

Before the North Dakota Public Service Commission

**Laborers District Council of Minnesota and North Dakota
(LIUNA Minnesota & North Dakota)**

Bowman Wind Farm - Bowman County

Case No. PU-21-121

Pre-filed testimony of Kevin Pranis

on behalf of LIUNA Minnesota & North Dakota

August 6, 2021

Q. Please state your name, the name of your employer, and your business address:

- A. My name is Kevin Pranis. I currently serve as the Marketing Manager for LIUNA Minnesota & North Dakota, an affiliate of the Laborers International Union of North America, on behalf of my employer, the LIUNA Great Lakes Organizing Committee. My organization represents more than 12,000 skilled construction laborers engaged in the construction of building, civil, and energy infrastructure projects across Minnesota and North Dakota. My business address is 81 East Little Canada Road, St. Paul, Minnesota 55117.

Q. Please describe your qualifications:

- A. For the past seven years, I have managed LIUNA's strategic growth programs and energy policy portfolio in Minnesota and North Dakota, including directing and conducting extensive research on a wide range of energy issues and projects. Prior to accepting my current position with LIUNA, I served as a directed national research and growth initiatives for LIUNA and the Change to Win Labor Federation.

I earned a Master of Arts degree in Social Sciences from the University of Chicago and have conducted quantitative and qualitative research on topics ranging from criminal justice policy to workforce to energy over the past 25 years. During that time, I have authored and participated in the development of numerous published reports and white papers.

Q. What is the purpose of your testimony?

- A. First, I will summarize the findings of a research analysis that my colleague, Lucas Franco, and I produced to explore the likely socioeconomic impact of reliance on a local and non-local workforce to build the Bowman Wind project, which is provided as Attachment A.

Second, I will discuss the feasibility of building the Bowman Wind project and similar large wind projects in North Dakota using a construction workforce that consists of a majority local workforce.

Third, I will discuss the potential consequences of the approval of wind energy projects that employ few local construction workers to local workers, communities and the industry as a whole.

Fourth, I will discuss actions that the North Dakota Public Service Commission could take, consistent with its legal authority and the public interest, to maximize local benefits and minimize negative socioeconomic impacts of the Bowman Wind project and similar wind energy projects.

Q. Please describe the analysis that you and Mr. Pranis produced on the potential economic impact of construction hiring on the proposed Bowman Wind project and explain the major findings of your analysis?

- A. Lucas Franco, our organization's Research Manager, and I undertook an analysis of the potential construction employment and associated economic impacts of the Bowman Wind project. We replicated a methodology that Mr. Franco developed with researchers from the North Star Policy Institute (NSPI) to examine the employment impacts of wind energy development in Minnesota. Our findings from the Bowman Wind project analysis are as follows:

First, we found that a project such as Bowman Wind that employs local workers can positively impact local residents and communities by generating career opportunities and injecting tens of millions of dollars in construction payrolls into the local economy. We project that building such a facility with a 70% local construction workforce would create 210 jobs for local workers and generate more than \$22 million in local economic activity directly associated with construction payrolls.

Wind energy projects have the potential to create high-quality job opportunities for both experienced construction workers and new entrants to the industry. Our research indicates that North Dakota construction workers employed on wind energy construction projects will earn approximately \$54,000 in wages, roughly \$14,000 in health benefits and approximately \$14,000 in retirement benefits.

We find that the average local worker employed on a wind energy project can be expected to contribute roughly \$54,000 in direct local spending over the short term, after deducting taxes and savings and adding spending associated with health coverage. The same worker could contribute an additional \$14,000 over the long term as retirement savings are converted into retirement income. After applying a local spending multiplier, we expect each such job to generate nearly \$93,000 in short-term economic activity and over \$118,000 when retirement benefits are included.

Second, we found that employment of local construction workers to build a project like Bowman Wind can be expected to deliver significant socioeconomic benefits compared to the employment of non-local workers. We find that the typical local worker employed on a wind farm can be expected to contribute over three times more than a non-local worker in terms of local spending (\$54,000 vs. \$15,600), and their contribution can be four times greater over the long term (\$68,000 vs. \$15,600).

