ABOUT US

Leaders in Global Services for Renewable Energy

UL works to help renewable energy manufacturers, developers, owners, investors, lenders, utilities and policy makers navigate the risk and complexity associated with renewable resources. We have become a trusted advisor by providing access to proven science and expert engineering, and by offering innovative solutions to meet the unique challenges of the renewable energy industry. We pride ourselves on being accessible, flexible and keenly responsive to the needs of our clients, helping them build projects that reduce humanity’s global carbon footprint and generate healthy financial returns.

UL now delivers an even more extensive portfolio of renewable energy services, through the acquisition of AWS Truepower (2016) and DEWI (2012). We advise on wind and solar projects, as well as battery and energy storage technologies, helping our clients make them safe, compliant, and perform to the highest standards. Our goal is to empower trust in renewable energy throughout the project lifecycle and across the supply chain.

Contents
02 About Us
03 Company Stats
04 Technical Advisory Services
06 Independent Engineering Services
08 Construction Monitoring & Management
10 EMEA Due Diligence Project Experience
20 World Class UL Technical Team
23 Office Locations
24 Contact Us
104 Countries where UL customers are located

500+ Wind, Solar and Energy Storage Experts

55+ Years of combined experience in renewable energy

200,000+ Total Number of Megawatts (MW) Assessed

55+GW Forecast provider for 55+GW of installed renewable energy projects

80+ Advised Lenders to finance and build renewable energy projects globally

30 GW Investor/Lender’s engineer on over 30 GW of wind and solar projects since 2012
TECHNICAL ADVISORY SERVICES

From a small equity stake in a single project to the acquisition of a global project portfolio, different investments require different levels of review. We work with you to determine the best path for your due diligence, and strive to identify all critical risks. Depending on your risk appetite, the type of investment, and your team’s expertise, we work to tailor project evaluation strategies specifically for you.
Investing in a renewable energy project or portfolio is a complex endeavor that requires an extensive evaluation effort. Understanding the inherent technical risks of a project is a critical facet of this effort, and the conclusions of this evaluation will allow you to ultimately decide if the return is worth the risk.

From energy resource and technology reviews, to balance of plant and O&M reviews, we leverage our combined 55+ years and 200 GW of experience on every wind and solar project we evaluate. We are pioneers and industry leaders in technical consulting and have played an active role in many of the world’s most important and groundbreaking renewable energy projects. This experience is important, but equally core to our company is our reliability. Our engineers work in lockstep with you and maintain regular communication as we evaluate your project. With millions of dollars on the line, you can’t afford to have questions go unanswered.

With offices around the globe, and experience in over 100 countries, we bring the expertise, track record and reliability that will allow you to invest with confidence.

TECHNICAL ADVISORY SERVICES CAN INCLUDE:

ENERGY RESOURCE
- Operational Energy Production Reports (EPRs)
- Pre-construction EPRs
- Third Party Review of Pre-Construction EPRs
- Preliminary Layout and Energy Assessment
- Wake Effects
- Site Review
- SCADA Analysis

TECHNOLOGY
- Turbine Technology Review
- OEM-Specific Known Issues
- Site Suitability Assessment
- Assessment of 25-year Life
- System Control Centers

BALANCE OF PLANT (BOP) DESIGN
- Civil and Geotechnical Review
- Electrical Design Review

WARRANTY AND O&M REVIEW
- Turbine Supply Agreements
- BOP Construction Agreements
- O&M Agreements
- OPEX Costs

ENVIRONMENTAL AND PERMITTING

SITE VISITS

LIFETIME EXTENSION SERVICES
- Design Useful Life (DUL)
- Remaining Useful Life (RUL) Determination
- OPEX Forecast Beyond Design Life
- Operation Plan Optimization
INDEPENDENT ENGINEERING SERVICES

We help make the critical financial close of a wind or solar project as smooth and successful as possible. Our technical and commercial expertise, along with our understanding of the intricacies of project finance, make us the ideal partner for developers bringing a project to fruition. Our team of engineers and technical advisors will help you prepare your project for financing, mitigate risk, and help ensure it is technically sound and ready for construction.
We support developers and lenders in their evaluation of technologies and projects for debt and equity investments. Our independent engineering (IE) reviews deliver objective information from a full scope of services needed to identify and mitigate the possible risks in wind and solar projects. Our solid reputation and global bankability in the renewable energy industry has been built on experience, quality and transparency, and our track record reflects the trust that lenders have placed with us to help ensure project viability and profitability.

