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ABOUT THIS CATALOGUE

In this catalog you will find our core services in the field of Engineering & Technical Advisory for photovoltaics (PV) and battery energy storage systems (BESS). We also offer individual design and consulting services on request, including grid connection and planning consent services. Please feel free to contact us!

ABOUT THE GREENTECH GROUP

greentech is an integrated solar and storage specialist: Our range of services includes project development, construction and operational management of PV power plants and BESS in selected European markets. With an interdisciplinary team of around 200 people at several locations in Germany, UK, Ireland and Italy, greentech is active in nine countries. We manage a portfolio of over 1.5 GW in technical asset and portfolio management and have our own project development pipeline of 10 GW of ground-mounted PV systems in Germany, UK and Italy. The company offers further services in the areas of engineering, technical consulting, consenting, financing and electricity marketing.

ENGINEERING & TECHNICAL ADVISORY AT GREENTECH

For photovoltaic systems of all types and battery storage systems, greentech offers comprehensive technical advice and a wide range of engineering services to ensure optimum system performance – from development to subsequent operation across all project phases. Our services range from creating preliminary PV plant and BESS designs with yield simulations and reports to full detailed and grid integration design (including designing and implementing efficient communication and control technologies) and can provide fully wrapped services that can include any consents from government agencies. Furthermore, we support in managing tenders and provide construction and acceptance supervision. In addition, greentech offers technical inspections and advice as part of technical due diligences. During the operating phase, we carry out special surveys or thermographic inspections and implement complex projects such as repowering measures. To date, greentech has provided technical consulting and owner's engineering services for a total plant volume of around 5 GW.

SPECIALISTS WITH INTEGRATED PRACTICAL AND THEORETICAL KNOWLEDGE

We know: To successfully complete complex projects with realistic and reliable outcomes, a comprehensive interdisciplinary approach is essential – requiring close collaboration across different fields of expertise. In greentech's Engineering & Technical Advisory division, experienced engineers collaborate with grid and electrical engineering specialists, TÜV-certified professionals (Technical Inspection Association), VdS-certified experts (German safety and certification authority), and IT specialists to deliver reliable and compliant solutions.

greentech can also draw upon in-house grid and planning consenting expertise and a comprehensive network of other specialists with practical experience in project development, plant construction and operational management at any time. This is why, as technical asset and portfolio manager, we are able to continue providing full technical and commercial support for plants even after a successful consulting engagement – and remain your point of contact for future questions and challenges.

FOCUS OF GREENTECH ENGINEERING & TECHNICAL ADVISORY

The **„System Engineering“** team is responsible for the DC-side design of the PV system or BESS “up to the inverter” and provides guidance and consulting throughout the construction and operational phases.

The **„Grid Integration“** team is responsible for the AC-side grid connection design and electrical design, including the measurement concept, “from the inverter to the grid connection point.”

The **„Power Plant IT & ICS“** team is responsible for designing secure plant IT, developing concepts for plant communication as well as measurement and control technology, and implementing them. It also provides IT security solutions for both new and existing plants to ensure safe and reliable operation.

All projects are managed and supervised by a dedicated project manager and a key account manager. At the start of the assignment, we agree on individual priorities and milestones with you. Regular updates give you complete transparency about the processing status of the projects. All design, analysis, and inspection results are always subject to double checking to consistently ensure high service quality and reliable outcomes.

