Company Presentation

ARIES INGENIERÍA Y SISTEMAS

ARIES INGENIERÍA Y SISTEMAS

A world leader in technological development, efficiency and quality

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«Our comprehensive services and global footprint offer renewable energy clients a skilled and dependable partner in the development of sustainable energy assets around the globe»

ARIES INGENIERÍA Y SISTEMAS

ARIES offers a large range of integrated engineering services for the energy generation industry, as well as advanced owner's engineering and technical advisory for large energy projects. ARIES combines these capabilities with a strong investment in Research and Development (R+D). This allows for innovative technological developments that improve the energetic efficiency of concentrated solar energy plants, or the efficiency of PV monitoring and operations systems. ARIES features an all-purpose team which guarantees quality in the development of any project. The firm´s engineers have the experience to tackle the complex regulations that affect these types of projects. The commitment, the efficiency, and the effectiveness of the professionals at ARIES has been demonstrated in the development of photovoltaic plants, concentrated solar power plants, wind parks, small hydro, conventional cogeneration, combined cycle and nuclear plants. With an international portfolio of advanced renewable energy projects ARIES brings industry leading experience in the analysis, design, and EPC of groundbreaking renewable energy facilities. The results are solutions that improve operational efficiency, manage price risk, increase security and reliability, and create valuable markets for tradable credits. Our main objective is to offer innovative ideas and technologies that cost-effectively harness renewable energy resources wherever they are applicable.

«ARIES' comprehensive renewable portfolio includes the delivery of Concentrated Solar Power (CSP), Photovoltaic (PV), Wind, Hydropower and Cogeneration Systems»

PHOTOVOLTAIC

ARIES, being the first company in Spain to reach non-recourse project finance of a solar PV project in Spain (ARSOL 1-5 MW), is a pioneer in utility scale photovoltaic power generation and has developed 40 MW of PV power plants. In these projects, ARIES maintains a majority ownership and has completed the EPC tendering process and supervision of the construction, start-up and O&M of 15 MW (with 2-axis tracking system). Furthermore, ARIES has performed engineering works on more than 4300 MW of PV solar power plants all around the world. ARIES does the basic and detailed engineering, construction, commissioning, O&M supervision, other technical advisory services, and also Facility SCADA and CMMS´ Systems Development and Installation.

CONCENTRATED SOLAR POWER

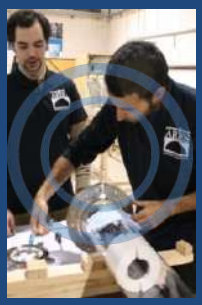
ARIES is a top CSP expert presently developing 500 MW of CSP power projects in Spain, 150 MW are already in operation. As a leading engineering company in CSP technology, ARIES has been involved in the main CSP projects worldwide comprising parabolic trough, central receiver and Fresnel technologies. ARIES has acted as owner's engineer and technical advisor in these projects for top-tier international industrial players such as ACWA Power in more than 4100 MW of CSP developments. ARIES is at the forefront in CSP applications developing add-on solar field in to an existing conventional power facilities and integrating solar steam generation for industrial purposes.

WIND

ARIES has more than 15 years of experience in the wind sector. Having developed services such as feasibility studies, wind resource evaluations, concept engineering, installation management, consultancy in O&M and due diligences in over 5000 MW wind farms, ARIES plays the role of technology expert, remaining agnostic and keeping ahead of the technologies improvements and evolutions. Our vast experience in the wind sector with the main players: wind manufacturers, utilities, banks and particular clients around the world, positions ARIES as the leader in the market guaranteeing customer satisfaction in every single contracted project.

HYDRO

ARIES has been involved actively in the hydro energy program developed in Spain working closely with IDAE, the Spanish Institute for Energy Diversification and Saving. ARIES has provided engineering and project management services in several hydro power plants of varying power outputs. Thus, ARIES has acquired a deep expertise and know-how managing hydro projects of various sizes and site conditions. On top of that, ARIES has also gained relevant experience in main equipment procurement processes and contract negotiations, as well as in the coordination and management of the different subcontractors involved in a hydro project, from site evaluation and selection to power plant commissioning.



RESEARCH & DEVELOPMENT

ARIES is developing its own proprietary technologies, having innovation as the basis of its philosophy. Therefore one of the major departments of the company is R&D+i. The company places the research and development as a core strategic element in its growth. To this end ARIES collaborates closely with universities and research centers of great prestige such as the Consejo Superior de Investigaciones Cientificas (CSIC) and IK4-Tekniker in Spain and with international centers as Deutschen Zentrums für Luft-und Raumfahrt (DLR) and the Eidgenössische Technische Hochschule Zürich (ETH Zürich). At present ARIES is focused on developing a variety of components for CSP plants providing solutions to reduce the costs of energy.

