



Independent Experts for Large-scale Solar Energy

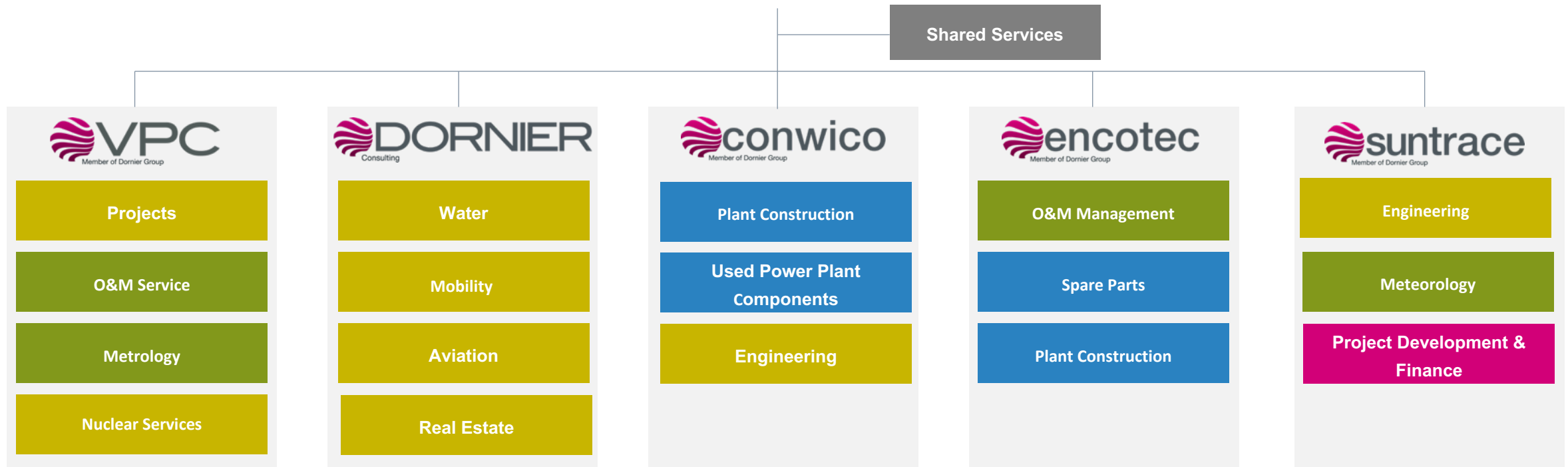


Suntrace GmbH (Member of Dornier Group)

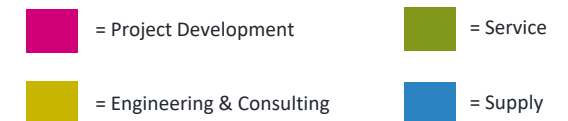
AHK-Geschäftsreise Thailand, online, 23.6.2020

Strong service provider for Infrastructure

DORNIER GROUP



We are creating a global one-stop shop for all engineering and consulting services in infrastructure. 2000 staffs with 18 office locations around the globe.



Suntrace complements the renewable energy expertise of the group –
from resource analysis, engineering to finance