Technical and commercial expertise, along with our understanding of the intricacies involved in project finance, make us an ideal partner for developers looking to raise capital and lenders looking to finance energy projects. The approach we employ for our reports has been thoroughly vetted over time with some of the world’s top lead arrangers and lenders, so we know exactly what they are looking for. We will guide you through the technical aspects of financing so your project can secure the capital it needs to thrive.

We offer a full scope of IE services for IE reports, but we can also tailor a scope to fit our clients’ specific needs.

---

**IDENTIFYING AND MITIGATING RISKS**

**IE REPORTS CAN INCLUDE:**

- **PROJECT OVERVIEW**
  - Site Layout
  - Initial Site Visit

- **ENERGY PRODUCTION REPORT**
  - Energy Production Report Summary
  - Energy Loss Review

- **TURBINE TECHNOLOGY REVIEW**
  - Wind Turbine Site Suitability

- **BALANCE OF PLANT (BOP) DESIGN REVIEW**
  - Foundation and Geotechnical Design Review
  - Electrical Design Review

- **THIRD PARTY CURTAILMENT AND CONGESTION SUMMARY**

- **CONTRACTS REVIEW**
  - Power Purchase and Hedge Agreements
  - Interconnection Agreements
  - Turbine Supply Agreements
  - Balance of Plant Contracts
  - Schedule and Scope of Agreements
  - O&M and Asset Management Contracts
  - Shared Facilities and Co-tenancy Agreements

- **ENVIRONMENTAL AND PERMITTING**

- **FINANCIAL ASSESSMENT**
  - CAPEX Review
  - Operating Assumptions Review
  - OPEX Forecast

- **CONSTRUCTION MONITORING**
  - Progress Report Review
  - Construction Drawdown Verification
  - Construction Monitoring Site Visits
During the construction and commissioning phases of a renewable energy project, we provide construction management and monitoring services to help ensure that project milestones are completed, the work conforms to the project design, quality controls are being met, and potential delays or cost overruns are identified.
UNDERSTAND THE PROGRESS AND PERFORMANCE OF YOUR INVESTMENTS

During the construction and commissioning phases of a renewable energy project, our company provides construction monitoring and management services to help ensure that project milestones are completed, the work conforms to the project design, quality controls are being met, and potential delays or cost overruns are identified.

CONSTRUCTION MONITORING

On-site visits to the project occur either on a monthly or milestone basis during the construction phase of the project. On-site reviews typically consist of:

- Review of final design for general compliance with contracts, and the progress of the design for compliance with the scheduled milestones
- Review of proposed work plans and quality control procedures
- Observe work in progress to determine that the project is proceeding in according with the milestone schedule and design
- Consultations with the owner and contractor in advance of major inspections or important work phases
- Progress reports including budget and schedule variances and photos

During the project start-up and testing phase we provide independent assessments of performance guarantee satisfaction, initial operations, and completion of construction contracts. Services typically include:

- Review test procedures to confirm compliance
- Monitor data collection procedures
- Review Loan Requisition Certificate and supporting documentation
- Prepare the Engineering Certificate for clients and lenders
- Witness performance testing
- Review test reports from contractor and/or owner
- Prepare final report/letter verifying the attainment of performance guarantees from contracts

We monitor the successful completion of each item, with a final on-site visit to verify that all items have been completed.