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1. OBJECTIVE OF THE DOCUMENT

The object of this document is to present a brief description of ARIES Ingenieria y Sistemas, including a company profile, an extended reference description of our projects and finally the services we provide for utility scale renewable energy projects.

As a global Engineering firm, Aries is constantly dedicated to expanding its network across various regions around the world, and cementing its position within this ever growing market. Our team would only hope that this report provides you with a more detailed understanding of the quality and efficiency that we provide to every project.

2. COMPANY PROFILE

Founded in 1987, Aries is an independent, global and diversified engineering company that develops efficient, effective and quality solutions through the integration of their highly skilled team of professionals. The company, with a presence in over 25 countries, develops strategies aimed at niche markets that promote profitable, strong and stable growth in every economy. The engineering services that Aries offers span include feasibility studies, basic to detailed engineering, construction, start-up and complete operations and maintenance services for both Energy and Testing systems sectors. Aries' highly qualified team is characterized by their flexibility to meet and exceed industry standards and constantly fulfilling some of the most demanding industrial requirements.

In the energy sector, Aries specialized in the development, design, engineering, construction and operations of power plants, mainly renewable. The technologies the company is focused on include: Solar Photovoltaic (PV), Concentrated Solar Power (CSP), Wind, Mini-Hydro, and hybrid systems (i.e. ISCC). Currently Aries owns and operates its own PV and CSP plants in Spain as well as providing their services in the development of various renewable energy projects worldwide; with a cumulative pipeline of thousands of MW. Internationally recognized, Aries is known thanks to their extensive track record of complete design and engineering works for several power plants around the world. With current operations occurring in Europe, USA, India, China, the Philippines, Morocco, South Africa and the Middle east.

Aries has extensive experience in providing engineering and technical advisory services for renewable energy projects all around the world. Apart from performing preliminary engineering services, the Aries team also provides valuable advice to clients, aiding major investors during the development phase, and providing guidance regarding the steps required to implement projects in a variety of countries around the world.

2.1 HUMAN CAPITAL

ARIES workforce is the most important asset of the company. The company has constantly been associated with excellence and technological innovation, due to the quality and functionality of their projects. The team intention will always be to ensure that the services are rendered by the appropriate professionals with the adequate experience and material goods. Our experience in solar enterprises, our qualified engineering team and our experience developed through several years in identification, design, planning, construction and operation of PV and CSP power plants in Spain and worldwide, has given ARIES the ability to guarantee the satisfaction of our customers in all contracted projects.

3. GENERAL EXPERIENCE AND QUALIFICATION

Aries is an **independent engineering company** specialized in the development of advanced technology and highly efficient solutions, with the aim of satisfying all our customer requirements from around the world. Aries has specific expertise in the delivery of Renewable Energy projects – from initial technology evaluation and validation to operation and maintenance, including plant design, site selection, licensing and construction management. Believing in the principles of sustainable development, Aries is dedicated to improving the energy efficiency of customer's industrial processes and always utilizing environmentally clean and safe materials and systems.

The Aries team always guarantees the satisfaction of their customers in all our projects due to our extended experience in utility scale renewable energy projects. With engineering's from a variety of disciplines (civil, mechanical, electrical, instrumentation and control), our team has accumulated a quality track record in identifying, designing, planning, constructing and operating both PV and CSP power plants all around the world.

Aries assures quality and excellence in all the projects that are undertaken. This emphasis has inspired us to certify our quality management system, which covers all of our activities according to the ISO 9001 standard.

ARIES' PV Arsol-1 Plant (5MW) in Spain

4. ARIES' INTERNATIONAL RENEWABLE ENERGY EXPERIENCE

ARIES has been being involved in a number of solar power projects worldwide, acting as technical advisor and engineering services provider (including Owner´s Engineer) in relevant solar projects in USA, Latin America (Chile, Brazil, Mexico, Honduras, El Salvador, Guatemala, etc.), Europe (Spain, Italy, France, Romania, Bulgaria, etc.), Africa (Morocco, Egypt, Libya, Kenya, Swaziland and South Africa), Middle East (Jordan, Kuwait, UAE, Turkey, etc.) and Asia (India, China, the Philippines, Kazakhstan, etc.).

ARIES has implemented several Solar Power projects both for its own projects and third party projects, developing, designing, providing technical assistance during the bidding process and financial closure, in construction supervision and in test and commissioning phase. Moreover, ARIES has also been involved in tendering processes including tender preparation, pre-qualification, RFP documents, RFP competition, contract awarding and final agreements.

Over the last 7 years, ARIES has become a solar IPP, where we have assumed the role of developer, licensing engineer and owner´s engineer for our own 15MW PV and 150MW CSP Power plants in Spain. All of these solar plants are already in operation. This role not only has increased ARIES' know how of power plant EPCs, but has provided ARIES with a deep understanding of the entire project lifecycle including operation and financing. ARIES is at the forefront in solar thermal and PV technology worldwide.