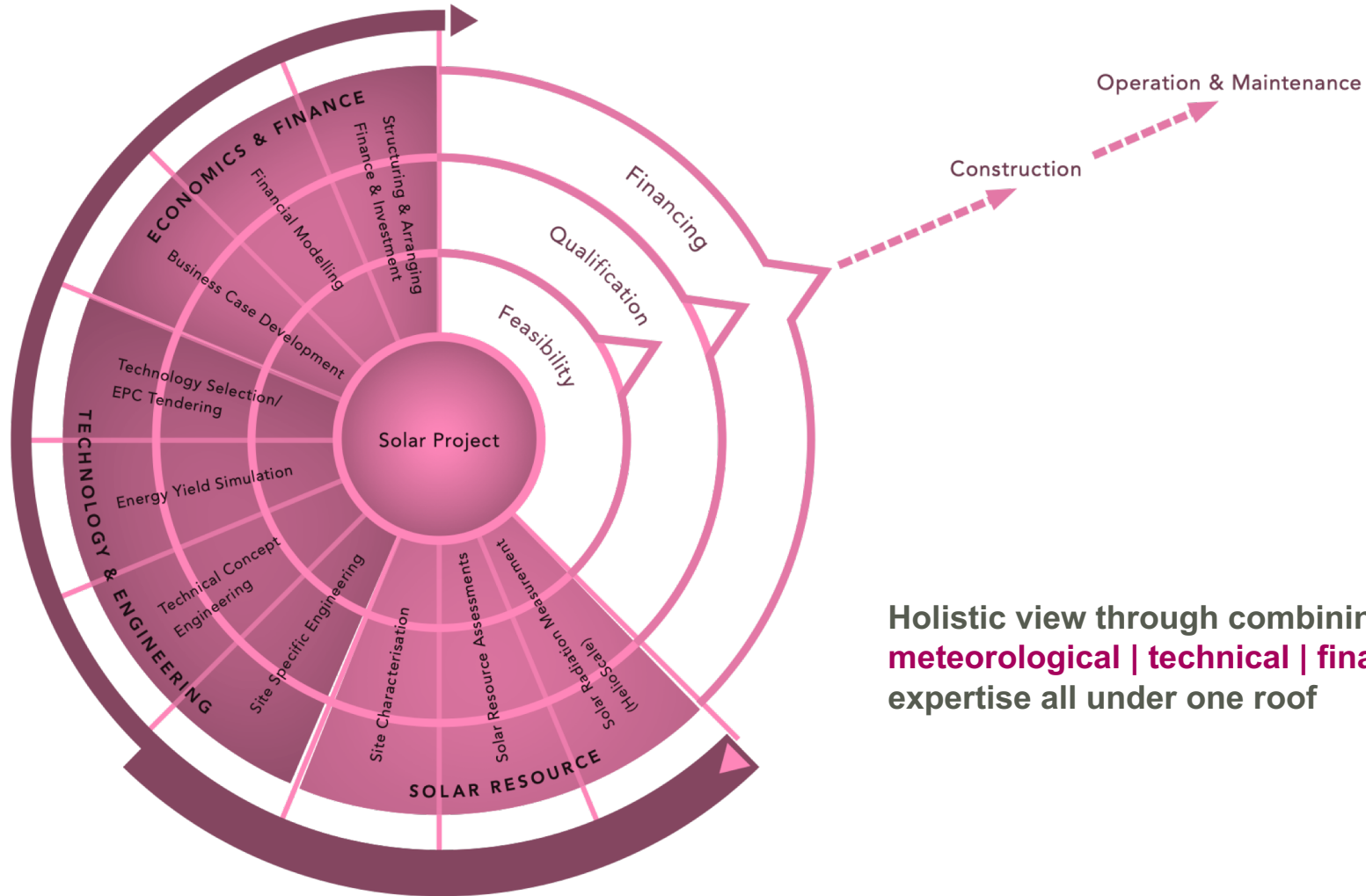
Independent experts for solar energy solutions

- Established 2009 in Hamburg, Germany
- Under Management with combined experience of > 70 years
- Covering photovoltaic (PV), solar process heat, concentrating solar power (CSP), floating PV, Battery and Energy Storage system, solar research, independent power producers (IPP) & utilities
- Expertise: >7000 MW solar, > 100 projects, > 40 countries
- Solutions for all steps of the project development chain from feasibility, project development, finance and investment to construction and operation



Suntrace Headquarters in Hamburg, Germany

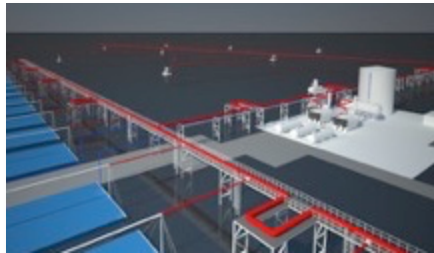
From initial concept to full realisation



Holistic view through combining
meteorological | technical | financial
expertise all under one roof