CONSTRUCTION MANAGEMENT

Full-time on-site monitoring by our staff lender’s engineer whose primary role is to monitor the engineering, procurement, and construction during a project’s construction period. The on-site lender’s engineer interfaces with all of the project construction stakeholders to provide feedback to the lender regarding construction conformance to the project design and schedule, reviews of work plans and quality control procedures, and consultations in advance of inspections and major work phases.
Brookfield Bord Gáis Acquisition

Brookfield hired our company to support the acquisition of the Bord Gáis Éireann wind portfolio located in Ireland and Northern Ireland. At the time of acquisition, the portfolio consisted of 321 MW of operating wind projects, 137 MW in construction, and approximately 300 MW in development. We supported Brookfield by evaluating forecasts of energy production and O&M costs, providing a portfolio analysis and technical review of major contracts, and conducting site visits. Following completion of the acquisition, we were retained as the lender’s Independent Engineer to support the leverage of a nine-operating-project portfolio. In this engagement, we provided a single, comprehensive IE report with the following scope: energy production assessments, review of site conditions, design, turbine technology, major agreements, environmental and permitting, financial model review, as well as responding to lender questions.

Construction, Operations & Maintenance for European Offshore Wind Farms

As part of a strategy to further develop its services and offshore expertise, a leading renewable energy consultancy based in Japan engaged our company to provide a comprehensive overview on Europe’s experience with the construction and operation of offshore wind farms. The assignment included the review of construction milestones and operational requirements in light of regulatory frameworks, as well as development and technology topics such as support structures, electrical connection and project management strategies. O&M issues such as required facilities, logistics, and the challenges imposed by offshore conditions complemented the work.
Evaluation of Operational Solar Plant Performance in Europe

In support of a developer’s European projects, we evaluated the operational performance of eight commercial-scale PV systems. The assessment involved a correlation study of plant output to relevant meteorological parameters, an estimate of the long-term resource and energy production based on operational data, and a variance analysis comparing the pre-construction estimates to the performance-based estimates.

Technical Due Diligence to Support the Acquisition of a Portfolio in Austria

Contour Global hired our company to provide full technical due diligence for a wind portfolio they were looking to acquire in Austria. Our technical team reviewed the existing energy production reports for operational and under-development projects. We were asked to perform an analysis of the portfolio’s operational data and prepare energy production reports. Our staff traveled to a number of project sites to inspect the balance of plant and review the potential risks associated with the operations and maintenance (O&M), as well as other key aspects of the projects. We also estimated future O&M costs, and provided CAPEX and OPEX (capital and operational expenditures) to the client. The resulting analysis and reports contributed to Contour Global’s decision to acquire the 207 MW portfolio.

Technical Due Diligence for Two Wind Farms in Germany

Our company performed a due diligence review for an investor of two wind farms located in Germany with 24 MW installed capacity. We conducted the energy yield assessments, performed a technical review of the key documentation, permits and contracts. Due to delivery shortfall and curtailment of the wind turbines in the beginning of operations, we assessed the shortfall of production and advised on compensation payment from the manufacturer to the owner.
provided due diligence to support construction financing. The technical and commercial scope included independent verification and assessment of:

- Balance of plant design
- Wind turbine technology
- Wind turbine site suitability
- Commercial agreements
- Curtailment
- Resource assessment and energy production
- Portfolio analysis
- Financial assessment
- Environmental legislation applicable to construction and operation
- Planning Authority conditions for pre-construction, construction, operations, and decommissioning
- Property and land rights documentation
- Equator principles
- Construction monitoring
Nineteen-Project Wind Portfolio

Provided due diligence to support construction financing for this 600 MW portfolio in Portugal. The technical and commercial scope included independent verification and assessment of:

- Operational energy analysis
- Turbine technology review
- Historical performance review
- SCADA event/fault log analysis
- O&M contracts review
- Operational strategy review
- Turbine OPEX projections
- Future availability projections

Thirty-Six-Project Operating/Construction/Pipeline Wind Portfolio

Provided due diligence to support the buyer’s assessment and valuation for portfolio acquisition. The technical and commercial scope was tailored for each of the project phases, and included independent verification and assessment of:

- Site conditions and infrastructure
- Wind turbine technology and site suitability
- Commercial agreements
- Curtailment
- Resource assessment and energy production
- Portfolio analysis
- Financial assessment
- Planning Authority conditions for pre-construction, construction, operations, and decommissioning
- Environmental impact assessments status and requirements
- Health and Safety Authority requirements
- Property and land rights documentation
- Avian risks and ornithological surveys

Eleven-Project Global Wind and Solar Portfolio

Provided portfolio benefit analysis to support an investor in the valuation and review of a portfolio consisting of eleven wind and solar assets in North America, South America, Europe, Asia and Australia. Scope included:

- Risk analysis and energy review including variance analysis of P50 estimates vs. actual energy production
- Estimation of uncertainty
- Portfolio effect analysis
Pre-finance Technical Due Diligence and Construction Monitoring for Wind Energy Projects

A major German bank hired our company to act as technical advisor in the pre-finance due diligence of a portfolio consisting of nine wind farms - six in France, and three in Finland. The scope of services included a review of contracts (TSA, EPC, O&M, PPA, Grid Connection Agreement, Land Lease Agreements, Interconnection Contracts, Commercial and Technical Management), technology review, review of the technical infrastructure design, review of the civil engineering and foundations, construction time schedule, financial model review and monthly construction monitoring. Permits, licenses and environmental were also included in the analysis. The energy yield assessment reports were reviewed pointing out the plausibility of the results, taking into account assumptions and losses. After close of the project finance we supported the bank with construction monitoring and draw down approvals. We also reviewed risk mitigation strategies and curtailment procedures for the planned wind farms.

M&A Technical Due Diligence Wind Portfolio

In 2016, we were hired by a Chinese customer as technical advisor to support the acquisition of a wind farm portfolio in the UK. The portfolio consisted of four under-construction and sixteen operating wind farms totaling 409 MW. The wind farm documents were analyzed taking into account the following: design and schedule review, contractual review including TSA, BOP and O&M reviews, turbine technology review, review of permits and licenses, portfolio effect, assessment of OPEX and remaining useful life assessment for wind farms in operation. We evaluated risks and provided comments on concerns found in the review. Additionally, we provided energy yield assessments and long-term production estimates through the analysis of operational data.
Tungsten Wind Farm Portfolio Acquisition Due Diligence

Our company was hired to perform technical advisory services for a bidder, providing an assessment of the value of the portfolio of operating and under-development wind farms totaling around 500 MW. We performed:

- A review of wind resource assessment and an update of energy yield assessment based on production data to update yield assumptions,
- A review of noise studies to assess potential risk - a stringent requirement in France,
- Assessment of the wind farm performance using SCADA data and operation history analysis as well as turbine inspection in order to assess the status of the operating assets,
- Review of O&M contracts and structure, as well as O&M history, to advise on possible changes of this structure by the buyer for further operation.

Our client successfully submitted a bidding offer in time with an optimized level of information of the portfolio.

Pre-finance Due Diligence for Six Projects

A major German bank hired our company to act as technical advisor for the financing of a wind farm portfolio located in France. Between 2014 and 2016, we evaluated 6 wind farm projects from the same developer, totaling 128 MW. We provided a detailed scope of review prior to project financing, covering contracts (EPC, TSA, O&M, PPA, grid connection, land lease), building permits and environmental assessment, turbine technology, project design (roads, foundations, electrical infrastructure), construction time schedule and inputs to the financial model. We subsequently supported our client during the construction phase of each project by providing a monthly review of construction reports, advising on compliance with budget and time schedule, analyzing change orders, providing review and validation of main contract invoices and confirming final acceptance of commissioning.
In close relation with a bidding consortium, our company acted as independent technical advisor to the lenders for Morocco’s 850 MW national wind power tender. The project is spread across five sites around Morocco mixing simple and complex terrain, desert and temperate climates, from the north to the south of Morocco. In this capacity we performed:

- Review of third-party energy yield assessments, full independent EYAs and provided updated yield assumptions for the lender,
- Technical review of the wind turbine technology,
- Site suitability assessment including climate, wind conditions, review of specific load calculations, suitability to grid requirements, etc.,
- Contract review including, TSA, BOP, O&M, PPA and project contracts, as well as assessment of the entire project contract structure,
- Review of environmental impact studies.

