

# TEWA Solar

THE EFFICIENT WAY

## Company capabilities

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Reference	COM_GE_002 – Company capabilities
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Review	1

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### 1. Technical project management

- Complete technical management of electricity generation and storage projects:
  - o Study management
  - o Coordination between the various shareholders
  - o Comments list management
  - o Technical and economic analysis of deviations and variations to the contract
  - o Analysis of supplier offers, management of subcontractors
  - o Establishment and monitoring of the planning of studies and supplies
- Construction supervision :
  - o Project management assistance - EPC site supervision
- Commissioning management :
  - o Drafting and implementation of test procedures
  - o Risk analysis and implementation of prevention plans
  - o Management of subcontractors / suppliers / service providers
  - o Management of the planning and interactions between the different shareholders
- Assistance to the project owner :
  - o Preparation of technical specifications for contracts
  - o Assistance in the subcontracting tender process
  - o Assistance in the execution of contracts
  - o Contradictory analysis of third party studies
  - o Analysis of grid codes / network operator requirements
  - o Assistance in the process of connecting to the electricity grid

## 2. Engineering and design

- Overall design of electricity generation and storage systems :
  - o Equipment layout drawings
  - o Single line diagram
  - o Communication architecture
  - o Functional analysis
- Photovoltaic Design :
  - o Site plans, layout plans
  - o Yield studies
  - o Profitability study (LCOE, P&L Projects, LCOS)
  - o Techno-economic optimization of PV & storage capacities of self-consumption projects
  - o Sizing / Choice of components (cables, electrical protections, inverters, DC/AC ratio optimization)
- Medium and high voltage design
  - o Sizing of primary electrical equipment
  - o Specification of equipment for consultation with suppliers
  - o Current Transformers and Voltage Transformers Calculation Notes
  - o Notes on load flow and short circuit calculations
  - o DC, LV, HV/MV cable calculation notes
  - o Sizing of reactive compensation and harmonic filtering equipment
- For design and execution phases

## 3. Realization

- Factory Acceptance Tests of equipment
- Performing PV commissioning tests :
  - o AC and DC LV cable testing: insulation, continuity, polarity
  - o PV string tests: I/V curves
  - o Checking the continuity of the earth
  - o Validation of weather equipment (pyranometers, weather stations, etc.)
- Performing HV/MV commissioning tests:
  - o Insulation testing
  - o Testing of equipment: cubicles, circuit breakers, disconnectors, harmonic filters, etc.
  - o Soil resistivity measurements

#### 4. Operation and maintenance

- Performance analysis / optimization / improvement
- Technical expertise on PV / LV / MV / HV failures
- Rewamping engineering :
  - o Electrical design and integration into existing assets
  - o Control upgrade (SCADA / PPC)

#### 5. Training

- On-site training in PV operation and maintenance
- Training in PV system design
- Technical project management training
- Training on grid codes/ network operator requirements