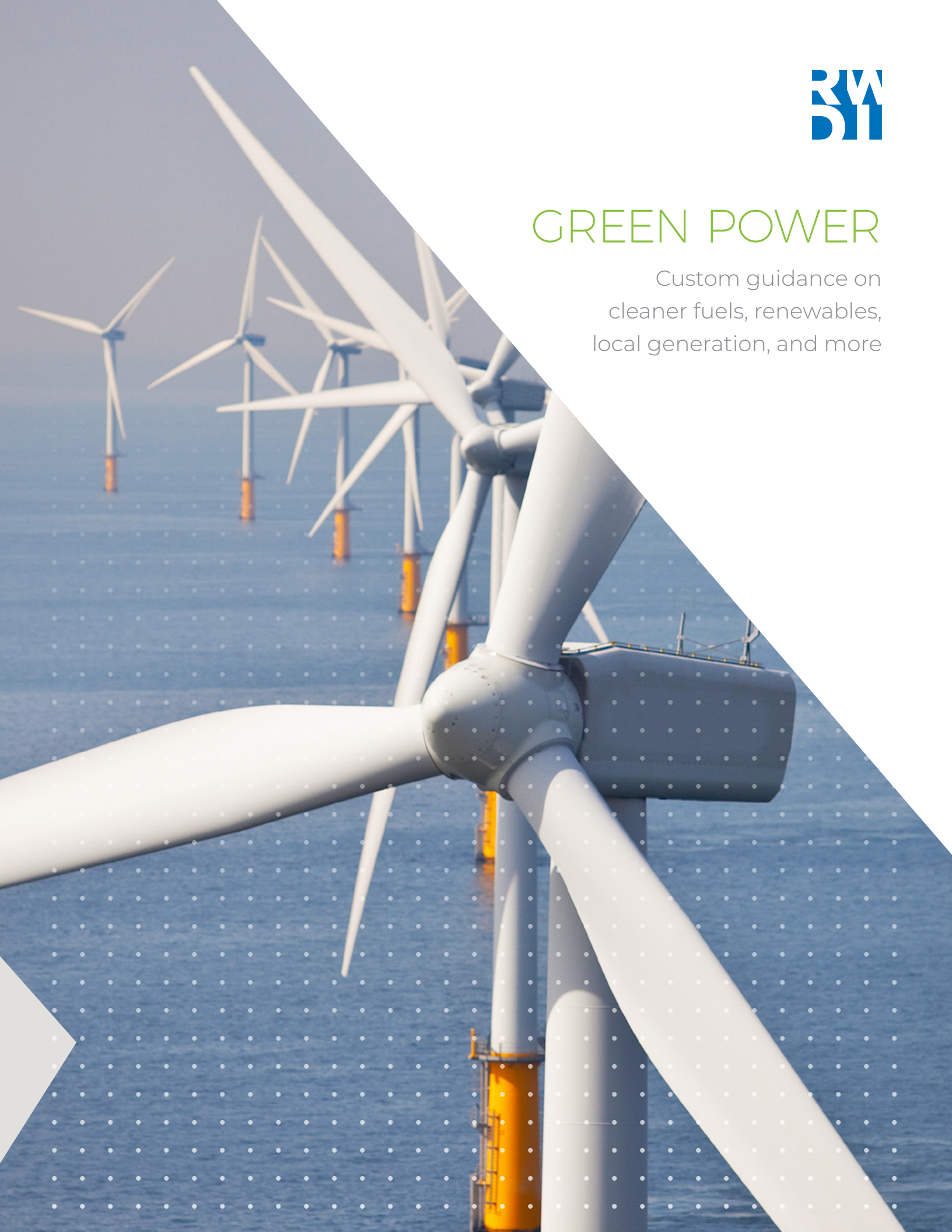


GREEN POWER

Custom guidance on
cleaner fuels, renewables,
local generation, and more

ADVANCED INSIGHTS FOR EFFICIENCY, SUSTAINABILITY AND RESILIENCE

Our engineers and sustainability specialists help businesses and communities evaluate diverse energy solutions and implement greener approaches that fit their unique needs and contexts.

RWDI brings a powerful combination of technical depth, field-leading climate and sustainability insight, and on-the-ground experience – including in remote areas. We have a record of helping clients gain clarity about their green energy options, identify optimal solutions, and implement their choices with confidence.

RWDI is a valuable partner to clients seeking to...