Technology & Engineering



- Basic Design
- Energy Yield Simulation
- Site Specific Engineering
- Techno-Economic Optimization
- Procurement
- Construction Supervision

Renewable Resource



- Solar & Wind Resource Assessments
- Site Qualification with Measurements:
- Solar, Wind, geophysical conditions

Project Development & Finance

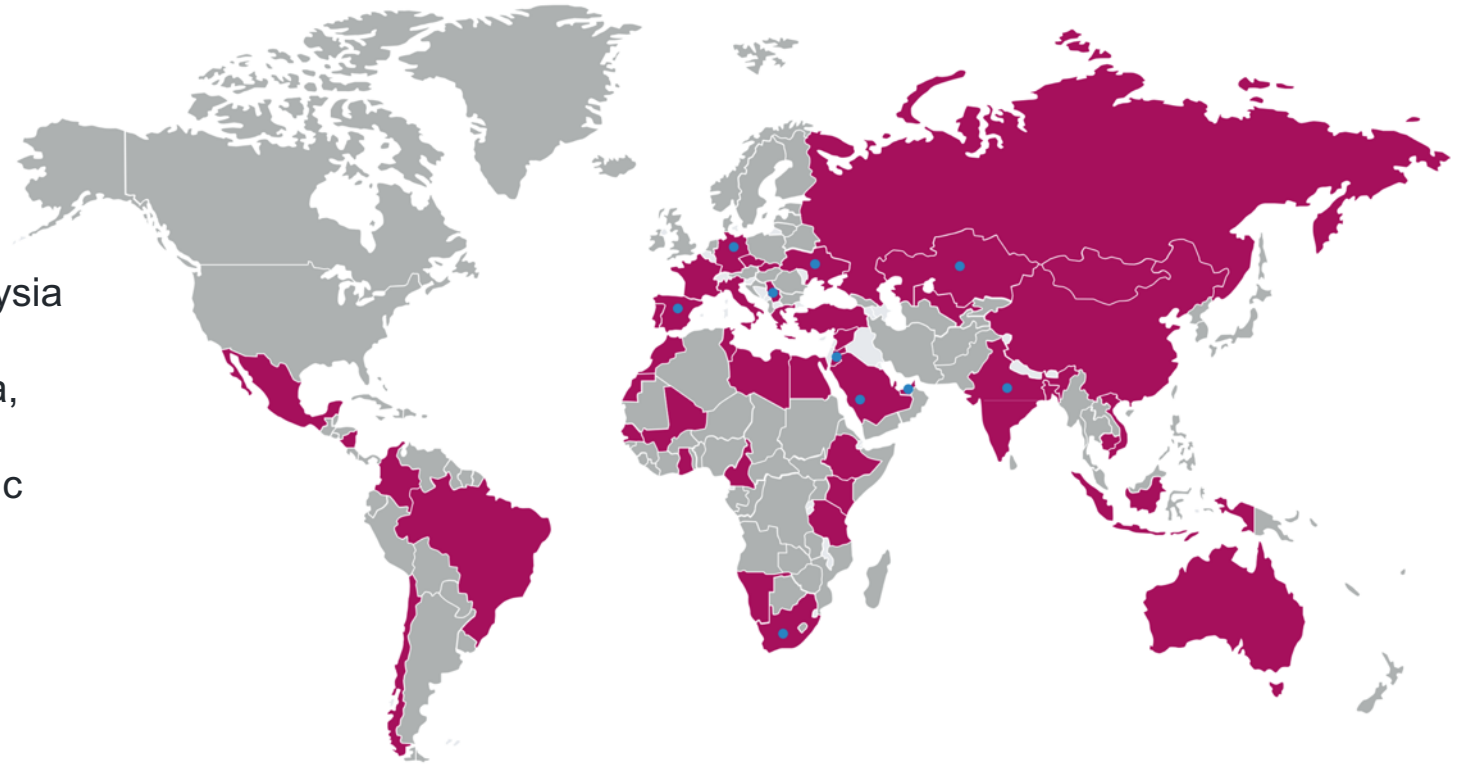


- Technical and Economic concepts
- Project development management
- Financial structuring and placement (equity and debt)



