds, the average after-tax and after-savings income of both local and non-local workers would be about $42,372. 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

[15] Tax estimates corroborated by Smart Asset's online tax estimator. The full estimator is available at: https://smartasset.com/taxes/income-taxes#SRQvQjkXhc.
[16] James Chen, "Savings Rate," May 15, 2018, Investopedia, available here: https://www.investopedia.com/terms/s/savings-rate.asp

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 ($25,091/2 or $12,546) have a similar impact to post-tax, post-savings income, while the other half is 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.[17] Thus, we would expect a construction job on a North Dakota wind energy project that is filled by a local worker to directly contribute $52,172 to the regional economy (95% of after tax /after savings income + 50% of fringe benefits or 95% of $42,372 + $12,546) in the near term, and likely an additional $12,546 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.[18] Thus, we expect that a non-local worker employed on a North Dakota 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 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 North Dakota wind energy project is $36,572 ($52,172 - $15,600). This is $36,572 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 $49,118 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 9 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 2,400 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.

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[17] 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.

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

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%).[19]

The following table lays out estimates of total local spending for all 9 projects based on hypothetical levels of local and non-local construction hiring:

TABLE 5: Direct Local Spending	
Direct Spending	Total Impact
100% local	$127,038,634.97
70% local	$100,322,844.48
50% local	$82,512,317.49
30% local	$64,701,790.49
10% local	$46,891,263.50
0% local	$37,986,000.00
70/30% Difference	**$35,621,053.99**

The projected difference in cumulative local spending between a project that relies on a 70% local workforce and 30% local workforce would be roughly $35 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.[20]

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

[19] 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 North Dakota, which will be compared to results from Nobles II Wind Labor Statistics Reports once they are available.

[20] 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.

local economy will result in an additional 73.77% in economic activity, beyond the earnings of those employed on the project.[21]

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

TABLE 6: Total Current Economic Impact (No Deferred Fringe Benefits)	
Percent Local	Total Impact with Multipliers
100% local	$220,755,035.99
70% local	$174,331,006.85
50% local	$143,381,654.09
30% local	$112,432,301.34
10% local	$81,482,948.58
0% local	$66,008,272.20
70/30% Difference	**$61,898,705.52**

When we include economic multipliers, the present value difference in total economic impact of using 70% local workers versus 30% rises by approximately $26 million to a total difference of $61 million. When deferred retirement benefits are included, the total difference in economic impact between 70% and 30% local increases by another $20 million to a cumulative difference of $82 million. Simply put, the total difference in economic impact of using 70% versus 30% local workers on the 9 currently proposed wind farm projects in North Dakota is $82 million.

TABLE 7: Total Long-Term Impact (Including Deferred Fringe Benefits)	
Percent Local	Total Economic Impact
100% local	$271,185,117.94
70% local	$209,632,064.22
50% local	$168,596,695.07
30% local	$127,561,325.92
10% local	$86,525,956.77
0% local	$66,008,272.20
70%/30% Split	**$82,070,738.30**

[21] 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 North Dakota. 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.

Finally, we estimate the annual value of economic activity lost due to the industry's reliance on non-local workforce. We identified six wind energy projects totaling 859 MW that were under construction at some point during the 2018 and 2019 construction seasons: Clean Energy #1, Emmons-Logan, Foxtail, Merricourt, New Frontier, and Thunder Spirit II. Based on observations described above, we estimate that no more than 14% of work was performed by North Dakota residents our out-of-state residents who live within commuting distance of the projects which means that locals accounted for roughly 90 of some 850 construction jobs.

We estimate using the methodology described above that the full payroll-induced economic impact of building 853 MW of wind with a 14- local workforce, including all fringe benefits, to be $33,032,458 over a two-year period. Use of a 60%-local workforce, on the other hand, could be expected to generate $71,669,185 in economic activity for a difference of $29,810,001, or nearly $15 million per year. We consider this a reasonable estimate of the economic activity that North Dakota communities are losing on an annual basis due to heavy reliance on out-of-state workforce compared to the achievable goal of a workforce where locals account for at least 60% of work performed. For rural areas of North Dakota, these differences in local economic impacts could amount to meaningful boosts or losses 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 North Dakota, there are thousands of workers employed in low-wage, part-time jobs with few opportunities for upward mobility. For example, among the roughly 413,228 workers in Q1 in North Dakota in 2019, 79,436 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.[22]

TABLE 8: Total Employment and Wages in ND Q1

Industry	Average Employment	Average Hourly Wage	Average Weekly Wage (40 hrs)	Average Annual Wage (2,080 hrs)
Health Care and Social Assistance	67,629	$24	$942	$48,984
Retail Trade	45,635	$15	$600	$31,200
Educational Services	37,217	$21	$842	$43,784

[22] 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.

Accommodation and Food Services	33,801	$9	$343	$17,836
Manufacturing	26,334	26	$1,048	$54,496

We estimate that the average construction worker on a North Dakota wind energy project would earn approximately $2,103 per week (40 hours at straight time rate of $30.05 per hour and 20 hours as overtime rate of $45.07 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.

A small number of the 79,436 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 79,436 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 willing to work with wind developers and contractors to help dispatch the existing skilled workforce, and to recruit and train a new workforce.

Conclusion

North Dakota wind farms have the potential to create hundreds of family-supporting jobs for state residents and to inject millions of dollars into the region's economy. We can maximize the benefit of these projects to North Dakota by encouraging developers and EPC contractors to prioritize local hiring and ensure that the majority of construction work on these projects is performed by local workers.

Minnesota, which has experienced a dramatic turnaround in use of local labor to build wind energy projects, provides a potential model. Minnesota's Public Utilities Commission now requires wind energy project owners to file quarterly reports on the use of local and non-local labor and considers local job impacts when permitting wind energy facilities. At the same time, utilities, wind energy developers and contractors have partnered with local building trades organizations to recruit, train and deploy Minnesota workers to build wind projects.

The new emphasis on local workforce has paid dividends for Minnesota workers. Between 2017 and 2018, building trades organizations estimate that fewer than 20% of construction jobs on large Minnesota wind energy projects were held by local workers. In 2019, by contrast, the same organizations indicate that local residents accounted for over 50% of the wind energy construction workforce, and they expect local workforce participation to be even higher in 2020. Local ratepayers and communities are also benefiting from the transparency provided by reporting requirements that are shining a light on industry hiring practices.

Like Minnesota, North Dakota has skilled local construction workers and workforce organizations that are capable of recruiting, training, and deploying new workers through registered apprenticeship programs. There is no reason North Dakota workers shouldn't enjoy the same opportunities that are being provided to workers across the Red River Valley.

About Local Jobs North

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

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 completed his Ph.D. in Political Science from the University of Minnesota in 2019. He has published numerous articles and reports on employment trends in the construction industry.

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