



RAMBOLL

ASSET MANAGEMENT ADVISORY

Multilateral partnerships are key for the supply of sustainable, reliable and affordable energy in a globalised business landscape applying asset and risk management principles.

Efficient asset management minimises the levelised cost of electricity (LCoE) by an effective CAPEX spend, continuous OPEX optimisation and an increasing availability whilst maintaining a commensurate risk-return balance for any investment into energy infrastructure. Our unique, multi-disciplinary asset management project teams include highly experienced and skilled consultants and engineers holding ISO 55000 certifications, risk management experience, diplomas in technical maintenance, as well as doctorate degrees in the area of asset and risk management.

We are solving asset management challenges for asset owners, asset managers and operators, as well as service providers during all lifecycle stages from early development to planning, engineering, transport, installation, commissioning, warranty, out of warranty and end of life phases.

In line with our client's corporate objectives and plans, we analyse markets and develop optimal business

and partnership models that secure sustainable growth. Furthermore, we consider crucial external aspects such as the political situation and energy tariffs, the competitor landscape or gaps in the supply chain. We apply the principles of asset (ISO 55000) and risk management (ISO 31000) to develop investment and operational strategies that provide confidence and assurance regarding corporate efficiency and reliability for internal and external stakeholders.

Once the overall direction, investment and partnership strategy is developed, we support our clients in building up the capability required to achieve the defined targets. We develop lifecycle plans for operational readiness – in simple terms: we ensure that our client's organisation has the right materials and competences at the right time and location from day one of their operation, in order to enter into efficient operations with the highest level of operational assurance. This includes an overview of the project's main risk implications, as

well as control mechanisms for all services that may be contracted to a third party.

We help our clients to efficiently manage any internal or external service providers, for instance by comprehensive contract assessment and the development of customised key performance indicators (KPIs). We also develop operations and maintenance (O&M) documents ready for implementation into IT systems – such as Enterprise Asset Management (EAM), Enterprise Resource Planning (ERP) or Computerised Maintenance Management Systems (CMMS).

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

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Investment, partnership & strategy

Ramboll is a leading global partner for companies that are active in the field of energy infrastructure. We use our profound market insights and extensive technical know-how to develop medium and long-term international investments and partnering options for our clients to enable global business growth under consideration of corporate objectives and risk implications.

- Competitor analysis
- Capability assessment & partnering evaluation
- Investment risk assessment & due diligence
- Asset management gap assesment
- Development of strategic asset management plans (SAMP)
- Analysis and optimisation of CAPEX and OPEX structures
- Preparation of strategic make-or buy decisions
- KPI design

A well-defined asset management strategy is the key to the financial performance of our client's asset portfolio.

Asset management organisation

Ramboll develops asset management organisations and systems in accordance with principles set in PAS55 and ISO 5500. In this context, we use our proven GAP assessment tools to compare our client's current performance against the 28 elements of PAS55 as a first step. Based on the assessment, we develop tailored solutions and programmes for setting up a new or improving an existing asset management organisation.

- Definition and implementation of processes, roles and responsibilities in an asset management organisation
- Concept design and follow-up activities related to continuous improvements
- Project and change management to accompany transformation processes

A well-designed asset management organisation enables sustainable strategy implementation and continuous improvement.

Implementation and optimisation

Ramboll has the expertise to develop and implement asset management programmes from birth to decommissioning. Our experts assist with implementation, building up the right tools and ensuring the right competences. This includes:

- Risk assessment and risk management (ISO 31000)
- Training in the Ramboll Maintenance Academy
- Spare part management and logistics optimisation
- Execution or facilitation of Reliability Centred Maintenance (RCM) processes
- Effective maintenance planning and control supported by appropriate IT tools
- Life Cycle Costing (LCC)
- Business cases and cost-benefit considerations

All our solutions contribute to strategy-compliant performance, condition and CAPEX/OPEX of our client's asset portfolio throughout its entire lifecycle.



INTERNATIONAL PARTNERING STRATEGY IN OFFSHORE WIND

CLIENT

Energy utility

LOCATION

Asia

PERIOD

2018

SERVICE PROVIDED

Establishing potential partnering options on different markets incl. related pros and cons as well as risk implications over medium and long-term.

ASSET MANAGEMENT STRATEGY AND IMPLEMENTATION ROAD MAP

CLIENT

Offshore platform operator

LOCATION

Germany

PERIOD

2014-2016

SERVICE PROVIDED

Assessment of current operational performance and capability, identification of gaps, development of medium and long-term road map.

STRATEGY DEVELOPMENT FOR EXTENSION OF SERVICE SCOPE OF OFFSHORE WIND TURBINES

CLIENT

Siemens Gamesa Renewable Energy

LOCATION

Europe

PERIOD

2017-2018

SERVICE PROVIDED

Business cases (CAPEX/OPEX) including risk and opportunity profiles for extended scope of full service agreements.