As a result, the bidding consortium was able to get necessary agreements with lenders for bidding on this tender.
Location
Italy and Poland
500 MW

Technical Advisor for a Nineteen-Project Wind Portfolio

A Chinese customer hired our company to support the acquisition of a wind portfolio located in Italy and Poland. At the time of the acquisition, the portfolio consisted of 461.5 MW of operating wind projects, 136.5 MW in construction and 83.5 MW in development. We supported the customer with a third-party energy yield assessment review and CAPEX and OPEX reviews. Additionally a technical review of procurement contracts (turbine supply, O&M, Power Purchase and Grid connection Agreements) and the project construction schedules were reviewed.

Location
Kayseri region, Turkey
82.5 MW

Pre-finance Due Diligence and Construction Monitoring of a Wind Farm

For a Spanish project developer, we analyzed and evaluated technical risks for an 82.5 MW wind farm with the following scope of work:

- Turbine technology review
- Construction schedule
- Electrical and civil review
- Permits and licenses review
- Financial modeling / base case modeling
- Major contracts review (TSA, O&M and BOP contracts)
Eight-Project Wind Portfolio

Provided due diligence support for an eight-project wind portfolio including:

- Initial assessment of available information
- Historical plant availability review and future plant availability projection
- Desktop assessment
- Site visit
- Turbine inspection
- Gross annual energy production projection
- Net annual energy production projection
- Future O&M cost projection
- Uncertainty calculation
- Review of O&M contracts

Eleven-Project Wind Portfolio

Provided technical advisory services to support the buyer’s assessment and valuation for a mixed pre-construction and operational wind portfolio acquisition. The technical and commercial scope was tailored for each of the project phases, and included independent verification and assessment of:

- Initial assessment of available information
- Fatal flaw review
- Independent analysis of wind energy
- Turbine technical review and inspection
- Review of key contracts
- Review of key technical studies including turbine siting, interconnection, and geotechnical
- Review of project design
- Review of project financials including long-term OPEX costs
- Review of historical operation

Seven-Project Operational Wind Portfolio

Provided technical advisory services to support the buyer’s assessment and valuation for the potential acquisition of a wind portfolio consisting of seven operational projects. The technical scope included:

- Operational energy production reports
- Review of independent engineer’s report
- O&M review including OPEX costs
- Review of historical operations
- Site visits for visual inspection
A successful project needs an experienced team. When you work with UL, you are getting hundreds of years of wind and solar project experience.

**LEADERSHIP**

Gill Howard Larsen – Global Director of Due Diligence Services

Having spent her 24 year career as an energy industry professional in both the United States and Europe, Ms. Howard Larsen has spent the last 17 years in a lead role in the development, acquisition, and financing of utility scale wind projects. Before joining AWS Truepower, now a UL company, she led project development, financing and M&A teams and negotiated with project owners, lenders, utilities, and regulatory agencies to close project development, acquisition, financing and sales of multiple wind energy projects. As Global Director of Due Diligence, Ms. Howard Larsen leads the team and all aspects of project due diligence, and performs contract reviews, review of commercial structure, risk assessment and allocation, financial model and OPEX cost reviews, site visits, and construction monitoring. She holds bachelor’s and master’s degrees from Cambridge University.

Rob Speht – Director, Due Diligence for Europe, Middle East and Africa

Mr. Speht has over 18 years of experience in renewables including offshore wind, wind, solar, wave & tidal energy. To date Robert has been involved in renewable energy projects with a combined total of nearly 12GW of installed capacity and an investment value of more than $21 Billion. As Director, Due Diligence for EMEA, he oversees Independent Engineering and Technical Advisory Services and is responsible for business strategy and growth in EMEA. Prior to joining UL, Mr. Speht held positions with technical advisors working on projects around the world, leading technical due diligence on numerous renewable energy projects and portfolios. He has led project development, financing and M&A teams as well as negotiated with project owners, lenders, utilities, regulatory agencies, and advisors to close project development, acquisitions, financing and sales of multiple wind energy and IPP projects. Robert is fluent in English and German, and recent work in the UK, USA, across Europe and the Far East has given him an excellent understanding of the renewable energy industry across the world.

