



TRAVERSE WINDDESK

Industry Standard Wind Engineering Services

10x Faster than Status Quo

Unlimited Variation and Permutation Requests

**TRAVERSE: YOUR
TRUE OWNER'S
ENGINEER IN WIND
ENERGY****WE TAKE PROJECT DEVELOPMENT RISK WITH YOU:**

- INDUSTRY STANDARD WORK covering early-stage greenfield prospecting and late-stage project development.
 - 10X THE SPEED of other engineers.
 - Variation requests and periodic updates at **NO ADDITIONAL COST**.
 - DIRECT TO IRR / LCOE / NPV WINDFARM OPTIMIZATION.
 - **BACK-ENDED SUCCESS FEES** at key milestones.
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**HOW ARE WE ABLE
TO DO THIS?****Automation of Tedious Engineering Processes**

We invested heavily in software to automate 60-90% of the current industrial standard methodologies in wind engineering.

**Super-Compute that Exhausts All Possible Permutations**

Our software engineering allows us to scale input permutations across thousands of machines, to simulate the highest performing project configurations.

**Meticulously Designed Interfaces for Human in the Loop Intervention**

Our carefully balanced user interfaces allow experienced engineers with human judgement to orchestrate the firepower of our AI's computational capabilities.

**Integration of Well Known and Validated Industrial Algorithms**

We integrate state of the art, validated methodologies in our platform from individual algorithms to industry standard engineering software.

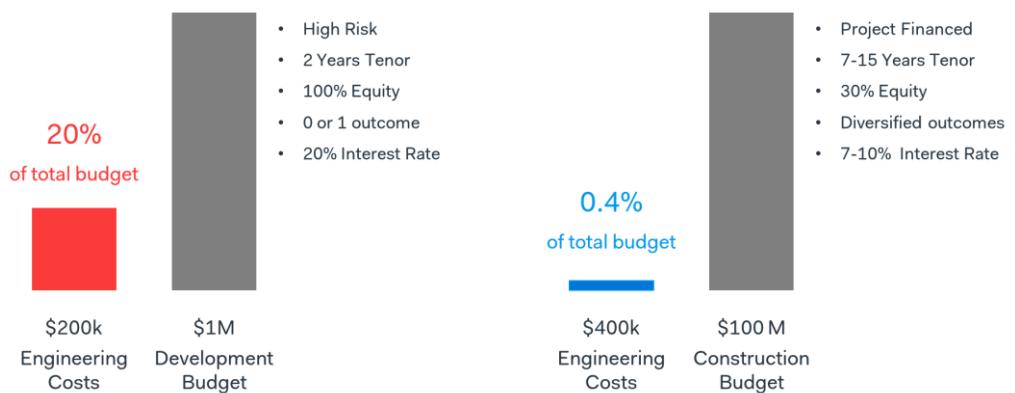
**"Direct Line of Sight to IRR" Philosophy**

Our rigorously integrated software allows our engineers to change any input at any step and determine the impact on IRR, NPV and LCOE within minutes.

PROBLEM #1
HIGH COSTS OF
ENGINEERING AT
DEVELOPMENT
STAGE

Engineering costs are 50x higher at development than at construction

Upfront at Development Success Fee at Financial Close



Anywhere between 25-75% of sites with measurement campaigns will not reach financial close. The engineering portion of project development is a dilemma between cost and uncertainty. As the current status quo for engineering work is either in-house teams or third-party consultants, every attempt to decrease uncertainty is immediately reflected by an increase in engineering man-hours.

Traverse solves this problem by reducing man-hours dramatically via upfront investment in software automation of the most repetitive engineering processes.

By doing this we can charge success-based fees at financial close which makes up for less than 1% of the total \$50-100M budget. This budget is further funded 70% by lenders at 7-10% interest rates.

PROBLEM #2
LOW FREQUENCY
OF TECHNICAL
ASSESSMENTS

Wind speed measured every second, but commercial assessments every 6 months?