When this incremental difference is applied to a project similar to Bowman Wind, we find utilization of a largely local workforce (50% to 70% local) is associated with roughly \$8 million in incremental short-term economic activity compared to utilization of a largely

non-local workforce (10% to 30% local) -- a figure that grows to \$10.8 million over the long term as retirement savings become retirement income.

Third, we found that thousands of North Dakota residents could benefit from new construction career opportunities created by a large energy project such as Bowman Wind. There are more than 32,000 workers employed in accommodations and food service jobs that pay an average of \$13 per hour and typically offer few, if any, fringe benefits. Further, there are thousands of construction workers who could gain higher pay, better benefits, and career opportunities by working on the project. A job on the Bowman Wind project could be an opportunity for career advancement for such workers.

Like large pipeline projects, wind energy can create opportunities for new entrants and advancement in the construction industry. These projects do so directly in the form of entry-level jobs on a project, and indirectly, by attracting local workers from other sectors of the construction industry whose positions must be backfilled. These opportunities are only generated, however, to the extent that contractors employ local rather than non-local construction workforce.

The construction of large energy facilities such as the proposed Bowman Wind project can offer unique opportunities for current construction workers to advance their careers and for new workforce to get a foot in the door. Wind and other large energy projects create jobs with skill and experience requirements ranging from a small number of entry-level positions that can be filled by men and women with no background in the industry who are willing to show up on time, work hard, and follow directions; to positions that can be filled by men and women with some experience working on building or highway projects; to positions that can only be filled by men and women who have extensive wind industry experience.

Q. Do you conclude that it is feasible for a project such as Bowman Wind can be built using a largely local workforce? And if so, what is the basis for your conclusion?

- A. We are confident that Bowman Wind can be built using local workers because our members have participated in construction of similar projects where locals made up a majority of the workforce. We also know from past experience with other large energy projects, including the Dakota Access Pipeline, that our union and our brothers and sisters in other crafts are capable of recruiting and training local workers to fill positions that do not require extensive industry experience.

Sunflower Wind in Hebron, North Dakota, is a good example of a project that showcased the ability of local workers to deliver a safe and successful wind energy project. Sunflower is just one of several projects that have relied on a local workforce.

LIUNA has a roster of skilled local construction workers, including members with wind industry experience. The same is true of unions that represent Operating Engineers, Iron Workers, Millwrights, and Electricians. In addition to current membership, our organizations have a proven ability to recruit new workforce and to deliver state-of-the-art classroom and hands-on training to both new members and current members learning specialized skills ranging from concrete placement to the operating and rigging of the heavy cranes used to install wind turbines. There are also thousands of lower-paid construction workers in North Dakota who might welcome the opportunity to work on such a project.

Bowman Wind could draw from a pool of experienced construction workers in North Dakota. We have seen wind developers step up to the plate and deliver projects that employ majority-local workforce in rural areas of Southwest Minnesota and believe the same could be done in North Dakota.

Q. What is the basis for your concern about the potential reliance on non-local workers to build the Bowman Wind project?

- A. Two recent wind energy projects, Northern Divide Wind and Aurora Wind, have expanded North Dakota's wind generation capacity by 499 megawatts (MW) and yet each created relatively few local job opportunities based on our research. These projects had the potential to create hundreds of jobs for local residents in the midst of a COVID-induced economic crisis. Instead, they appear to have created just a handful of local jobs while employing hundreds of workers from across the country.

We estimate based on field observations that North Dakotans account for fewer than 10% of construction workers on each project. Two-thirds of the Aurora construction workforce apparently came from at least 1,000 miles away, while North Dakota and neighboring states (South Dakota, Minnesota and Montana) accounted for just 14%. Collectively, we estimated that the use of less than 10% local workers on these two projects costs North Dakota communities \$20-\$29 million in economic investment. We hope that Bowman Wind will not replicate this costly strategy of reliance on non-local workers.