**TECHNICAL TEAM**

Joseph Bon-Mardion – Project Manager, Due Diligence for Europe, Middle East and Africa

Mr. Bon-Mardion has more than four years of experience in renewable energy. His areas of expertise include project development, design, operation, technical due diligence and asset management. His responsibilities include pre-finance and M&A due diligence for wind and PV solar projects. Before joining UL DEWI, Mr. Bon-Mardion worked as a PV solar project development and design engineer and as project manager for an EPC contractor. He received his engineering degree from the Institut Catholique d’Arts et Métiers (ICAM) of Lille. Additionally, he is fluent in French, English, Portuguese and Russian.

Nicolas Breteil – Project Manager, Due Diligence for Europe, Middle East and Africa

Mr. Breteil has more than seven years of experience in renewable energy. His area of expertise is mainly wind farm development and construction, technical due diligence and asset management. Nicolas has been working together with project sponsors, investors, lenders, manufacturers, developers and operators since 2009. His responsibilities include pre-finance and M&A due diligence, construction monitoring, performance assessment and turbine inspections for wind projects. Before joining UL DEWI, Mr. Breteil has worked as wind farm project manager during the construction phase. He received his degree in civil engineering and environment from the Ecole Centrale in Lyon. He is fluent in French and English.

Dr. Patricia Chaves-Schwinteck – Senior Project Manager Offshore

Dr. Chaves-Schwinteck has over 14 years of international experience in the power generation sector and has been working for UL DEWI since 2007. In her current role, she is responsible for the management of offshore technical due diligence projects. Prior to this role, Dr. Chaves-Schwinteck lead the team of technical experts within the due diligence services for onshore wind farms at UL DEWI. She has extensive experience with the review of project contracts, CAPEX and OPEX...
estimations, analysis of data from operating wind farms and project coordination. Within the onshore due diligence team, she has advised on several M&A projects, as well as on the pre-financing and re-financing of wind farms in many countries (Germany, France, Italy, Turkey, Brazil, etc.). Dr. Chaves-Schwintek holds a master’s degree in renewable energy and a doctoral degree in business administration from the University of Oldenburg.

**Semih Coskun – Project Engineer Associate, Due Diligence for Europe, Middle East and Africa**

Mr. Coskun has two years of experience in renewable energy. Prior to joining UL DEWI, he worked at Best Transformers as electrical design engineer, where he designed oil-immersed distribution transformers and provided technical support to sales and project teams. He started his renewable energy career at General Electric as a field service technician. At GE he was responsible for troubleshooting and maintenance activities for 210 MW with his team. At UL DEWI Mr. Coskun works as a project engineer performing site visits for construction monitoring, turbine inspections and pre-finance due diligence. Mr. Coskun has a bachelor’s degree in electrical engineering and is fluent in English and Turkish.

**Joseph Deng – Senior Business Development Manager, EMEA and Greater China**

Mr. Deng has 11 years of experience in wind and solar energy. He is responsible for the management of relationships with large investors and state-owned companies for wind and solar energy projects. As a market development specialist, he identifies and shapes business opportunities, reduces risks and develops solutions, provides support to executive leadership and formulates business cases for decision making. Prior to joining UL, he worked on projects across multiple countries. Mr. Deng holds BS, MS and MBA degrees, and can work in technical and business environments, in both Eastern and Western cultures. Mr. Deng is fluent in Cantonese, Mandarin and English.