In doing so, Aries has also effectively provided its Engineering Services to:

4,300 MW Photovoltaic **4,100 MW** CSP **5,000 MW** Wind

4.1 PHOTOVOLTAIC

ARIES, being the first company in Spain to reach non-recourse project finance of a solar PV project in Spain (ARSOL 1-5MW), is a pioneer in utility scale photovoltaic power generation and has developed 40 MW of PV power plants. In these projects, ARIES maintains a majority ownership and has completed the EPC tendering process and supervision of the construction, start-up and O&M of 15 MW (with 2-axis tracking system). Furthermore, ARIES has performed engineering works on more than 4,300 MW of PV solar power plants all around the world.

4.2 CONCENTRATED SOLAR POWER

ARIES is a top CSP expert presently developing 500 MW of CSP power projects in Spain, 150 MW are already in operation. As a leading engineering company in CSP technology, ARIES has been involved in the main CSP projects worldwide comprising parabolic trough, central receiver and Fresnel technologies. ARIES has acted as owner's engineer and technical advisor in these projects for top-tier international industrial players such as ACWA Power in more than 4,100 MW of CSP developments.

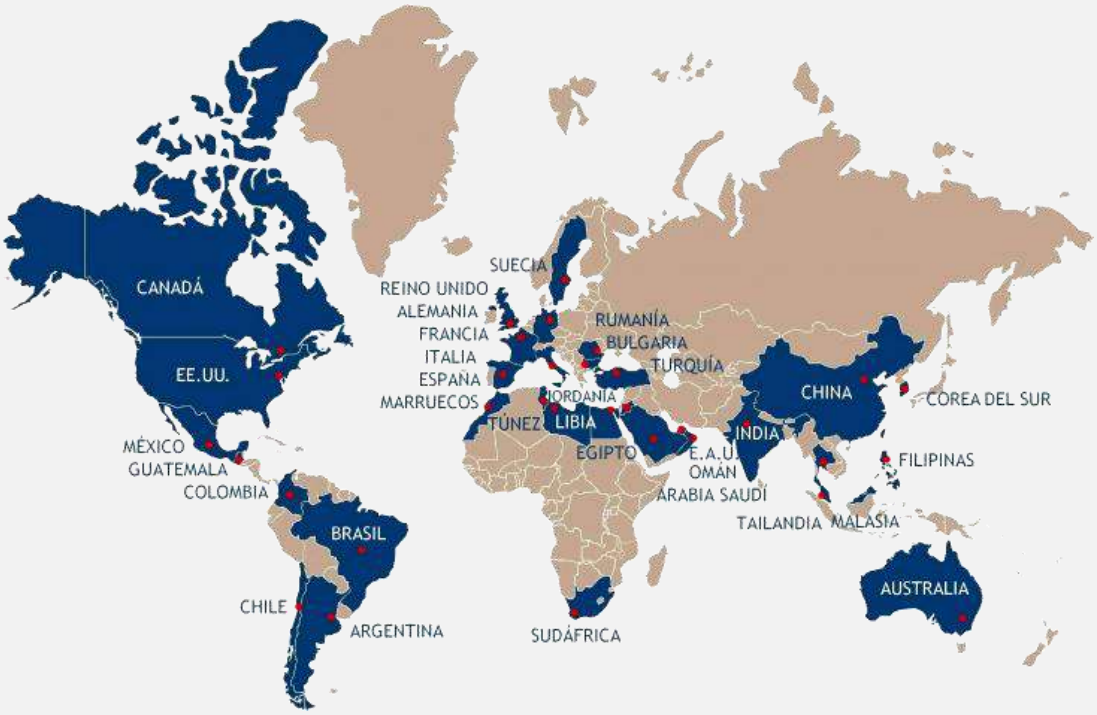
Furthermore, we want to highlight the OE for three solar ongoing projects: the 50MW Bokpoort Plant in South Africa; the 160MW Ouarzazate Plant in Morocco (The first step of the ambitious Moroccan Solar Plan, fully supported by the World Bank and other IFIs, targeting the construction of 2,000MW by 2020); and the CGN Delingha 50MW Solar Thermal Power Generation Project in Qinghai Province, CHINA, partially supported by the Asian Development Bank.

4.3 WIND

ARIES has provided detailed engineering services in a number of wind projects world-wide as well as technical advisory services (from feasibility studies to permitting engineering or RFP tendering management) to over 5GW of wind projects. We have provided our unique expertise to every stage of the project life cycle, from the review of site data and preliminary simulation outputs to complete Plant design and construction supervision. Our team provides in depth experience on finding the most efficient power plant design enabling performance optimization, from maximizing plant output to improving operation and maintenance. Our plant experts offer extensive technical and engineering expertise in the preparation of Technical and Minimal Functional Specifications in the wind energy sector.