Q. Why is the employment of a local workforce on wind energy construction projects a concern for your organization and your members, and why should it be a concern for the Commission?

- A. Our organization is concerned about employment of local workers on wind energy projects for two key reasons. First, we believe that outsourcing construction of wind energy jobs undercuts benefits to North Dakota residents causing local workers to miss out on good family-supporting jobs and local communities to miss out on millions in socioeconomic investment. Second, we believe that a reliance on non-local workers undercuts community support for wind energy development. Finally, we are confident that the project developer can work with their EPC contractor to employ a majority local

workforce because we have seen projects like Sunflower Wind successfully employ a majority local workforce. Unfortunately, this commitment to local communities is not always the case. In a 2019 investigation, we found that local workers accounted for fewer than 20 percent of wind energy construction jobs on large wind projects under construction in 2018, while a more recent analysis found that local workers accounted for less than 10% of the workforce on Northern Divide Wind and Aurora Wind.

This reliance on non-local labor represents more than just a missed opportunity. We are in the midst of a transmission capacity crunch across the upper Midwest. It is unlikely that all of the proposed projects in North Dakota will be about to move forward given this limited transmission capacity, as well as the limited investor capital available to finance projects. Under these conditions, approval of one project can “crowd out” other projects that must compete for customers, financing or transmission.

Approving a project with limited local employment not only has short-term negative impacts by undercutting the socioeconomic benefits of the project, but it can end up hurting local workers and communities down the road by crowding out better projects that could have delivered many more jobs and much greater economic stimulus. Additionally, we are worried that the approval of projects that create few local jobs could undermine public support for wind energy development and confidence in the permitting process.

Q. To what extent does the use of non-local workers impact displaced coal industry workers?

- A. The wind energy industry’s continued reliance on non-local workers comes at a time when the future is uncertain for many conventional energy workers. North Dakota coal and oil industries have historically created a significant number of high-quality local jobs. The decline of the coal industry in particular could displace thousands of workers. The Lignite industry currently provides employment to approximately 15,000 North Dakotans. While the innovative investment in Coal Creek Station by Rainbow Energy is a major win for North Dakota workers, we fear it could be the exception and not the rule. Coal has declined from 67% of total power production to just 19% over the past decade. As the reliance on coal declines in North Dakota, North Dakota workers will lose good family-supporting jobs. It is critical that these workers have opportunities to work on major renewable energy projects like Bowman Wind. Unfortunately, the vast majority of work has gone to non-local workers in recent years.

Q. What can the North Dakota Public Service Commission do, consistent with its legal authority, to maximize the local benefits and minimize unintended consequences of wind energy development?

- A. The North Dakota Public Service Commission has authority to consider local workforce impacts, including utilization of local construction labor, when evaluating the suitability of

proposed wind energy projects for a site permit under Title 69, Article 6, Chapter 8 of the North Dakota Administrative Code. The Commission is further authorized under Chapter 68 to condition the issue of a permit, in proper cases, on the adoption of policies and practices that the Commission finds necessary to maximize such benefits. We believe that the Commission can and should exercise its authority where it finds local job impacts to be relevant to its consideration of site permit applications.

Q. Have any neighboring states taken similar steps to maximize the local employment benefits and increase transparency in wind energy development?

- A. Minnesota's Public Utilities Commission has recently taken action in both areas. In late 2018, Minnesota's Commission began requiring successful applicants for permits to build or retrofit wind energy facilities to submit quarterly reports on the number of Full-Time Equivalent workers (FTE) or hours worked by local workers -- including both Minnesota residents and residents of neighboring states living within 150 miles of the project -- and non-local workers.

Minnesota's Commission recognized that it made little sense to require collection of detailed information on environmental impacts, but no information on how many local residents were eventually employed on projects that promised to create hundreds of new construction jobs. Permits have been issued for multiple wind and solar energy construction projects since the Commission began requiring local hire reporting.