The current status quo is to perform wind resource and energy assessments every 3 to 6 months. However, other project development activities, such as permits, land, project finance etc. are continuous and dynamic. We believe that if you are measuring your wind speed every minute, you should be able to know your energy prediction within the same time frames, so that you can take more informed decisions quicker.



For developers with multiple masts and project sites, by knowing your energy (and therefore IRR) projections in a continuous manner, you can manage your **development portfolio risk** by adjusting the priority of internal resources, finding new sites or installing / moving measurement equipment.

Traverse delivers periodic/on-demand wind resource, energy and commercial assessments straight to your inbox, providing you with actionable intelligence for the risk management of your entire project portfolio.

Engineering Services on WindDesk

WindDesk: From a Blank Map to Financial Close

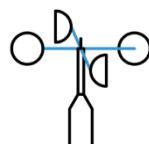
WindDesk is our up-to-financial-close / pre-construction engineering service. Under this platform, we provide the following service-products, in **near real time**:

- **Prospect** Hunt for new project sites considering technical, social and environmental factors. Optimize and bias for LCOE, IRR/NPV or capacity (MW).
- **Measure** Generate measurement strategies for shortlisted sites. Optimize between final energy prediction uncertainty vs. the cost of measurement campaigns.
- **Monitor** Manage on-site measurement data for maximum data recovery. Daily data screening with alert notification system and on-demand quality-controlled data.
- **Predict** Receive periodic/on-demand wind resource and energy production assessments. Be able to know your energy figures for all your sites in near real time.



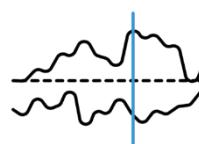
Prospect

Find a good site in a large area



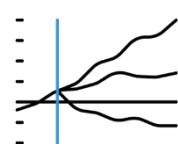
Measure

Set up and prepare a measurement campaign



Monitor

Monitor and ensure quality of measurement campaign



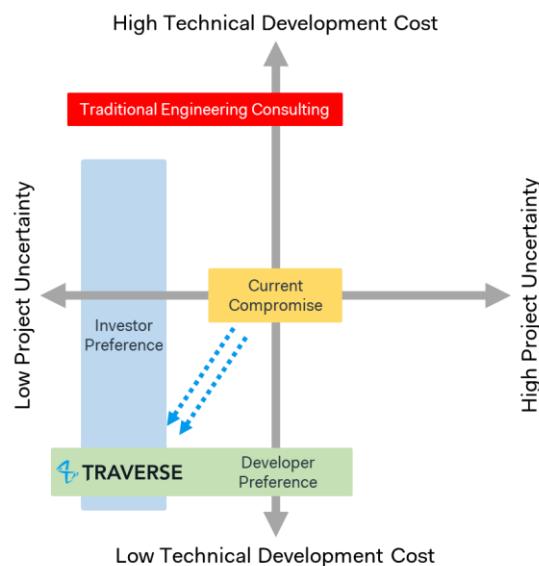
Predict

Project energy, CAPEX and IRR at P50-90 over PPA lifetime

WHY WORK WITH TRAVERSE?

Why work with Traverse

- You are in auction and merchant markets and have to compete aggressively on tariffs.
- You are in a competitive environment with regards to permits and land acquisition.
- You have many projects (and want more!) that are at highly varied stages.
- You have a high frequency of development issues.
- You have time pressure to know your project and portfolio's commerciality and risk.