4.4 ARIES GLOBAL PRESENCE AND PARTNERS

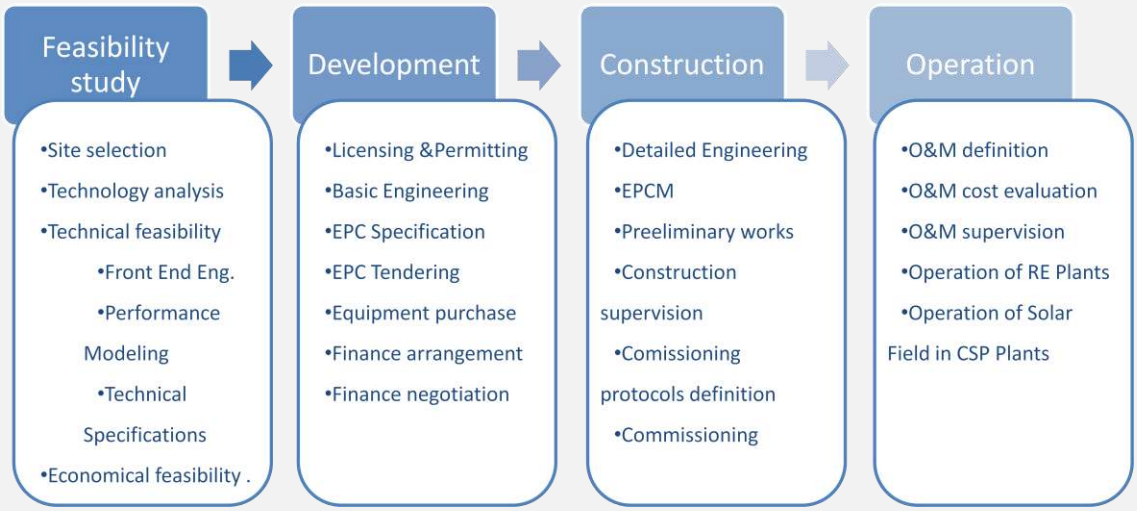
PROVIDING OUR SERVICES IN OVER 25 COUNTRIES…



And having the privilege of working with a variety of International/local companies worldwide

5. ARIES' RANGE OF SERVICES

The scope of services that ARIES provides leads us to have a global presence across the whole renewable energy value chain. The services that we offer include:



Project Development

ARIES has completed all aspects of project development in several PV and CSP projects in Spain. ARIES selected the project sites and obtained all permits related to water use, geotechnical, environmental impact studies and the endorsement of the project to local government agencies. Special Purpose Vehicles (SPVs) were created for project financing. ARIES has arranged equity and debt partners and maintains a minority share of project equity.

Site location

ARIES has extensive experience in site location for renewable energy power plants. The company has been responsible for all the ground work involved in a large number of wind and solar plants. Internationally ARIES is currently working on site selection for solar developments in several countries world-wide, highlighting its works in India, United States, north of Africa, South Africa and Middle East.

ARIES' Wind Farm (500 MW) in Spain

ARIES' PV Arsol-1 Plant (5MW) in Spain

Design and Procurement

Acting as Owner's Engineer, ARIES specifies the exact design requirements of the entire plant. Additionally, ARIES has negotiated and purchased supply contracts for more than 400 million Euros. By expertly using our wide development and engineering experience, ARIES develops detailed cost compilation of the entire plant based on commercial offers from equipment suppliers, contractors and market references for all renewable technologies.

EPC Management

Thanks to our own projects, ARIES is able to take responsibility for EPC Management. Assuming this role, ARIES is responsible for the engineering, the negotiation and procurement of the equipment of the plant and the management of the diverse construction contracts as well as the supervision of their execution. ARIES has deployed a number of EPCM services world-wide for engineering procurement and construction management, such as ADANI POWER's 40MW solar plant in Gujarat, India. This facility is currently the largest of its kind in India. ARIES has managed the project above expectations, as to bring the facility into operation while performing well above guarantees.

ARIES' EPC MANAGMENT CSP Astexol 2 (50 MW) in Spain

Owner's Engineering, EPC Arrangements and Supervision

ARIES has tendered EPC contracts for 7 solar projects in Spain. Throughout the tendering process, ARIES has produced all the related tendering documents including technical specifications and complete plant drawings. On top of its own projects, ARIES has provided Owner's Engineering for solar projects in Spain, India, Chile, North African countries and Middle East, where it has been responsible, among other tasks, for Technical Specifications definition and EPC tender process management.