**Álvaro Pérez – Project Manager, Due Diligence for Europe, Middle East and Africa**

Mr. Pérez has over 11 years of experience in wind energy. He has been involved in renewable energy projects with a combined total of nearly 2GW of installed capacity and an investment value of more than US$3.8 billion. Prior to joining UL DEWI, Mr. Pérez was involved in the construction, installation, testing, and commissioning of wind plants in Europe and Asia, and managed operations and maintenance of a 170 MW wind farm as asset manager. As Due Diligence Project Engineer for Europe, Middle East and Africa at UL DEWI, he leads project due diligence from the project finance side with lenders, performs contract reviews, financial modeling, CAPEX and OPEX reviews, O&M assessments, tender support, site visits and construction monitoring. He is also experienced in performance assessment of wind farms based on SCADA data. Mr. Pérez holds bachelor’s and master’s degrees in industrial/chemical engineering. He is fluent in English, German and Spanish.

**Alix Pradel – Project Manager, Due Diligence for Europe, Middle East and Africa**

Mr. Pradel has more than eight years of experience in renewable energy. His area of expertise is mainly technical due diligence, asset management and energy yield assessment. At UL DEWI Alix is in charge of a large variety of services such as pre-finance and M&A due diligence, performance assessment including SCADA data analysis and nacelle mounted LIDAR measurements, wind turbine inspections, and energy yield assessment. Prior to his current role, Alix was in charge of wind measurement campaigns, acoustic studies and wind resource assessments for Iberdrola working for more than 1GW of projects in France and Brazil. He received his master’s degree in electrical energy and specialized in renewable energy from the ENSEEIHT in Toulouse in 2009. He is fluent in French, English, Spanish and Portuguese.

**Julia Schäfer – Project Manager, Due Diligence for Europe, Middle East and Africa**

Ms. Schäfer has over 10 years of experience in the renewable energy industry including onshore and offshore wind, solar, wave and tidal. She has provided lender’s technical advisory services on 1 GW and owner’s advisory services for 500 MW of offshore and onshore wind projects in Europe. Prior to joining UL, Ms. Schäfer worked as an independent technical consultant and construction site manager for onshore wind projects. Working as a renewable energy analyst for Glasgow-based Mott MacDonald Ltd., she focused on providing due diligence services in onshore and offshore wind as well as solar projects and undertaking technical feasibility studies for wave and tidal. Ms. Schäfer has a degree in energy and environmental management from the University of Flensburg, Germany (Industrial Engineer/Wirtschaftsingeneurin).

**Irina Sova-Raguenes – Technical Manager - O&M and Wind Turbine Technology**

Ms. Sova-Raguenes has more than 6 years of experience in renewable energy. Her area of expertise is mainly in operations and maintenance, technical due diligence and asset management. Her responsibilities include pre-finance and M&A due diligence, performance assessment and turbine inspections for wind projects. Before joining UL DEWI, Ms. Sova-Raguenes...
worked as a maintenance and reliability engineer for a solar and wind farms operator. She received her mechanical engineering degree from the National Institute for Applied Sciences (INSA) of Rennes. Additionally she is fluent in French, English and Romanian.

Adam Terry – Associate Director, Due Diligence for Europe, Middle East and Africa
Mr. Terry has more than thirteen years of experience in renewable energy, developing and providing technical advice for onshore and offshore wind and solar PV projects. Prior to joining UL DEWI, Mr. Terry worked for TÜV SÜD and Wind Prospect Group, providing technical due diligence on over 3GW of onshore and offshore projects in the UK, Europe and South Africa, including due diligence on a 1700MW pan-European portfolio for an international investment fund. He also carried out turbine supply and maintenance contract tendering and negotiation for projects in the UK, Europe and South Africa totaling over 300 MW. Mr. Terry holds a bachelor’s degree in Environmental Chemistry from the University of Reading. He speaks English and German.

