



# WIND ENERGY

POWERING HUMAN DEVELOPMENT



WIND POWER HAS PROVEN TO BE A CLEAN AND RELIABLE ENERGY SOURCE TO HELP MEET THE GROWING GLOBAL DEMAND FOR ELECTRICITY. NONETHELESS, ITS ROLE IN A CLEANER ENERGY FUTURE DEPENDS ON CONTINUED COST REDUCTION AND MANAGEMENT OF TECHNICAL, ENVIRONMENTAL AND FINANCIAL RISKS. WHATEVER AND WHEREVER THE CHALLENGE, WSP'S GLOBAL TEAM OF EXPERTS HELPS MANAGE THESE RISKS AND REALISE WIND ENERGY'S POTENTIAL.

10 GW+

Operating project  
experience

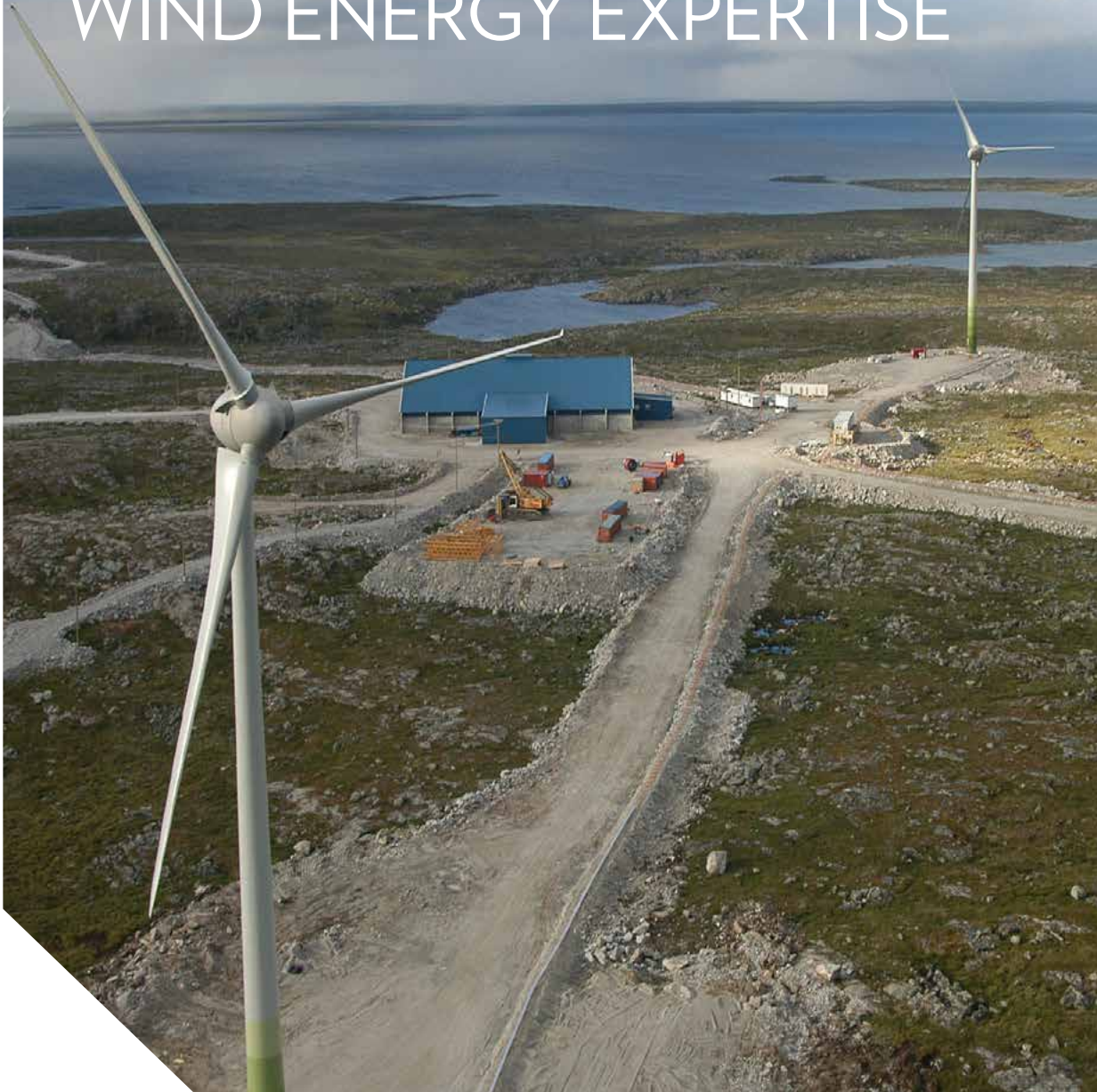
200+

Energy professionals

25+

Years of Wind Energy  
experience

# DELIVERING WORLD-CLASS WIND ENERGY EXPERTISE



Developing wind energy projects is challenging. A significant up-front investment of capital is required, and while the fuel is free and renewable, the variability of the resource leads to inevitable uncertainty in characterizing yields and returns.