ARIES' OWNERS EGNINEERING FOR CSP NOOR-1 (160 MW) in Ouarzazate

Technical Advisory

Acting as Technical Advisor, ARIES has performed solar resource analysis revision, site evaluation and infrastructures studies, power plant layout revisions, feasibility studies revision, EPC call for tenders, EPC contract negotiation and O&M revision and recommendations among others. ARIES has provided services for more than 2300MW of CSP and 2050MW of PV projects including Clients such as ENDESA, ACWA POWER or ZORLU. ARIES has also provided technical due diligences to banks such as Santander and Deutsche Bank.

ARIES' TA for CSP Astexol 2 (50 MW) in Spain

ARIES' TA for CSP GUJARAT SOLAR (50 MW) in India

SCADA Turnkey Software

ARIES Energy Division with more than 10 years experience with renewable energy installations, and experienced in the control and monitoring area has participated in the development of a best in class Supervision, Monitoring and Control system for PV Solar and Wind plants. This specific solution consists of the design, supply, installation, testing and commissioning of an overall SCADA system for the solar PV power plant complying with this specification and the applicable Grid/Distribution Code. The system proposed by ARIES, due to its wide expertise in solar power plants, provides maximum reliability and data integrity, including a fully integrated power plant reporting system that allows Operators to monitor and analyse historical power plant operation and performance.

LIVE WEB ACCESS FROM ANY SERVER: One of the most advantageous qualities of our SCADA system is that it allows the user to monitor their plant from any server, with direct connection to the WEB.

6. ARIES' RELEVANT RENEWABLE ENERGY REFERENCES

ARIES has extensive experience in conducting renewable energy technical consulting, detailed & Owners engineering services, as well as Turnkey Software Installations. Here is a list of ARIES' Relevant References within the industry:

6.1 CSP REFERENCES

CSP EXPERIENCE

Developed **150 MW**

Engineering Services to **4,100 MW**

RELEVANT CSP REFERENCES			
Name: ASTEXOL 1	**Location:** Extremadura, Spain	**Capacity** 50 MW	**Date:** 2008-present
Client: DIOXIPE SOLAR **SERVICES:** Developer, Owners Engineer, Shareholder	**Scope:** Feasibility studies, site evaluation and selection. Basic engineering, main equipment definition, specification and procurement, owner engineering, licensing and front-end engineering construction supervision		
Name: ASTE 1A, 1B	**Location:** Cuidad Real, Spain	**Capacity:** 2 X 50 MW	**Date:** 2008-present
Client: ASTE **SERVICES:** Developer, Owners Engineer, Shareholder	**Scope:** Feasibility studies, site evaluation and selection. Basic engineering, main equipment definition, specification and procurement, owner engineering, licensing and front-end engineering construction supervision		
Name: Redstone	**Location:** Northern Cape, South Africa	**Capacity:** 100MW	**Date:** 2014
Client: ACWA **Services:** Technical Advisor	Technical Due-Diligence: Review of principal technical aspect of project agreements, project data, technology employed, EPC contract, O&M Contract, Construction Scheduling		
Name: Noor 1	**Location:** Ouarzazate, Morocco	**Capacity:** 160 MW	**Date:** 2016
Client: ACWA **Services:** Owners Engineer	**Scope:** Pre-engineering review: Technical studies, Power plant dimensioning, performance model study, equipment selection and negotiation, EPC contract review. Detailed engineering approval. EPC procurement support, Construction supervision, Start-up Supervision, Commissioning, Operations and Maintenance supervision.		