In December of 2018, Minnesota's Commission also made employment of local construction workers an explicit consideration in a case where the Commission referred applications for a Certificate of Need and Site Permit to contested case hearings based on concerns over expected reliance on non-local construction labor. The proposed project was subsequently sold to another different developer and is expected to create many more employment opportunities for local workers.

Use of local workforce has increased substantially in Minnesota since 2018 according to MPUC Chair Katie Sieben who testified before a U.S. Senate Subcommittee on Rural Development and Energy that local participation in utility-scale wind and solar installation had jumped "from 20 to upwards of 70 percent".

Q. Does this conclude your testimony?

- A. Yes

**Maximizing The Benefits of Wind Energy
Development Through Local Construction
Hiring:
A Case Study of the Bowman Wind Farm**

August 2021

Kevin Pranis and Lucas Franco

Maximizing The Benefits of Wind Energy Development Through Local Construction Hiring: A Case Study of the Bowman Wind Farm

August 2021

Executive Summary

North Dakota's wind energy economy is booming. The state now ranks ninth in the nation in net generation from wind energy. In 2019, wind energy provided approximately 27% of power generated in North Dakota,¹ and despite the onslaught of COVID-19 new wind energy development continued throughout 2020 and 2021.

The proposed Bowman Wind project will expand North Dakota's clean energy portfolio, while creating an estimated 300 construction jobs, of which many could potentially be filled by local workers. Yet the full economic benefits of the project may only be realized to the extent that local workers are given the opportunity to fill construction jobs generated by the project. The wages and fringe benefits paid to local workers help to boost local economies, while non-local workers typically take their paychecks home with them when the project is complete.

To better understand the consequences of using local versus non-local workers on the Bowman Wind project, we have analyzed the potential economic impact of the project. We find the following:

- If 70% of construction work on a wind installation the size of the proposed Bowman Wind project is performed by local workers, construction payrolls can be expected to generate approximately \$22 million in local economic activity.
- The use of a non-local construction workforce (between 10% to 30% local) to build the Bowman Wind project could cost local communities \$8 million or more in lost payroll and local economic activity compared to a project that employs a largely local workforce (50% to 70% local).
- When retirement benefits are included, the expected difference between a largely local and non-local project grows by \$2.8 million to approximately \$10.8 million.

The reliance on non-local workers to build North Dakota wind farms is an all too common problem that has cost local communities millions in lost economic benefits in recent years. Two recent wind energy projects, Northern Divide Wind and Aurora Wind, have expanded North Dakota's wind generation capacity by 499 megawatts (MW) and yet each created relatively few local job opportunities based on our research. These projects had the potential to create hundreds of jobs for local residents in the midst of a COVID-induced economic crisis. Instead, they appear to have created just a handful of jobs for North Dakotans and residents of neighboring states while employing hundreds of workers from across the country.

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

We estimate based on field observations that North Dakota residents account for fewer than 10% of construction workers on each project.² Two-thirds of the Aurora construction workforce apparently came from at least 1,000 miles away, while North Dakota and neighboring states (South Dakota, Minnesota and Montana) accounted for just 14%. Collectively, we estimated that the use of less than 10% local workers on these two projects costs North Dakota communities \$20-\$29 million in lost economic investment. We hope that Bowman Wind does not replicate this costly strategy of relying primarily on non-local workers.

The wind energy industry's continued reliance on non-local workers comes at a time when many conventional energy workers are facing layoffs. North Dakota energy jobs in coal and oil have historically created high quality local jobs. The decline of the coal industry in particular could displace thousands of workers. Currently approximately 15,000 people have jobs related to the lignite industry in North Dakota.³ While Rainbow Energy's acquisition of Coal Creek Station and plans to install carbon capture technology amount to a major win for North Dakota workers, it could be the exception not the rule. Coal accounted for 67% of total power production in 2010, while it accounts for only 19% today.⁴ As the reliance on coal declines in North Dakota, local workers will lose good family-supporting jobs. It is critical that these workers have opportunities to work on major renewable energy projects. Unfortunately, the vast majority of work has gone to non-local workers in recent years.