Orlando Venegas – Project Manager, Due Diligence for Europe, Middle East and Africa
Mr. Venegas has over six years of experience within the renewable energy sector, including wind and solar projects. Prior to joining UL DEWI, Mr. Venegas worked as a project engineer in international projects for the manufacture ENERCON, where he gained knowledge in wind measurements, energy yield estimations and site compliance analysis. Mr. Venegas responsibilities cover pre-finance and M&A due diligence, including TSA, EPC, O&M and PPA contract reviews. Moreover he supports the construction monitoring of wind projects, including site inspections, component inspections, drawdown and cost compliance requests. He has also worked in several projects in the area of performance analysis based on SCADA data. He holds a Dipl. Eng. in mechanical engineering, a master’s degree in energy and environment and a master’s degree in renewable energy. He is fluent in English, German and Spanish.

David Coffey – Senior Turbine Engineer
Mr. Coffey has six years of wind engineering experience and is a senior turbine engineer supporting turbine technology reviews for the due diligence team at AWS Truepower. Prior to joining the company, Mr. Coffey worked at Vestas, and most recently with Iberdrola Renewables. He served within the Global Technical Division where he was responsible for analyzing and resolving end-of-warranty, operations, and maintenance issues in wind turbines across multiple platforms including Gamesa, Vestas, GE, and Mitsubishi. His experience with operations engineering, performance issue resolution, root cause analysis, and reliability improvement has helped him develop a detailed understanding of the issues affecting the “self-perform” operations and maintenance model as it applies to the wind industry. Mr. Coffey holds a BS in mechanical engineering from the University of Kentucky, and an MS in mechanical engineering from Clemson University.

Emil Moroz – Senior Turbine Engineer
Mr. Moroz has over 25 years of renewable industry experience. He has built and directed top-performing wind energy teams and he provides a deep system-level understanding of the wind business spanning technical and commercial aspects. As Principal Turbine Engineer at AWS Truepower, Mr. Moroz is responsible for turbine technology assessments, technology for renewable energy transactions and providing assistance to developers and owners with turbine related issues and projects. Prior to joining he held a number of key positions in wind turbine technology and plant operations, including System Integration Leader at GE, Chief Engineer for Garrad Hassan America, Director of Technology and Project Development for DeWind, Director of Wind Turbine Technology and Asset Strategist for AES, and finally as president of his own consulting company, EM Energy LLC. He has been intimately involved in the evolution of the early GE 1.x platform and conceptualization of the DeWind D9.2 turbine; continuous improvement and root cause analysis activities on multiple platforms including Siemens, MHI, Zond, Clipper, GE, Vestas; conducted due diligence on many versions of those previously listed and others including turbines from IMPSA, Gamesa, Enercon, RePower, ReGen, Suzlon, plus various Chinese manufacturers, including Goldwind; and has participated in site prospecting, windfarm layout design, and turbine suitability evaluations. Mr. Moroz holds a BSc in Aeronautics and Astronautics, an MSc in Mechanical Engineering, and authored or co-authored seven wind related patents.
EMEA OFFICE LOCATIONS

**GERMANY**
orlando.venegas@ul.com
Ebertstrasse 96
26382 Wilhelmshaven
GERMANY

Zweigstelle Oldenburg
Kasinoplatz 3
26122 Oldenburg
GERMANY

**FRANCE**
nicolas.breteil@ul.com
90, rue Paul Bert
69003 Lyon
FRANCE

**SOUTH AFRICA**
joseph.padbury@ul.com
Building 2, Parc Nicol Office Park.
3001 William Nicol Drive
Bryanston, Johannesburg
SOUTH AFRICA

**SPAIN**
cristian.algar@ul.com
Sucursal en España
c/Larragueta 8B
31013 Ansoain (Navarra)
SPAIN

Barcelona Science Park
Baldiri Reixac 10-12
08028 Barcelona
SPAIN

**TURKEY**
semih.coskun@ul.com
Mansuroğlu Mah. Ankara Cad.
283/1 Sokak No:2 K:4/501 Kavuklar Plaza
35535 Bayraklı, İzmir
TURKEY

**LONDON, UK**
Robert.speht@ul.com
CONTACT US

Rob Speht
Director, Due Diligence for Europe, Middle East and Africa
London, UK
P: +44 7738.883.004
E: robert.speht@ul.com

awstruepower.com | dewi.de | dewi-occ.de | ul.com

Printed April 2017