FIND HIGHEST IRR SITES ACROSS REGIONS

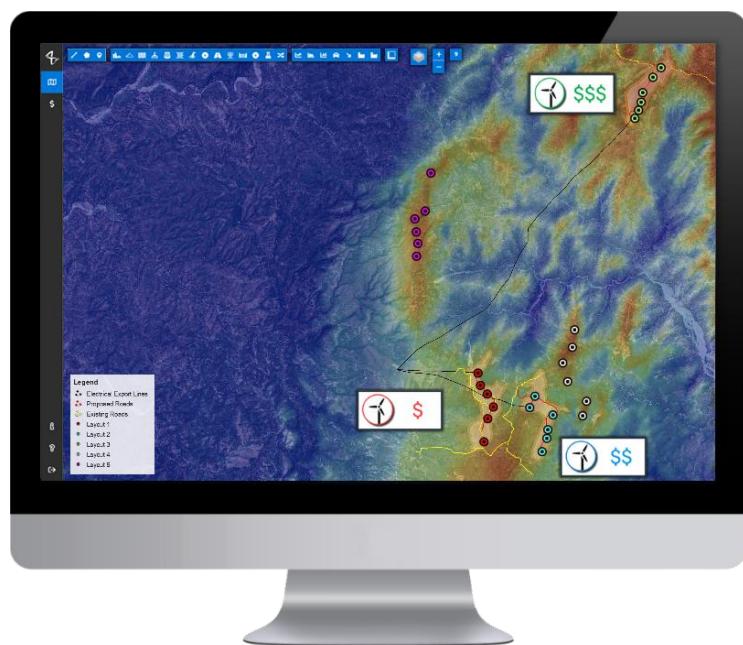
We provide direct to IRR and LCOE prospecting services, both at the country level as well as at a regional level.

We take technical, environment, social and commercial assumptions into consideration in our methodology.

Our financial modelling is equivalent to what is presented to investment and credit committees by investors, lenders and acquirers.

WindDesk – Prospect

Find best wind farm sites across regions



Prospect for potential wind farm sites at different scales

Country Scale We provide site prospecting at the country level using lower resolution public datasets. The result is a heat map that provides "inverse answers" such as "If the PPA was 7 cents/kWh, there are 1,000 potential sites that are equal to or less than 12% Project IRR".

Fixed Region We provide high resolution results for regional level prospecting if you have acquired specific primary data. The results would be "here is a list of 50 possible optimized wind farm layouts together with their preliminary wind resource and energy assessment, road and electrical layouts and financial models within this 100km x 100km region".

Observe direct line of sight from maps to IRR/LCOE

Our scoring methodology for both the country and regional level is either a) direct Project IRR/LCOE, b) capital deployment volume desired (e.g. MW) or c) energy production. You can choose to bias to a single metric or take the weighted average of multiple metrics. We use industry standard financial models as presented by acquirers, investors and lenders to investment and credit committees.

Our methodology incorporates applicable technical, E&S and commercial considerations:

- **Wind and site conditions:** Wind speeds, wind direction, wind shear, air density.
- **Terrain:** Elevation, slopes, ruggedness.
- **Wind turbine:** Turbine selection and sizing, costs, hub height.
- **Access roads:** Pathing, design and costs of internal and external roads.
- **Electrical BOP:** All internal connection considerations + transmission pathing to substation.
- **Civil:** Foundations, roads, auxiliary buildings, geotechnical complexity etc.
- **Environmental & social:** protected areas, vicinity to populations, places of interest etc.
- **Transport:** Transportation path complexity from port to site.
- **Hydrology:** Rainfall, flooding.
- **Financial modelling:** CAPEX, OPEX, funding structure and cost of capital, sensitivity analysis.

OPTIMIZED MEASUREMENT CAMPAIGN SCENARIOS AND STRATEGIES

We help you generate measurement campaign strategies – from placement of met masts to selection of instruments and to timetables and operational SOPs.

Our methodology is to minimize the uncertainty of final energy production vs. measurement campaign costs.

During an ongoing measurement campaign, we perform additional analysis to improve the current campaign.

