



# Renewable Energy Services

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▶ 2024

ENERGY & INDUSTRY DIVISION



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## Applus+ Group

Applus+ is a **worldwide leader in the testing, inspection, and certification sector.**

It provides solutions for customers in all types of industries to ensure that their assets and products meet quality, health & safety, and environmental standards and regulations.



**26,000+**  
People in 2023



**€ 2,058M**  
Revenue in 2023



**65+**  
Countries in all continents



**Accredited**  
By main international entities

### Applus+ brand clip video



[https://youtu.be/8xMcEafAR\\_w](https://youtu.be/8xMcEafAR_w)

## Overview 2023



### Energy & Industry Division

#### Core Services

- QA/QC, Inspection & Supervision
- Engineering and consulting
- Quality management
- Non-destructive testing
- Testing and analysis
- Vendor surveillance
- Environmental & Social
- Health & Safety

  
**€ 1,084.4M**  
 revenue


  
**16,558**  
 people



### Laboratories Division

#### Core Services

- Mechanical
- Non-destructive testing
- Electrical and Electronics (EMC)
- Cybersecurity
- Fire and Building Products
- Product Certification
- Metrology
- Systems Certifications

  
**€ 254.3M**  
 revenue

  
**2,589**  
 people




### Automotive Division

#### Core Services

- Statutory vehicle inspections for government programs
- Driver-testing inspections
- Public-service vehicle inspections
- Off-leasing vehicle inspections
- Vehicle condition, emission and registration inspection
- Road-safety education

  
**€ 391.8M**  
 revenue

  
**4,300**  
 people



### IDIADA Division

#### Core Services

- Testing and engineering services
- Worldwide homologation and product certification
- Proving ground
- Facility and design services

  
**€ 327.5M**  
 revenue

  
**3,158**  
 people



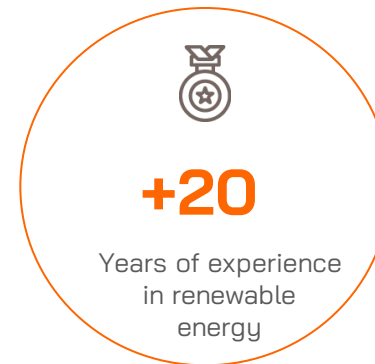
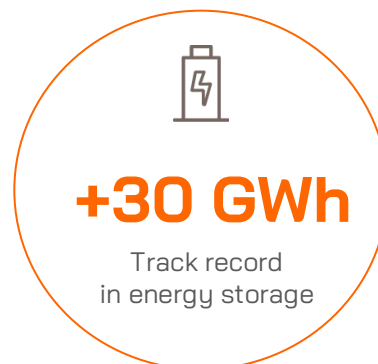
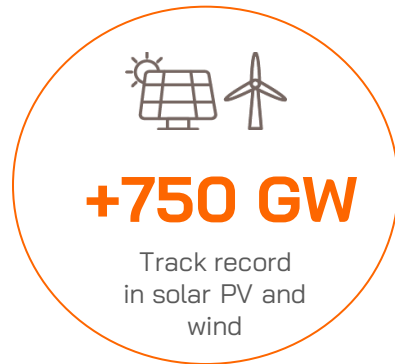
# Renewable Energy

- + Renewable Energy Services
- + Global Presence in Renewable & BESS Projects
- + Our Services: Technical Advisory
- + Our Services: Testing and Inspection

## A Global, Full-range Technical Partner for Renewable Energy and BESS Projects

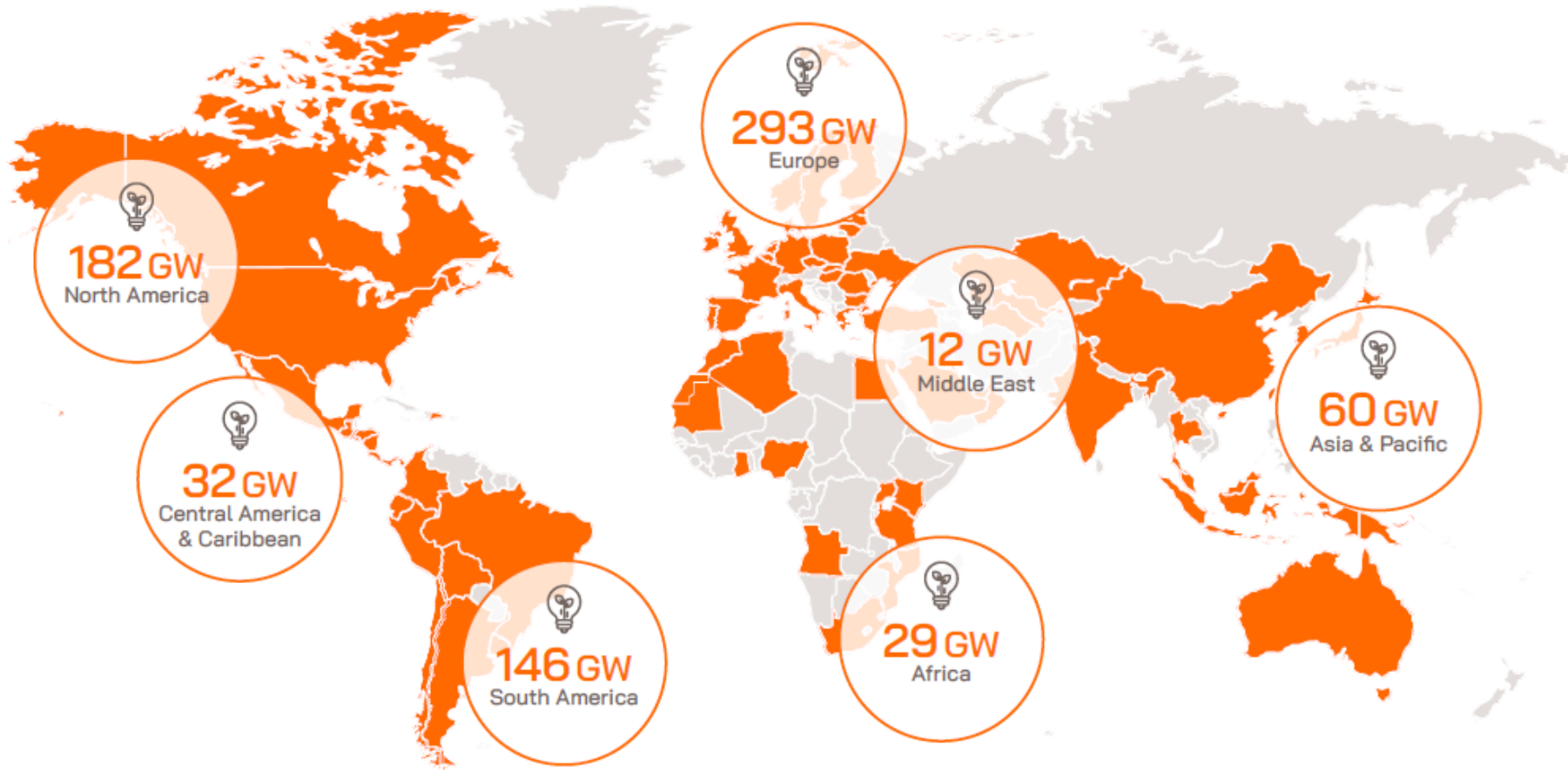
Applus+ provides independent, highly-specialized **technical advisory, engineering, quality control, testing and inspection services** for renewable energy and battery energy storage systems (BESS) projects all around the world. We support owners, developers, IPPs, OEM companies, financial institutions, and equity investors to minimize their risks across all stages of their projects, from feasibility and development, to construction and operations, covering all required specialties.

