To identify technical risks, evaluate their (financial) criticality and recommend appropriate mitigation measures to enable a successful transaction, is a multidisciplinary challenge that requires the highest level of experience and expertise.

Ramboll has more than 30 years of experience in the wind industry and has performed technical, environmental and commercial due diligence on wind energy projects with capacities that exceed 30 GW.

Ramboll has local presence in the key wind markets and is familiar with the commercial and regulatory business environments.

Client specific due diligence studies
At Ramboll, client-centricity is part of our culture. Therefore, we have developed a modular technical due diligence approach: TDD 1.0–3.0. This approach enables our clients to define the areas to be reviewed, the level of details of such reviews, and the kind of reporting and additional technical analyses our client might require, according to their specific needs.

One covers all
With our expertise in wind energy engineering and development, management consulting and environment & health, Ramboll offers a unique service range covering technical, structural and environmental aspects of wind energy. We can therefore provide both technical and strategic assistance to our clients in evaluating potential transactions.

Hands-on experience
Ramboll has international experience in the development and design of wind farms and assessing energy yields. Ramboll is experienced in commercial strategies within wind energy, including organisational requirements, assessment of CAPEX/OPEX as well as business cases.

Our experience also includes manufacturing, planning, installation, commissioning and operation of wind energy projects. Ramboll’s experience provides the baseline for our unique competences in due diligence studies, as we are familiar with the pitfalls of wind energy project developments, how to mitigate them and how to evaluate them commercially.

For further information, please visit www.ramboll.com or contact us directly:

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Permits & design
Correct analysis of permits in relation to their impact on design, construction and operation of wind energy projects, is the backbone of any technical due diligence.

Our strong in-house competences in construction and electrical engineering enable us to identify technical and regulatory design errors. We provide state-of-the-art reviews of:
- Permits and licenses
- EIA reports
- Environmental & social DD
- Geotechnical studies
- Site layout
- Electrical design
- Civil works designs
- Turbine technology

Contract review
The experience of our technical experts in review and negotiation of project agreements, enables us to validate all relevant aspects of contracts to perform gap analysis and to benchmark project agreements.

Many of our clients have entrusted us with the technical lead of the contract negotiation, such as:
- Land lease agreements
- EPC agreements
- Turbine supply agreements
- O&M agreements (SA)
- Operation management agreements
- Grid connection agreements
- Contract negotiation

Energy yield
Ramboll provides high-quality energy yield assessments and wind measurements in compliance with international standards. Ramboll is certified according to DIN EN ISO/IEC 17025:2005 for both services. Profound knowledge of preparing such assessments is the key requisite to analyse energy yield assessments by third parties.

As a result of our reviews, we provide a recommendation of a net energy yield including a total uncertainty and related p50-p90 range. We provide top quality reviews of:
- Energy yield assessments
- Wind measurements
- SCADA data

Economics & strategy
Ramboll's combined expertise in wind energy, management consultancy and environmental & health enables us to provide services that go beyond the offering of our competitors, as covering commercial and environmental aspects.

Besides technical and commercial benchmarks, we identify up-sides and down-sides by e.g. modelling of lifetime extension potential. Our services include:
- CAPEX/OPEX evaluation
- Decommissioning costs
- O&M cost modeling
- Cash flow modeling
- Life-time extension
- Company evaluations
- Strategic consultancy

TECHNICAL DUE DILIGENCE
144 MW ONSHORE WIND FARM
RASKIFTET, OWNER'S ENGINEER
CLIENT
Austri Raskiftet DA
LOCATION
Raskiftet, Norway
PERIOD
2016-2018
SERVICE PROVIDED
Full technical due diligence, including bankable energy yield assessment. Subsequently owner's engineer on site.

TECHNICAL DUE DILIGENCE
288 MW OFFSHORE WIND FARM
SANDBANK
CLIENT
Stadtwerke München GmbH
LOCATION
German Bight, North Sea
PERIOD
2013
SERVICE PROVIDED
Full technical due diligence, including preparation of a bankable energy yield assessment and final technical contract negotiation.

TECHNICAL DUE DILIGENCE
DYNAMO ONSHORE WIND FARM
PORTFOLIO, 141 MW
CLIENT
Ventient Energy, UK
LOCATION
12 wind farms in operation, Germany
PERIOD
2019
SERVICE PROVIDED
Energy yield forecasts, review of O&M and asset management agreements, evaluation of O&M concept, evaluation of environmental restrictions, site inspections.