Angola, Australia, Bangladesh, Brazil,
Cambodia, Cameroon, Cape Verde, Chile,
China, Colombia, Cyprus, Czech Republic,
Egypt, Ethiopia, France, Germany, Ghana,
Greece, Guadeloupe, India, Indonesia, Italy,
Jordan, Kenya, Kosovo, Kuwait, Libya, Malaysia
Maldives, Mali, Mexico, Mongolia, Morocco,
Namibia, Nicaragua, Oman, Portugal, Russia,
Saudi Arabia, Slovakia, South Africa, Spain,
Syria, Tanzania, Tunisia, Turkey United Arab
Emirates, Uzbekistan, and Vietnam

Germany, India, South Africa, Ukraine,
Kazakhstan, UAE, Saudi Arabia, Jordan,
Serbia, Thailand



ADB: Technical and Commercial Advisory for a Utility Scale Solar PV Park in Cambodia

Suntrace supports the Asian Development Bank (ADB) in working with Cambodia's national utility, Electricité du Cambodge (EDC), to develop a solar park of 60 MW covering project feasibility and procurement support. As technical and commercial advisor for the project, the company is responsible for the following: development of a feasibility study report, procurement risk assessment, financial model, financial structuring of the project, traser and information memorandum for the project for marketing purposes, draft RfP documents with tender process inputs and support of tender process.

Services:

- Pre-Development Support
- Feasibility Study Report
- Environmental and Social Impact Assessment (EIA)
- Project Financial analysis and Economic Assessment
- Procurement Support



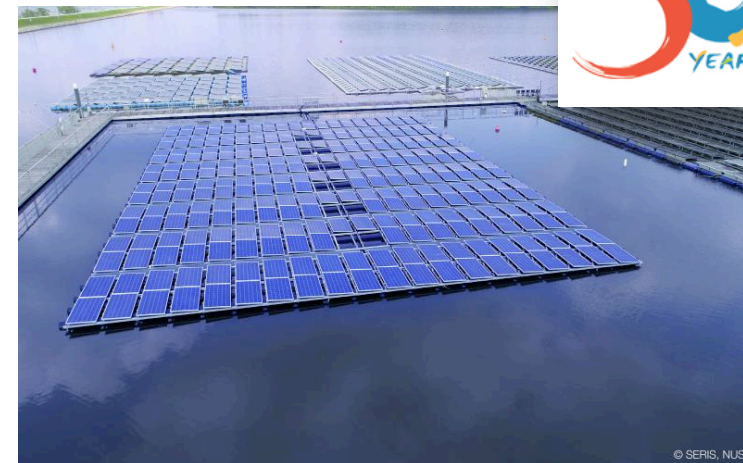
Vietnam – Technical Advisory (2020 - ongoing)

ADB: Technical and Commercial Advisory for 200 MW Floating PV in Viet Nam

Suntrace supports the Asian Development Bank (ADB) in working with EVN and MOIT, to develop up to 200 MW FPV plant covering project feasibility and procurement support. As technical and commercial advisor for the project, the company is responsible for the following: development of a feasibility study report, procurement risk assessment, financial model, financial structuring of the project, traser and information memorandum for the project for marketing purposes, draft RfP documents with tender process inputs and support of tender process.

Services:

- Pre-Development Support
- Feasibility Study Report
- Environmental and Social Impact Assessment (EIA)
- Project Financial analysis and Economic Assessment
- Procurement Support