Our **specialised brands for technical advisory services** for renewable energy and BESS projects:





## Global Presence and Track Record in Renewable & BESS Projects



### TECHNOLOGIES



Wind onshore  
& offshore



Solar PV  
& CSP



Storage



Hydrogen

## Technical Advisory by



### QA/QC Supply Chain

- Technical Advisory during Negotiations with PV, BESS, and other Equipment Suppliers
- Supply Chain Traceability
- Supplier Due Diligence & Factory Audits
- Accredited Manufacturing Supervision & Testing
- Vendor Surveillance Service\*



### Consulting

- Red Flag Analysis
- Energy Resource Studies & Yield Assessments
- Technical Due Diligence for Vendors, M&A Transactions and Lenders
- Construction Monitoring and Supervision during Operation
- Contract Negotiation Support for Main Project Contractors
- Wind Power Performance Test



### Specialised Testing

- Development stage: Albedo On-Site Measurement, Wind Measurement Campaigns & Micrositing
- Post-shipment Inspections of PV, BESS Containers, Main Wind Components, and any key equipment
- Post-installation Stage: Electroluminescence (EL) to Installed PV Modules (Including Massive EL and Daytime EL)
- Commissioning Stage: Visual Inspection, Solar PV I-V Curve, IR Inspection, Inverter Efficiency Measurement, WTG verifications, Power Performance Test and any other LV & MV tests
- Operation Stage: Solar PV I-V Curve, IR Inspection, Maximum Power Measurement, Massive EL, Pyranometer Calibration
- WTG Technical Inspection. Advanced Drone- Based Blade Inspections



### Engineering

- Technical Assistance during EPC/BoP Tender. Review and Evaluation of Proposals
- Owner's Engineering: Contracting Support & RfP Management for Main Equipment for EPC, BoP and TSA. Construction and Commissioning Supervision and Project Management
- Basic and Detailed Engineering\* for BoP, Substations and Power Evacuation Lines
- Technical / Economic Feasibility Analysis of Renewable Energy Projects and Hybridisation of Solar PV & Wind & BESS Technologies

\*Services Available For Green Hydrogen Projects



## Testing and Inspection



### Environmental

- Consultancy and Engineering: Environmental Impact Studies including Marine, Landscape Integration, Risk Analysis, Waste Management
- Studies & Surveillances. Vegetation & Fauna Inventory
- Inspections and Analysis (labs): Air Quality, Soil, Water, Waste and Noise
- Sustainability Consulting and Corporate ESG Services



### H&S

- External Prevention Service and Consultancy
- H&S Coordination and Technical Assistance
- Serious Accidents and Process Safety



### Electrical

- Substation & Protections Systems Commissioning and Testing
- Power Lines Aerial Inspection Drones & LiDAR Technologies
- Electrical Testing & Condition Assessments: Transformers, Cables (overhead & buried), Generators, Motors, Switchgears...



### Civil

- Technical Studies: Access Design, Topographic, Geotechnical, Hydrology...
- Material Testing Lab: Concrete, Steel, Soils, Aggregates & Chemical Analysis
- Supervision Services
- Structural Asset Integrity



### Mechanical

- Manufacturing Quality Control Services: Wind Towers, Jackets, Transitions pieces, Monopiles.
- Supervision Services
- NDT Services, Conventional & Advanced: Phase Array, ToFD, Eddy Current, Digital Radiography, RAZAR, IWEX.



### Statutory Inspections

- Evaluation of compliance with the Maintenance Plan
- initial and periodic regulatory inspections



### Telecommunications

- Mobile network coverage measurements both before and after construction/commissioning
- Reflectometry measurements of PE fibre.

*Thanks!*

**Applus<sup>+</sup>**

[www.applus.com](http://www.applus.com)

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