WindDesk – Measure

Optimized measurement campaign scenarios and strategies

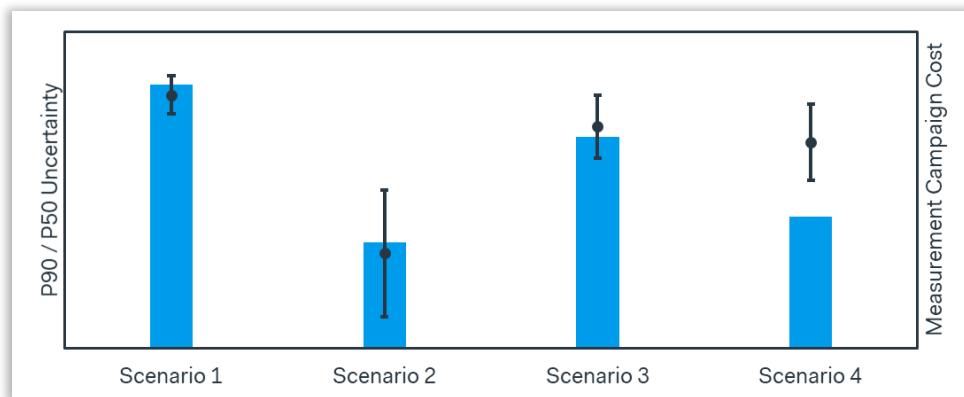


Generate measurement campaigns effortlessly

We provide you optimized measurement campaign plans and strategies to minimize uncertainty and costs. This includes the optimized placement of meteorological masts and remote sensing devices, measurement timetables, instrument specifications, costing sheets, operations and maintenance SOPs.

Perform sensitivity analysis of energy production uncertainty over multiple scenarios

Our key metric for optimizing measurement campaigns is to minimize the uncertainty in final energy production vs. measurement campaign costs. We perform millions of permutations of measurement strategies, analysing each uncertainty estimation and perform a cost-benefit analysis.



Find additional measurement sites at an on ongoing measurement campaign

After the measurement campaign has begun, we provide additional analysis to:

- Suggest new meteorological masts locations.
- Relocate remote sensing devices to new strategic positions.
- Update estimated energy production uncertainty based on measured data.
- Revise and optimize campaign costs.

**MANAGE ON-SITE
MEASUREMENT
DATA FOR
MAXIMUM DATA
RECOVERY**

We monitor the status and quality of measurement data from your projects daily.

You will be able to receive alert notification on issues and take corrective actions promptly to maximize data recovery.

Regular electronic reporting, and on-demand data download request available 24/7 through a web-based dashboard.

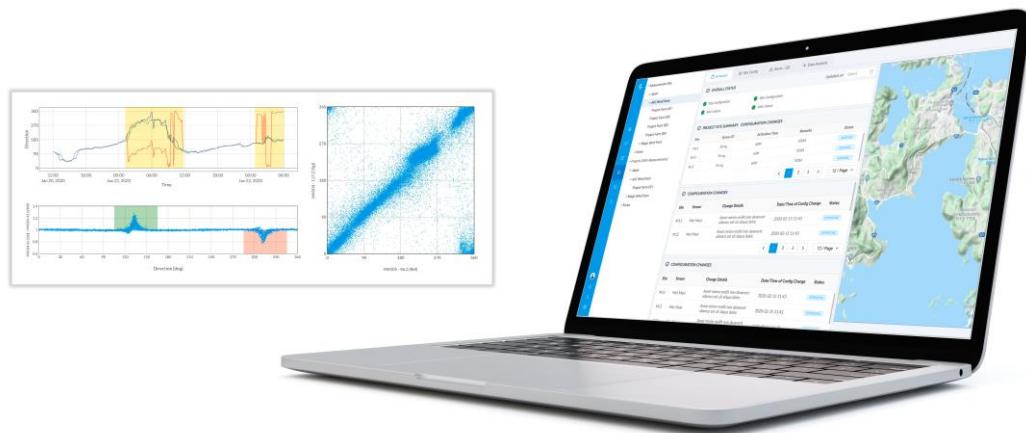
WindDesk – Monitor

Manage on-site measurement data for maximum data recovery

Monitor the status and quality of measurement data

Data from on-site data loggers and devices can be transmitted to WindDesk through multiple setup options, and the data are stored and backed up into secured databases.