RELEVANT CSP REFERENCES

Name: Noor 2/3	**Location:** Ouarzazate, Morocco	**Capacity:** 350 MW	**Date:** 2014
Client: ACWA Power **Services:** Technical Advisor	**Scope:** Technical Due-diligence: Review of Technology employed EPC contract, construction scheduling, construction, commissioning and operational risk, environmental standards and compliance, technical inputs for financial model, and support project financing lenders.		
Name: Copiapo CSP	**Location:** Copiapo Chile	**Capacity:** 200 MW	**Date:** 2014
Client: Confidential **Services:** Technical Advisor	**Scope:** Conceptual Engineering and Basic Engineering		
Name: Humanrus	**Location:** Northern Cape, South Africa	**Capacity:** 100MW	**Date:** 2013
Client: GDF Suez **Services:** Technical Advisor	**Scope:** Technology screening and analysis, review of surveys and any available information (i.e topographic, water resource, etc), Review and advise on owners EPC requirements, solar resource analysis.		
Name: TAQA Plant	**Location:** Upper Egypt	**Capacity:** 200 MW	**Date:** 2011
Client: TAQA Energy **Services:** Technical Advisor	**Scope:** Consulting services: metrological station deployment, review of competing technologies, technical due diligence, review of front end engineering, site assessment analysis, and performance and financial modeling.		
Name: Ma'an Plant	**Location:** Ma'an Desert, Jordan	**Capacity:** 46 MW	**Date:** 2010
Client: Millennium Energy industries **Services:** Technical Advisor	**Scope:** Technical Assessment: Review of competing technologies, technical due diligence, review of front end engineering, site assessment analysis, performance modeling and project implementation planning		
Name: Delingha CSP	**Location:** Delingha, China	**Capacity:** 50 MW	**Date:** 2015 – present
Client: CGN Solar Energy **Services:** Owners engineer	**Scope:** Engineering design review, control and construction documents review, procurement support, project construction supervision, test run and financial acceptance, and owners ability development training.		
Name: YAZD Hybrid Solar ISCC Station	**Location:** YAZD, Iran	**Capacity:** 17 MW (Solar)	**Date:** 2012 – present
Client : Mapna MD2 **Services:** Technical Advisor	**Scope:** Solar reserouce assessment, review of solar technologies, technology selection, preliminary design, technology risk analysis, performance modeling, detailed engineering specifications		
Name: BokPoort CSP	**Location:** BokPoort, South Africa	**Capacity:** 50 MW	**Date:** 2013
Client: ACWA **Services:** Lenders Technical Advisor	**Scope:** Technical Due-diligence: Review of Technology employed EPC contract, construction scheduling, construction, commissioning and operational risk, environmental standards and compliance, technical inputs for financial model, and support project financing lenders.		
Name: Shams 1	**Location:** Abu Dhabi, UAE	**Capacity:** 100 MW	**Date:** 2008
Client: ACWA Power **Services:** Technical Advisor	**Scope:** Technology Review and Cost estimation		

6.2 PV REFERENCES

PV EXPERIENCE

Developed **15 MW**

Engineering Services to **4,300 MW**

RELEVANT PV REFERENCES			
Name: ARSOL Toledo	**Location:** La Puebla de Almoradiel, Spain	**Capacity** 10 MW	**Date:** 2006-present
Client: ENERSOL **SERVICES:**, Owners Engineer, Shareholder	**Scope:** Feasibility studies, site evaluation and selection. Basic engineering, main equipment definition, specification and procurement, owner engineering, licensing and front-end engineering construction supervision		
Name: ARSOL-1	**Location**: Daimiel	**Capacity:** 5MW	**Date**: 2005-Present
Client: ARSOL ENERGIAS LIMPIAS **SERVICES:** Owners Engineer, Shareholder	**Scope:** Feasibility studies, site evaluation and selection. Basic engineering, main equipment definition, specification and procurement, owner engineering, licensing and front-end engineering construction supervision		
Name: ADANI Plant	**Location:** Gujarat, INDIA	**Capacity:** 40 MW	**Date:** 2010
Client: ADANI power **Services:** Technical Advisor	**Scope:** Engineering services: detailed engineering, basic engineering, Purchase specifications, technical evaluations		
Name: Shaporji Plant	**Location:** Karanatake, India	**Capacity:** 15 MW	**Date:** 2010
Client: Shaporji Pallonji **Services:** Feasibility Study	**Scope:** Site selection, pre-design of the plant, supplier evaluation and selection, production estimations, cost analysis and financial model		

RELEVANT PV REFERENCES			
Name: Pattern Plant	**Location:** Antofagasta, Chile	**Capacity:** 200 MW	**Date:** 2013 – present
Client: Pattern Energy **Services:** Owners engineer	**Scope:** EPC tendering support, EPC tender evaluation, Contract negotiation, and Construction supervision		
Name: DEWA plant	**Location:** Dubai, UAE	**Capacity:** 200 MW	**Date:** 2015
Client: ACWA **Services:** Lenders Technical Advisor	**Scope:** Review of scope of work, project design, RFP deliverables, sponsors and EPC contractors, Delivering RFP requirements. Review of technical specifications, review and assess on technology, review of O&M practices, and verify the technical inputs in the financial model.		
Name: Atacama Plant	**Location:** Atacama, Chile	**Capacity:** 69+86 MW	**Date:** 2014
Client: Sunedison **Services:** Technical Advisor	**Scope:** Basic and Detailed Engineering		
Name: NedBank Plant	**Location:** South Africa	**Capacity:** 75 MW	**Date:** 2013
Client: Nedbank **Services:** Lenders Technical Advisor	**Scope:** Review design, Yield analysis, Review of survays and any available information, solar resource analysis, risk analysis, and Energy output review and economic analysis		
Name: Green State Plant	**Location:** Wisconsin, USA	**Capacity:** 20 MW	**Date:** 2011
Client: Green state Energy **Services:** Technical Advisor	**Scope:** Basic Engineering, layouts and production study		
Name: TerraForm Plant	**Location:** Midi Pyrenees, Alpes France	**Capacity: 24 MW**	**Date:** 2015
Client: Terraform **Services:** Technical Advisor	**Scope:** Administrative Due Diligence, Technical Due Diligence: yield Analysis and expected production report, availability & performance Analysis, and site visit & facility O&M inspection.		
Name: Abertura Plant	**Location:** Caceres, Spain	**Capacity:** 23.1 MW	**Date: 2015**
Client: Aliwin Plus **Services:** Lenders Technical Advisor	**Scope:** Analysis of the economic impact and incomes risk of the new legal framework, Technical due diligence: project status review, solar resource assessment and production estimation, project future status estimation. Analysis of Key project agreements, Analysis of the base case, Analysis of the permits & licenses.		
Name: MASDAR Plant	**Location:** Spain	**Capacity:** 17 MW	**Date:** 2012
Client: Masdar Clean Energy **Services:** Technical Advisor	**Scope:** Technical Due Diligence: Review principal technical aspects of project agreements, Review of project data, Review of EPC contract, Review of O&M contract, Review of Construction, commissioning and operational risks, Review of O&M contractor scope of work, Review of Environmental standards, review of technical inputs for financial model.		