Optimizing wind power project performance requires consideration of not only the resource but also siting constraints and the costs of construction and operation. Proper management of these risks helps ensure project viability and profitability.

For more than 25 years, WSP's team of dedicated wind energy experts has developed expertise providing technical services for hundreds of wind projects. Our team offers a comprehensive

range of services that cover the entire life-cycle of a wind farm, including: energy assessments, detailed engineering design, environmental studies and owner's engineering services.

In our work with wind farm owners, EPC contractors, lenders, and turbine suppliers, we have earned a reputation for value added services, quality and professionalism. Working with these various entities, WSP has developed unique expertise in all technical aspects of the development, construction and operation of wind projects. The breadth and depth of WSP's experience enables us to employ a holistic approach that is both insightful and practical.



## CREATING SOLUTIONS FOR THE FUTURE

To help the wind industry in its quest for continued growth and competitiveness, WSP's team leads the way in providing solutions that are innovative, comprehensive, and pragmatic. Our team includes leaders in their fields of expertise and we pride ourselves on collaborating with our clients to address the challenges that they face. Here are key elements of our approach:

- Advancing the state-of-the-art through research and active participation in wind industry committees, publications and events
- Understanding the importance of timelines, schedules and meeting deadlines
- Listening to client needs and tailoring our services and deliverables accordingly
- Utilizing our extensive project experience to provide practical and comprehensive solutions to maximize wind farm performance
- Emphasizing clear and responsive communication
- Using our global reach to provide local support and expertise



### 01 LEMNHULT AND TVINNESHEDA-BADEBODA WIND FARMS, SWEDEN

Provided a wide range of services including advice on environmental law, environmental impact assessment, design of the wind farm itself, as well as analysis of the landscape, acoustics and transportation around the site.

### 02 ST-PHILÉMON QUEBEC, CANADA

Provided project development as well as engineering and construction services. The scope of work included turbine siting, project planning, detailed engineering design, contract reviews, interconnection studies and coordination with the utility, construction management and construction monitoring.

### 03 BLACKSPRING RIDGE ALBERTA, CANADA

Supported various aspects of the Blackspring Ridge project in southern Alberta, including: meteorological tower installation, data monitoring, wind resource assessment, due diligence, SCADA design and implementation, and power performance testing.

*Photo courtesy of Enbridge Inc.*

## GLOBAL EXPERTISE

WSP is a trusted global provider of wind energy advisory services and engineering solutions. We understand our clients' aspirations and support them with tailored solutions for all project types and sizes.

WSP's wind energy project experience spans more than 25 years and 5 continents. Our unique combination of specialist skills backed by our global reach enables us to offer the latest thinking and best client service, no matter the challenge. In addition to the professionalism expected of a large international professional services firm, we bring the level of personal attention and local support required to make our clients' projects a success.

## WHAT WE DO

### PROJECT DEVELOPMENT

Project planning and feasibility studies

Preliminary engineering and design

Environmental assessment and permitting

Resource assessment and modeling

### ENGINEERING AND CONSTRUCTION

Detailed engineering

Owner's Engineer services

Construction management (EPCM)

Commissioning, testing and start-up

### DATA MANAGEMENT (WINDSERVER™)

Online data management

Total data analysis and reporting

Equipment life cycle tracking

### OPERATIONS AND ASSET MANAGEMENT

Performance assessment

Condition assessment

Risk and safety analysis

Engineering and design

### MERGERS, DIVESTITURES AND ACQUISITIONS

Advisory services and project risk review

Independent engineer services

Technical due diligence analysis

500

Offices around the world

34,000

WSP employees worldwide

## ABOUT WSP

WSP and Parsons Brinckerhoff have combined and are now one of the world's leading engineering professional services consulting firms. We bring together our 34,000 staff, based in more than 500 offices, across 40 countries to provide engineering and multidisciplinary services in a vast array of industry sectors, with a focus on technical excellence and client service.

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