Traverse couples AI and human-in-the-loop intervention to monitor the status of the measurement sensors and identify suspected issues based on the data. Detailed and smart quality-control processing of measurement data across various sensors and measurement sites is performed daily, ensuring that the data is always up-to-date and ready to use for further analysis.



Receive alert notification and recommended actions

Alerts on suspected issues and details recommended action are delivered by SMS, email, and through the web-based dashboard. Alert priority settings and notification frequency are customizable based on your preferences. Our engineers will work closely with you to provide technical advice, resolve equipment malfunction and troubleshoot data quality issues to ensure maximum data recovery of all measurement sites.

Access 24/7 web-based dashboard for reporting and data download request

Through our web-based dashboard, you will be able to view all projects and their corresponding measurement sites' summary in one glance. The interactive dashboard allows you to perform data visualization, generate regular reports and request data download from anywhere in the world.

DYNAMIC ENERGY ASSESSMENTS

You can perform numerous updates to your energy assessment based on project changes or setup periodic project development snapshots.

Our reports and deliverables are always analysed on a fully integrated, direct to IRR/LCOE basis and can be issued at a very high iteration speed.

WindDesk – Predict

Dynamic, on-demand wind resource, energy and commercial assessments

Unlimited updates and project variations

Data stored in the secured database from our monitoring platform (WindDesk: Monitor) is directly connected to WindDesk: Predict allowing you to perform wind resource, energy production and commercial assessments seamlessly.

With the help of carefully developed engineering and software interfaces, we provide you an up to date digital reflections of your project's commerciality based on new data from wind measurements, site surveys, E&S matters, geotechnical investigations and changes to design and project parameters such as layout, turbine selection, hub-heights, transmission design.



Having the ability to perform the analyses at near real time without paying for additional variation orders allows you to perform periodic project development snapshots, prioritize your resources for project development task, reduce development risk and increase the chances of project success.

Perform fully integrated analysis and optimize for IRR/LCOE

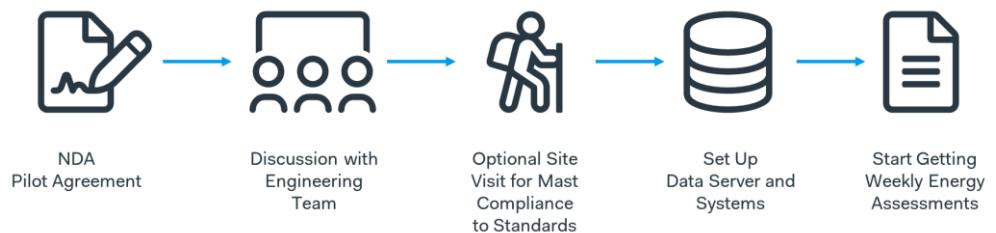
Our wind resource, energy production and commercial assessment methodologies are fully integrated with other technical, E&S, financial and development aspects of the project such as wind farm layout design, electrical loss calculations, setback zones, conceptual design and costings of civil and electrical balance of plant.

As a result, we can perform these analyses at highly accelerated pace and optimize your projects for either a) direct Project IRR/LCOE, b) capital deployment volume or c) energy production.

For developers with multiple masts and project sites, by knowing your energy (and therefore IRR) projections in a continuous manner, you can manage your development portfolio's risk by adjusting the priority of resources, finding new sites or installing new measurement equipment.

Bankable-grade methodology

- Fast, consistent, and high-quality reports and deliverables.
- In line with state-of-the-art industry methodologies and standards.
- Reports and deliverables consistent with independent international consultants.
- **Detailed methodology and validation documentation available upon request.**

NEXT STEPS**Next steps for WindDesk: Prospect and WindDesk: Measure****Next steps for WindDesk: Monitor and WindDesk: Predict****CONTACT US**
hello@traverse.ai