Fulfill Expectations

- meet financial performance targets by quantifying expected operational costs and returns
- select the most appropriate mix of technology and make a clear, evidence-based case to management and stakeholders
- reduce greenhouse gas emissions and carbon footprint

Explore Innovations

- get a clear picture of your green energy options – from simple enhancements to state-of-the-science transformations
- adapt solar arrays, turbines, and other assets to their unique microclimate and wind environment
- choose cutting-edge technologies with confidence

Meet Challenges

- improve your energy system's resilience to extreme weather
- boost local generation to end dependence on costly, polluting and often unreliable diesel supply
- mitigate noise and air quality impacts

Create Opportunities

- obtain as many incentives as possible
- receive specialist guidance on carbon trading opportunities
- use sophisticated tools and proprietary data sets to quantify wind and solar energy potential anywhere in the world
- get an accurate picture of the costs and savings associated with different energy solutions

WHAT WE DELIVER

RWDI helps businesses and communities adopt greener power solutions – improving their energy systems' performance, serviceability, and resilience.

Full life-cycle support
We offer valuable guidance from the early stages of conception and feasibility exploration through to operations, maintenance and decommissioning. This includes:

- masterplanning
- land-use assessments
- integrated resource plans
- regulatory guidance
- resource assessment
- stakeholder engagement
- permitting
- commissioning
- decommissioning

Collaboration and communication
RWDI is known for our collaborative culture and commitment to clear, meaningful communication with stakeholders – from nearby residents, to senior managers to regulators. We not only deliver technically advanced solutions, we help clients show the difference their choices are making – in terms of environmental impact, technical performance, and business results.

A powerful suite of capabilities
Our team combines renowned engineering knowledge with deep expertise in sustainability, weather and climate, regulation, and green certification systems. We help clients quantify and document their greenhouse gas emissions, navigate evolving regulatory regimes, and get the most out of credit and incentive systems.

WHO WE HELP

Our engineers and technical specialists have worked with hundreds of clients across a wide range of sectors and geographies, including mining firms, oil and gas operators, utilities, and municipalities.

A growing number of communities and industrial operations want to diversify their power sources and take steps toward greener energy. RWDI helps them assess the feasibility of available resources (hydro, biomass, wind, solar) and establish the most promising options. We also deliver specialist support in the evaluation of prospective green-tech vendors – working alongside our clients to assess the value and appropriateness of proponents' offerings.

What about remote communities?
Our team combines renowned engineering knowledge with deep expertise in sustainability, weather and climate. We have also successfully collaborated with Indigenous communities and we respect traditional knowledge. We work with local leaders to optimize green-energy supply while protecting important ecosystems and natural heritage, supplying technical insights and data to support informed decision making.

WIND

Our engineers can use advanced tools and proprietary data sets to quantify wind-power potential for sites anywhere on earth. Once you've chosen an area for wind harvesting, we offer guidance on siting individual turbines to maximize energy and mitigate noise impacts. Our teams also deliver wind loading analysis and supplementary damping solutions to ensure the performance and reliability of the largest turbines.

Coastal & Offshore Wind

- Wind loading analysis and damping solutions for standing and floating turbines
- Studies, forecasts, and modeling for wind gusts, waves, and wake effect
- Technical support for construction and maintenance of wind-power infrastructure (e.g., identifying optimal windows for shipping equipment to floating turbine sites)

Weather Forecasting
Wind and Wave Forecasting
Wind Loading Analysis
Supplementary Damper Systems

On-Shore Wind Farms

- Guidance on turbine siting to maximize energy and minimize noise impacts
- Monitoring and modeling for noise and vibration impacts
- Computational Fluid Dynamics (CFD) modeling

Noise Modeling and Monitoring
Wind Climate Analysis
Feasibility Studies

SOLAR

We help clients quantify the solar-power potential of sites around the world, using advanced software to precisely model solar energy every minute of the year. RWDI works closely with clients on equipment selection, siting and orientation to maximize efficiency and return on investment.

Urban Solar Power Installations

- Specialist support to maximize credits, incentives and certification opportunities
- Quantify solar-power potential for sites anywhere on earth
- Guidance to optimize equipment selection, siting, and orientation

Feasibility Studies
Building Performance
Commissioning
Glare Studies

Solar Power Farms

- Wind loading analysis – including CFD modeling and wind tunnel testing – to optimize component design and system configuration
- Precise, custom weather forecasting to support optimized stow regimes – maximizing energy harvesting while protecting solar equipment from extreme weather

Wind Blown Sand or Snow Modeling
Vibration Analysis
Wind Loading Analysis
Permitting
Feasibility Studies
Risk Assessment Services

Hydrogen

- Flow optimization for green and blue hydrogen production and pipeline transportation
- Noise , vibration and CFD studies for carbon capture and storage
- Path to NetZero consultancy

Noise & Vibration
Computational Fluid Dynamics (CFD)
Process Engineering

Co-Gen / CHP Gas Plant

- Engineering insights for district energy centres and other key co-generation infrastructure

GHG Quantification & Verification
Noise & Vibration
Air Quality Modeling
Source Testing & Ambient Monitoring

Battery Energy Storage

Noise Studies
Ventilation Modelling
Overheating Risk Assessment

Hydro-Electric

- Support for large-scale dam and power generation station construction

Climate Studies
Dust Modeling
Ambient Air & Noise Monitoring

HYDROGEN
CO-GEN CHP
CARBON CAPTURE STORAGE
WIND
BIOMASS
SOLAR
HYDRO
BATTERY ENERGY STORAGE

WASTE TO ENERGY

Our engineers and environmental specialists help businesses and communities successfully harvest energy from wood waste products, composting, biodigesters, landfills, and agricultural biomass and methane – while managing related concerns such as odor, fugitive emissions, and ventilation challenges.