RELEVANT PV REFERENCES

Name: PLANT ADAPTION	**Location:** Nation Wide Spain	**Capacity:** 650 MW	**Date:** 2011
Client: Solarpack, fotowatio, enersol, arsol, vector cuatro, alten, scan energy and Anemoi **Services:** Technical Advisor	**Scope:** Adaption of PV plants to Spanish regulation RD1565/2010 Normativa P.O.12.3 related to low voltage ride through. Including basic engineering, equipment supply and installation, civil work, permitting, start-up supervision, Commissioning.		
Name: Zorlu Plant	**Location:** Zorlu, Turkey	**Capacity:** 50 MW	**Date:** 2011
Client: Technical Advisor **Services:** Technical Advisor	**Scope:** Site selection screening: solar resource assessment, existing infrastructure assessment, geographical and topographical surveys. Feasibility study: selection of optimal technology, conceptual design, plant lay-out, yield estimation, investment and O&M cost estimation		

6.3 WIND REFERENCES

WIND EXPERIENCE

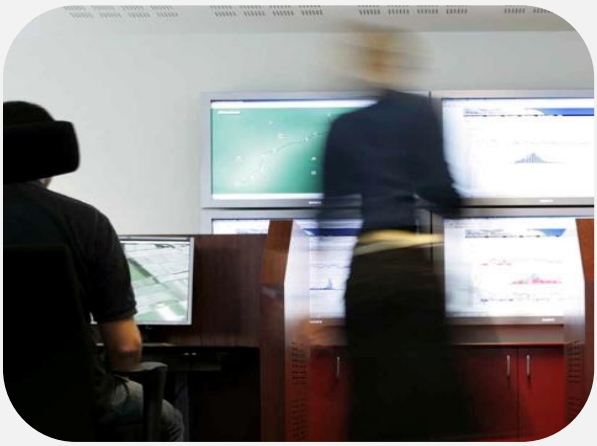
Developed **40 MW**

Engineering Services to **5,000 MW**

RELEVANT WIND REFERENCES			
Name: Integrated Wind Program	**Location:** Morocco	**Capacity** 850 MW	**Date:** 2014-present
Client: ACWA Power **SERVICES:** Technical Advisor	**Scope:** Analysis of available wind, meteo, site data and simulation analysis. Revision of OEM simulation analysis, technical specification revision & Final plant configuration, Revision of EPC proposal, Technical Assistance in the EPC/O&M/LTSA/OWA contracts. Technical Certifications to the Client and negotiation support until preferred Bidder.		
Name: Filacol Plant	**Location**: San Vincente, Guatemala	**Capacity:** 10 MW	**Date**: 2006
Client: Filacol **SERVICES:** Technical Advisor	**Scope:** installation, management and data analysis, Wind and site study, wind energy estimation, Basic Engineering.		
Name: Colorado Plant	**Location:** Colorado, USA	**Capacity:** 2 X 200MW	**Date:** 2011-2015
Client: Investment Fund (confidential) **Services:** Owners Engineering	**Scope:** Development: site selection, technical studies, land securing, administrative studies, licensing. Front End Engineering: Power plant dimensioning, performance model study, equipment negotiation. Pre-engineering: Power plant layout, performance model study, Main equipment specification definition, expected electricity production modeling, financial evaluation.		
Name: Illinois Plant	**Location:** Illinois, USA	**Capacity:** 2 X 200 MW	**Date:** 2011-2015
Client: Investment Fund (confidential) **Services:** Owners Engineering	**Scope:** Development: site selection, technical studies, land securing, administrative studies, licensing. Front End Engineering: Power plant dimensioning, performance model study, equipment negotiation. Pre-engineering: Power plant layout, performance model study, Main equipment specification definition, expected electricity production modeling, financial evaluation.		