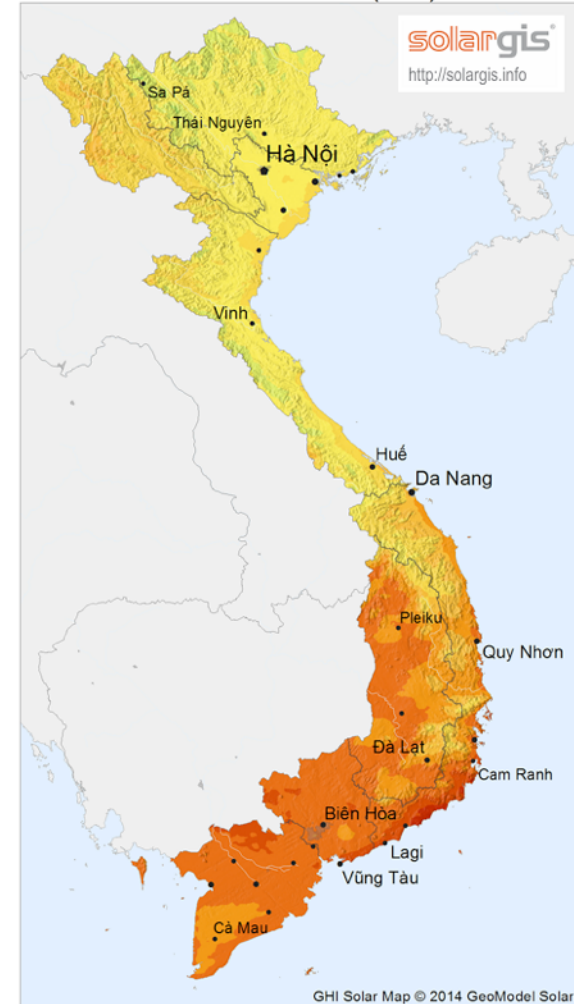


Vietnam – Owner's Engineer for 2 x 50 MW PV plant (2018-2019)

Suntrace is appointed as Owner's Engineer for 2 x 50 MW PV plant in Vietnam to provide technical advisory for a private Client.

Services:

- Review of Pre-Feasibility studies and Feasibility studies
- Site visit
- Techno-economic optimization
- Preparation of functional technical specification for tender documents
- EPC and O&M Tender Support
- Finalize negotiations with preferred EPC and O&M bidder



Vietnam – Solar Resources (2017 – 2019)

World Bank: Renewable Energy Resource Mapping: Solar Measurements in Vietnam

The ESMAP initiative aims to support country-driven efforts to improve renewable energy resource awareness, put in place appropriate policy frameworks for renewable energy development, and provide 'open access' to resource and geospatial mapping data. It also supports the Global Atlas being developed by the International Renewable Energy Agency (IRENA) by improving the data availability and quality that can be accessed through the online portal on a modular basis.

Services:

- Identifying and proposing suitable sites for hosting the solar measurement equipment
- Procuring and importing high quality measuring equipment
- Arranging for site permitting and access;
- Commissioning of the sites
- Operation and maintenance of 5 solar measurement stations for 24 months including data quality control
- Providing two years of high quality, 'bankable' meteorological data
- Ensuring strong local involvement and capacity building



Indonesia – Pre-feasibility study for solar with battery storage for an airport (2019)

Pre-feasibility study for solar with battery storage for an airport

Suntrace was mandated by a private client to assess the potential of 10 -30MW solar application with Battery Storage at an airport in Indonesia.

Services:

- Conduct Initial Solar Resource Assessments and derive the best estimate for GHI
- Generate Typical Meteorological Year (TMY) data files
- Energy yield assessment
- Pre-feasibility report with recommendations