Odor Modeling
Ventilation Modeling
Environmental Stewardship
Stormwater Management
Source Testing
Noise Modeling and Monitoring
Permitting

Renewable Gas

- Support for energy harvesting from solid waste, compost, and agricultural products
- Odor and ambient air quality modeling
- Ventilation modeling and design guidance

Solid Waste Management
Fugitive Emissions
Odor & Ambient Air Quality Modeling
Permitting

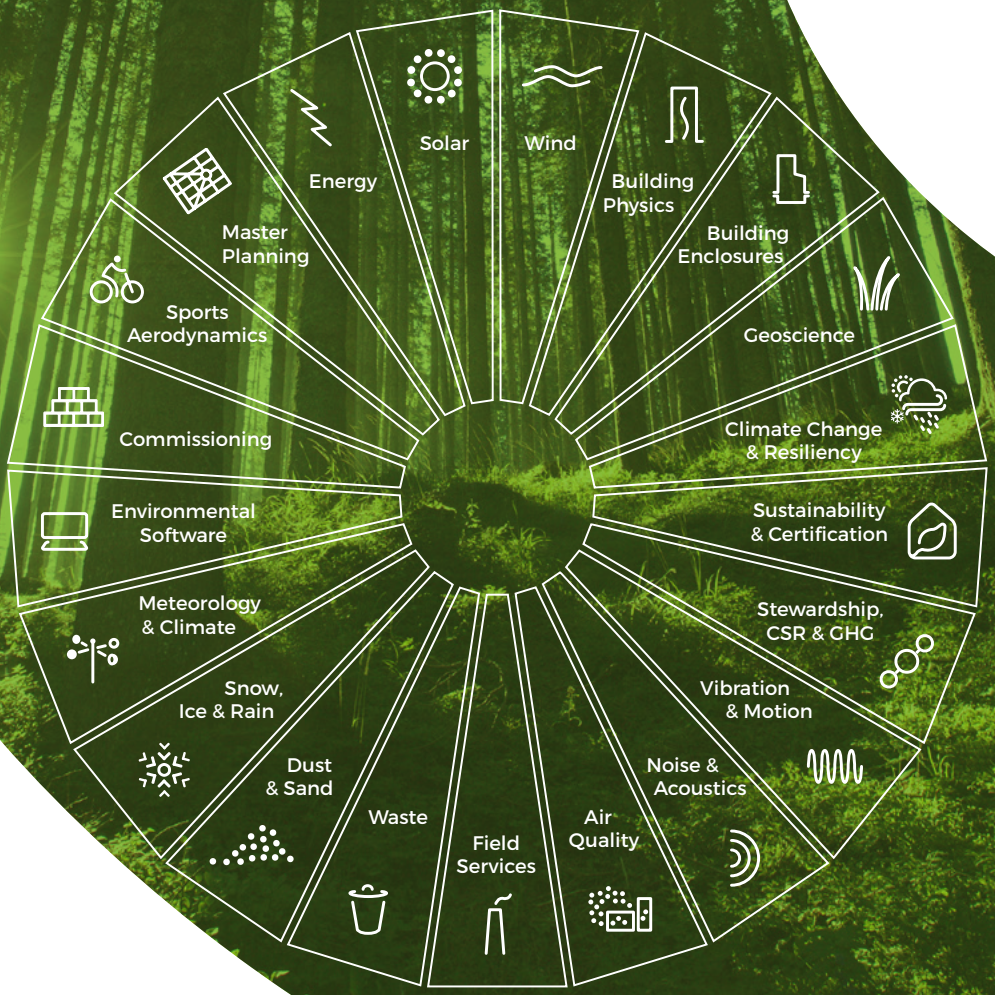
Transmission Lines

- Technical guidance on planning, construction, and maintenance of power lines
- Knowledge sharing and collaboration with Indigenous communities
- Noise, vibration, and air quality monitoring during construction of transmission infrastructure
- Icing and wind-gust forecasts, and monitoring during operation

Wind Gust Monitoring
Icing
Noise & Vibration
Dust Monitoring

Services

RWDI's core practice areas bring together a diverse array of capabilities around a common purpose: meeting the immediate aims and broader business goals of our clients.



CANADA'S BEST MANAGED COMPANIES Platinum member

RWDI Global Headquarters:
600 Southgate Drive, Guelph,
Ontario, Canada N1G 4P6
Tel: +1.519.823.1311

rwdi.com

Redefining possible.