RELEVANT WIND REFERENCES			
Name: NA	**Location:** Romania	**Capacity:** 64 MW	**Date:** 2012
Client: Industrial group (confidential) **Services:** Consultant	**Scope:** Identification of utilities and traders, Power purchase agreement negotiation and signature, and green certificates contract negotiation and signature.		
Name: NA	**Location:** Kazakhstan	**Capacity:** 33 MW	**Date:** 2011
Client: Development fund (confidential) **Services:** Technical Aid	**Scope:** Site Assessment for the wind farm construction, wind energy resources assessments at the selected site, wind turbine selection, optimized wind turbine layout, power output assessment, and conclusion and recommendation		
Name: BORCA	**Location:** Neamt, Romania	**Capacity:** 50 MW	**Date:** 2011
Client: CEINSA **Services:** Technical advisor	**Scope:** Due Diligence: Technical evaluation, wind resource, wind turbine evaluation, civil works, grid connection, environmental analysis, and optimization options		
Name: NEO Plant	**Location:** Chimay, froidchapelle, Belgium	**Capacity:** 67 MW	**Date:** 2009
Client: NEO Energia **Services:** Technical Advisor	**Scope:** Repowering study: repowering, energy production study, project energy study, and uncertainties study.		
Name: DRACE Plant	**Location:** El hierro, Spain	**Capacity:** 11.5 MW	**Date:** 2008
Client: Construcciones especiales y Dragados **Services:** Technical Advisor	**Scope:** Basic project management, wind resource study, access and roads study, electrical infrastructure design and basic engineering, study of civil works planning and economic and feasibility study.		
Name: ESB Plant	**Location:** Spain	**Capacity:** 50 MW	**Date:** 2007
Client: ESB international **Services:** Technical Advisor	**Scope:** Wind resource evaluation, project planning, pre-evaluation environmental impacts, feasibility study, layout and basic engineering		
Name: Sabadell Plant	**Location:** Sorihuela, Spain	**Capacity:** 11.7 MW	**Date:** 2007
Client: Banco Sabadell **Services:** Financial and Technical Advisor	**Scope:** Site Analysis, Wind resource study, equipment suitability assessments, electrical infrastructure design and basic project revision, study civil works planning revision, economic study, construction supervision, and Final acceptance		
Name: Iberdrola Farm	**Location:** Spain	**Capacity:** 500 MW	**Date:** 2005-2006
Client: IBERDROLA **Services:** Technical Advisor	**Scope:** Power curve calculation based on information provided by the client, power curve estimation, calculation according to international standards		
Name: URBAENERGIA	**Location:** Spain	**Capacity:** 2 X 40 MW	**Date:** 2002
Client: ACS/GRUPO DRAGADOS **Services:** Technical Advisor	**Scope:** Technical Due Diligence and Wind resource evaluation.		

6.4 SCADA REFERENCES



SCADA EXPERIENCE

TOTAL experience in **750 MW**

RELEVANT SCADA REFERENCES			
Name: Javiera	**Location:** Antofagasta, Chile	**Capacity** 73 MW	**Date:** 2014-2015
Client: SunEdison **SERVICES:** System Contractor	**Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: Horus	**Location:** Chiquimulilla, Guatemala	**Capacity:** 50 MW	**Date:** 2014
Client: Grupo Ortiz **SERVICES:** System Contractor	**Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: Crucero	**Location:** Antofagasta, Chile	**Capacity:** 72 MW	**Date:** 2014
Client: SunEdison **Services:** System Contractor	**Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: Choluteca	**Location:** Choluteca, Honduras	**Capacity:** 20 MW	**Date:** 2015
Client: SunEdison **Services:** System Contractor	**Scope: Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: Pacifico	**Location:**Choluteca Honduras	**Capacity:** 20 MW	**Date:** 2015
Client: SunEdison **Services:** System Contractor	**Scope: Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		

RELEVANT SCADA REFERENCES			
Name: Marcovia	**Location:** Choluteca Honduras	**Capacity:** 35 MW	**Date:** 2015
Client: Grupo Ortiz **Services:** System Contractor	**Scope: Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: Kathu	**Location: Kathu, South Africa**	**Capacity:** 75 MW	**Date:** 2013
Client: Building Energy **Services:** System Contractor	**Scope: Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: ARSOL	**Location: Almoradiel, Spain**	**Capacity:** 10 MW	**Date:** 2014
Client: Enersol Proyectos **Services:** System Contractor	**Scope: Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		
Name: ARSOL-1	**Location:**Daimiel, Spain	**Capacity:** 5 MW	**Date:** 2014
Client: ARSOL Energias Limpias **Services:** System Contractor	**Scope: Scope:** Supply, delivery and commissioning of control monitoring system & SCADA, detailed design, hardware installation, software release and commissioning		

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