North Dakota Public Service Commission ("Commission") has authority to consider local workforce impacts, including utilization of local construction labor, when evaluating the suitability of proposed wind energy project for a site permit under Chapter 69-06-08 of the North Dakota Administrative Code. But ultimately it is developers such as Apex Clean Energy (Apex) that have the power to maximize the local benefits of wind energy projects by committing to greater efforts to prioritize employment of local workers.

Economic Impact of Local versus Non-local Hiring on Construction of the Proposed Bowman Wind project

Wages and Benefits

The creation of construction jobs is not the only local benefit of wind energy development, but it is among the most significant, in terms of economic impacts alongside the lease and tax revenues that wind energy projects typically deliver to local residents and host communities. Wind energy construction jobs can provide middle-class wages and high-quality health and retirement

² Lucas Franco, "The High Cost of Labor Outsourcing: A Case Study of Two North Dakota Wind Projects," Local Jobs North Dakota and Minnesota, January 2021.

³ State Historical Society of North Dakota, "How Coal Production Affects the People of North Dakota," North Dakota Studies, module available here:

<https://www.ndstudies.gov/energy/level2/module-3-coal/how-coal-production-affects-people-north-dakota>.

⁴ Karin Rives, "ND plant sale a rare win for coal-fired generation boosters," S&P Global Market Intelligence, July 1, 2021.

benefits. These benefits are all-too-scarce for blue-collar workers in many of the rural areas where wind farms are typically built.

Construction job opportunities are frequently cited as a benefit of wind energy development in both media coverage and permitting processes. But until recently, little attention has been paid to the impact of decisions by developers and contractors to build projects with a largely local or non-local construction workforce. In 2018, North Star Policy Institute, a policy think tank based in St. Paul, Minnesota, undertook a study of wind energy construction in Minnesota and found that tens of millions of dollars in anticipated local economic benefits are at risk due to use of non-local labor. The findings are published in *Catching the Wind: The impact of local vs. non-local hiring practices on construction of Minnesota wind farms*, a report that was published in June of 2018.⁵

In this brief, the authors have employed the methodology used in *Catching the Wind* to estimate the local economic impact of the use of local and non-local labor on the construction of a wind energy facility, such as the proposed Bowman Wind project. Our analysis begins by estimating the wages and benefits that would be paid to construction workers. Apex has not yet announced the selection of an Engineering Procurement & Construction (EPC) contractor to build the project, so it is impossible to know with certainty the wages that would be paid to workers employed on the project. We can, however, estimate pay and benefit rates based on the prevailing wage rates established by the U.S. Department of Labor for heavy industrial construction projects in 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 \$25 and \$35 per hour in wages and \$15 to \$25 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 1: Prevailing Wage North Dakota⁶		
North Dakota Prevailing Wage		
Craft	Wage	Fringe Rate
Laborer	\$25.45	\$18.67

⁵ Katie Hatt and Lucas Franco, “Catching the Wind: The impact of local vs. non-local hiring practices on construction of Minnesota wind farms,” North Star Policy Institute, June 2018, available here: <https://northstarpolicy.org/catching-the-wind-the-impact-of-local-vs-non-local-hiring-practices-on-construction-of-minnesota-wind-farms>

⁶ These wage and fringe rates are based primarily on federal Davis-Bacon rates for heavy construction work for Adams, Billings, Bowman, Divide, Golden Valley, Hettinger, Slope. The carpenter/ironworker rate is a blended rate. All Davis-Bacon rates for North Dakota are available on the General Services Administration website: <https://sam.gov/wage-determination/ND20210045/2>

Millwrights/Ironworker	\$33.44	\$25.16
Operator	\$29.23	\$16.49
Electrician	\$34.92	\$15.31
AVERAGE (standard)	\$30.76	\$18.91
Overtime	\$46.14	

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 (\$30.76 per hour) and 500 hours of overtime (\$46.14 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.⁷ 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 \$53,830 in pay, excluding benefits, while non-local workers should receive gross pay totaling \$69,430, excluding benefits. These estimates are calculated based on 1,000 hours of work at the standard pay level (1,000 x \$30.76) plus 500 hours of overtime (500 x \$46.14). For non-local workers, we add per-diem to their total pay (\$53,830 + \$15,600).