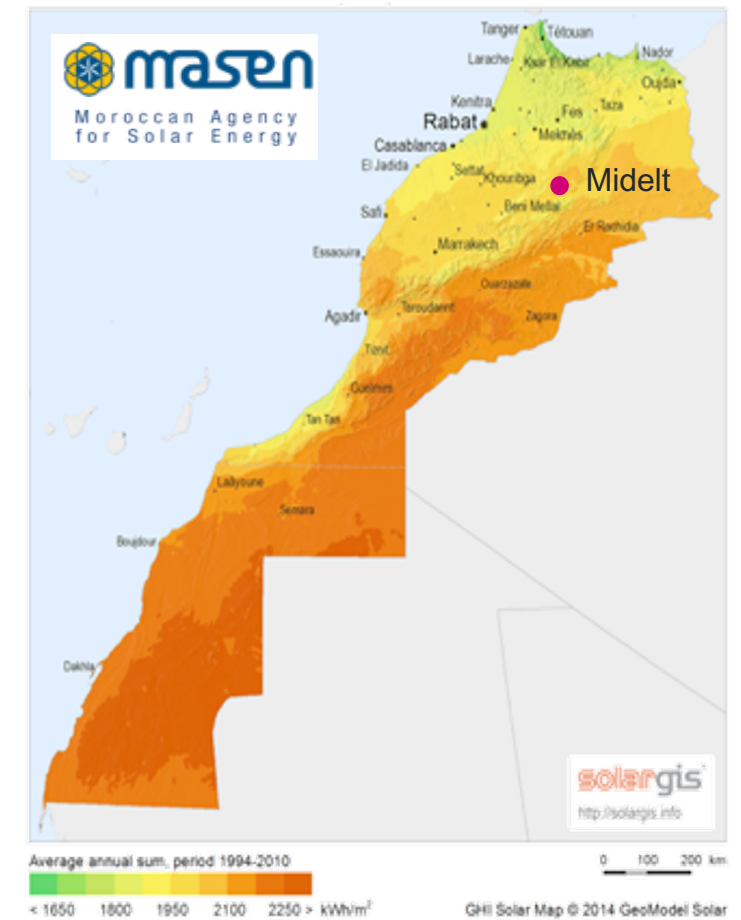


MASEN: Noor Midelt Solar Complex – PV & CSP Hybrid Concept (2 x 400 MW)

The Moroccan Agency for Solar Energy (MASEN) was established to develop and manage the 2000 MW of solar power facilities envisioned under the Moroccan National Plan Against Climate Change and the Moroccan Solar Plan (NOOR) including the Noor Midelt Project. Suntrace, in a consortium with Gopa-intec, has recently completed the feasibility study for the NOOR Midelt solar complex that is planned to have approximately 800-1600 MW CSP/PV solar capacity installed by 2020. Under this assignment, Suntrace has assessed different technology configurations to develop the most economic and reliable solution for the Moroccan Solar Plan. Masen initiated a 3-stage tendering process for these projects with continued support from Suntrace and recently, awarded EDF Renouvelables, Masdar (Abu Dhabi Future Energy Company) & Green of Africa as a consortium to invest and build the project. The PPA negotiation is in progress.

Services:

- Detailed Feasibility Study
- Site Assessment
- Technology Review (PV and CSP)
- Engineering
- Layout of Project
- Techno-Economic Optimization
- Financial Model, Sensitivity Analysis
- Risk Assessment
- Environmental and Social Impact Assessment (preliminary)
- Grid Impact Assessment
- Tendering Process for Selection of IPP
- Request for Qualification
- Request for Proposal Stage 1 & 2



B2Gold: Owner's Engineering for Fekola Gold Mine in Mali (38 MWp PV/ 15 MWh Battery)

We did a feasibility study for a PV-HFO hybrid with battery concept for a gold mine in Mali. The measurement campaign we started in 2018 is still ongoing and we got the contract of providing engineering and procurement services as well as managing the project.

Services:

- *Measurement campaign (ongoing)*
- *Feasibility study (done)*
- Detailed engineering
- Procurement support
- Construction supervision
- Project management



How can Suntrace support you?

Your independent solar experts in emerging markets

- Thai companies/government
 - Explore market opportunities e.g. in Central Asia, South Asia, Africa
 - Provide support in highly competitive tenders from large DFIs (SRA, EYA, Tech-DD, Techno-economic optimization, Tariff optimization)
 - Capacity building
 - Technical expertise in solar and renewables according to international standards
- European companies
 - Explore market opportunities in South East Asia
 - Technical support for your solar and renewables projects in the region
 - Your local partner in South East Asia with office in Bangkok
- Other services from Dornier Group
 - VPC – RE Grid Integration Study/Solutions, Energy Storage Planning services
 - DCI – Solar-Wastewater solutions, Solar-mobility solutions

We have won the trust of a growing international base of public and private clients



What can we do for you?

Let's keep in touch



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BEST...