TABLE 2: Gross Pay for Local and Non-Local Workers		
	Local Worker at 1500 hours	Non-Local Worker
Wages	\$53,830.00	\$53,830.00
Per Diem	\$0.00	\$15,600.00
Gross Earnings	\$53,830.00	\$69,430.00

⁷ Per diem rates are based on interview and survey data from past and current wind farm construction workers.

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 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:

TABLE 3: Deductions		
Deductions	Local Worker	Non-Local Worker
Effective Federal (9.38%)	\$5,158.00	\$5,158.00
Effective FICA (7.65%)	\$4,206.00	\$4,206.00
Effective State (.89%)	\$491.00	\$491.00
Total Tax (18.15%)	\$9,855.00	\$9,855.00
After Tax Income	\$43,975.00	\$43,975.00
Savings (9.4%)	\$4,133.65	\$4,133.65
After Savings	\$42,611.78	\$42,611.78
Current Fringe Benefits	\$14,180.82	\$14,180.82
Deferred Fringe Benefits	\$14,180.82	\$14,180.82
Total Local Spending Per Worker	\$53,952.97	\$15,600.00
Difference in Local vs. Non-Local Spending	\$38,352.97	

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. Per diems are generally not treated as taxable income.⁸

The average American currently saves approximately 9.4% of their income.⁹ If we assume this trend holds, the average after-tax and after-savings income of both local and non-local workers would be about \$42,612. 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, 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.

⁸ Tax estimates corroborated by Smart Asset’s online tax estimator. The full estimator is available at: <https://smartasset.com/taxes/income-taxes#SRQvQjkXhc>.

⁹ Statista Research, “Personal saving rate in the United States from June 2015 to June 2021,” Statista, July 2021, available here: <https://www.statista.com/statistics/246268/personal-savings-rate-in-the-united-states-by-month/#statisticContainer>.

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 conclude that half of fringe benefit contributions (\$28,362/2 or \$14,181) 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.¹⁰ Thus, we would expect a construction job on a North Dakota wind energy project that is filled by a local worker to directly contribute \$53,953 in the regional economy (95% of after tax/after savings income + 50% of fringe benefits) in the near term, and an additional \$14,181 over the long term.

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.¹¹ 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.

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 \$38,353. This is \$38,353 less per worker than non-local workers 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 \$52,534 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 a large wind energy development such as the proposed Bowman Wind project. Based on past projects of a similar size, we expect the Bowman Wind project will create approximately 300 construction jobs. The local economic impact of the project 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

¹⁰ 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.

¹¹ This assumption is based on survey analysis and interviews with current and past wind energy construction and other sectors that typically employ traveling workforce.

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%).

The following table lays out estimates of total payroll and total local spending for a project similar to Bowman Wind project at different hypothetical levels of local and non-local construction hiring:

TABLE 4: Total Spending		
Percent Local Workers	Total Payroll	Total Local Spending
100%	\$24,657,492.00	\$16,185,889.58
70%	\$26,061,492.00	\$12,734,122.70
50%	\$26,997,492.00	\$10,432,944.79
30%	\$27,933,492.00	\$8,131,766.87
10%	\$28,869,492.00	\$5,830,588.96
0%	\$29,337,492.00	\$4,680,000.00

The projected difference in cumulative local spending between a project that relies on a 70% local workforce and a 30% local workforce would be roughly \$4.6 million in current spending. When spending associated with deferred retirement benefits is included, the projected difference grows to approximately \$6.2 million.

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.¹²

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.¹³

¹² 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.

¹³ 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.

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

TABLE 5: Total Local Spending with Multiplier	
Percent Local	Total Economic Impact with Multiplier
100%	\$28,126,220.31
70%	\$22,128,085.02
50%	\$18,129,328.16
30%	\$14,130,571.29
10%	\$10,131,814.43
0%	\$8,132,436.00

When we include economic multipliers, the present value difference in total economic impact of using 70% local workers versus 30% rises to \$8 million. When deferred retirement benefits are included, the total difference in economic impact between 70% and 30% local increases to \$10.8 million. For rural areas of North Dakota, these differences in local economic impacts could amount to meaningful boosts to local household and business incomes and tax base for local schools and governments.

The Availability of Local Workers

Prioritizing local hiring on the Bowman Wind project 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 for many regional workers. Throughout North Dakota there are thousands of workers employed in low wage jobs that might welcome an opportunity for a well-paid, 40+ hour per week job with benefits.¹⁴ This group includes current construction workers for whom the project could be an opportunity to earn better pay and benefits, and new skills that would make them more productive and marketable to construction employers.

¹⁴ Occupational Employment and Wage Statistics data for North Dakota is available through the North Dakota Job Service Labor Market Information portal. All data is available here: <https://www.ndlmi.com/vosnet/analyzer/resultsNew.aspx?session=oeswage>.

TABLE 6: Total Employment and Wages in North Dakota 2020¹⁵				
Industry	Average Employment	Average Hourly Wage	Average Weekly Wage (40 hrs)	Mean Annual Wage
Office and Administrative Support	49,310	\$20	\$808	\$42,000
Transportation and Material Moving	39,020	\$22	\$879	\$45,720
Sales and Related	36,870	\$22	\$865	\$44,980
Food Preparation and Serving Related	32,000	\$13	\$535	\$27,800
Construction and Extraction	31,920	\$27	\$1,098	\$57,080

We estimate that the average construction worker on a North Dakota wind energy project would earn approximately \$2,200 per week (40 hours at straight time rate of \$30.76 per hour and 20 hours at an overtime rate of \$46.14 per hour) excluding fringe benefit payments. This is three to four times the average weekly earnings of a worker in sales, food preparation and serving.

There are jobs on a project like the Bowman Wind project that require little construction experience. Some workers who are new to construction could perform such jobs with minimal training. 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. Further, Bowman Wind will create jobs that could be filled by workers who currently hold lower-paid positions with building and civil contractors, which would in turn create openings for new workers.

We expect, based on past experience with large energy construction projects, that many of the 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

The Bowman Wind project has the potential to create hundreds of family-supporting jobs for North Dakota residents and to inject millions of dollars into the region's economy. Apex can maximize the benefit of the project to North Dakota by working with the EPC contractor selected to build the project to prioritize local hiring and ensure that the majority of construction work on the project is performed by local workers.

¹⁵ Full data available through the U.S. Bureau of Labor Statistics: https://www.bls.gov/oes/2020/may/oes_nd.htm.

Minnesota wind energy developers and policymakers recently began taking steps to maximize the local benefits of wind energy development. The Minnesota Public Utilities Commission (“MPUC”) has made the submission of quarterly reports on the employment of local and non-local construction workforce a standard feature of site permits for wind energy facilities. MPUC has also expressed a strong preference for wind energy projects that maximize employment opportunities for local construction workers, including a recent case where an application for a site permit was referred to a contested case hearing over local hiring concerns.

In June, MPUC Chair Katie Sieben testified before a U.S. Senate Subcommittee on Rural Development and Energy on the success of these efforts, observing that local participation in utility-scale wind and solar installation had jumped “from 20 to upwards of 70 percent”.¹⁶ We see no reason to believe that similar results could not be achieved in North Dakota.

¹⁶ Sieben, Katie. Testimony before the U.S. Senate Subcommittee on Rural Development and Energy. June 22, 2021. https://www.agriculture.senate.gov/hearings/renewable-energy_-growth-and-opportunities-for-our-rural-economies

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