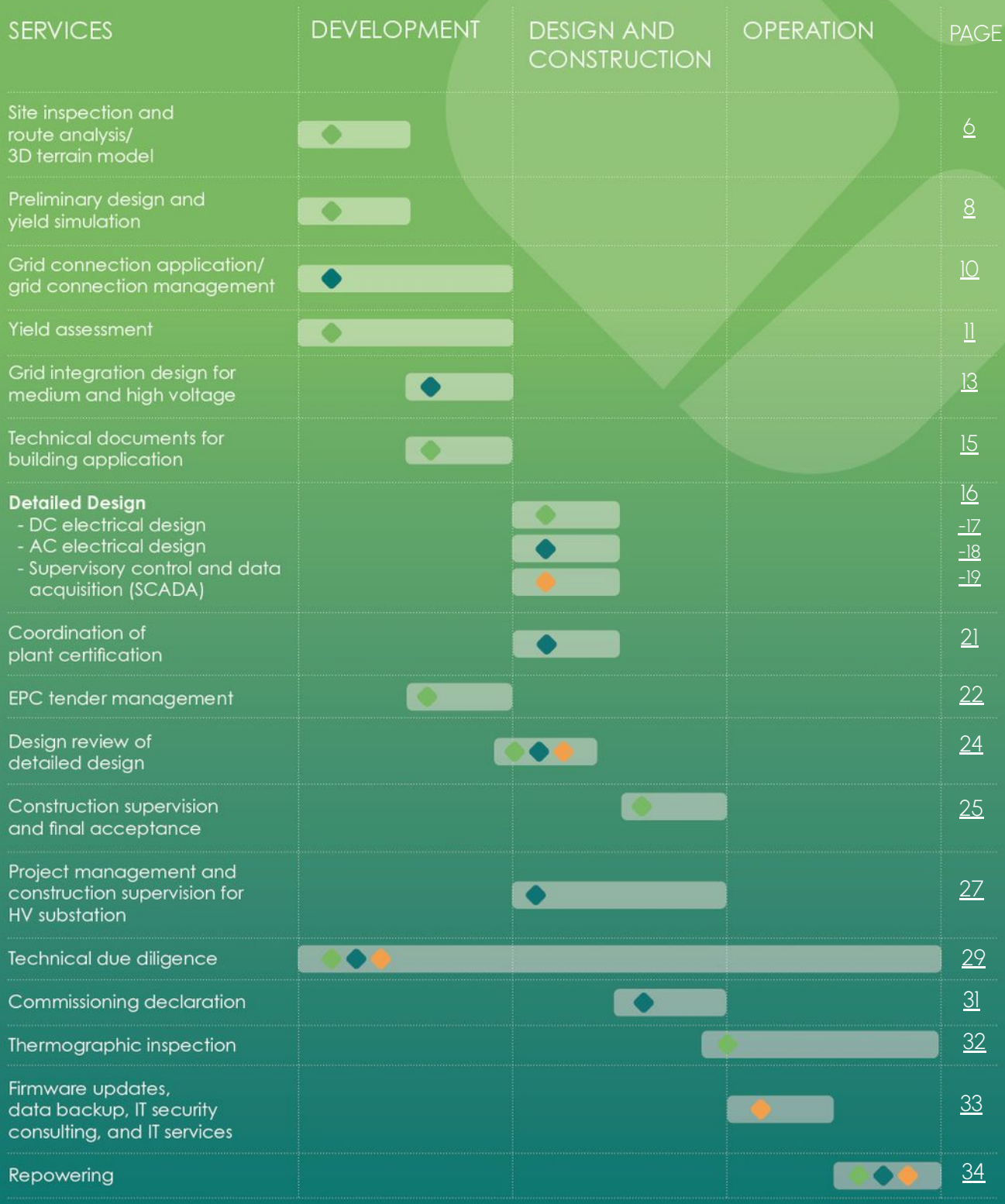
SOFTWARE PROGRAMMES FOR RELIABLE AND REALISTIC RESULTS

You cannot do it without tools: In addition to technical knowledge and many years of experience, we rely on various software programmes for reliable design and calculation and the determination of realistic results, and we regularly update our skills regarding their use and new developments. These include, among others:

- PVcase: We use the 3D software PVcase in AutoCAD for the preliminary PV plant and BESS design to the detailed design. The program enables the design of the area while taking the terrain structure into account. A 3D terrain analysis makes it possible to optimize the alignment, row spacing and tilt of the modules.
- PVsyst: We carry out yield simulation, analysis and evaluation of PV power plants, also in combination with battery energy storage systems, with the help of PVsyst. A PVsyst yield simulation forms the basis for a bankable yield report.
- PowerFactory: The programme enables system-specific calculations. Load flow and short-circuit current calculations are carried out for the design of equipment.
- TabTool: The Field App, co-developed by greentech, is used for the digital documentation of construction and commissioning support, as well as for the coherent preparation of inspection reports.

OVERVIEW OF SERVICES FOR PV AND BESS

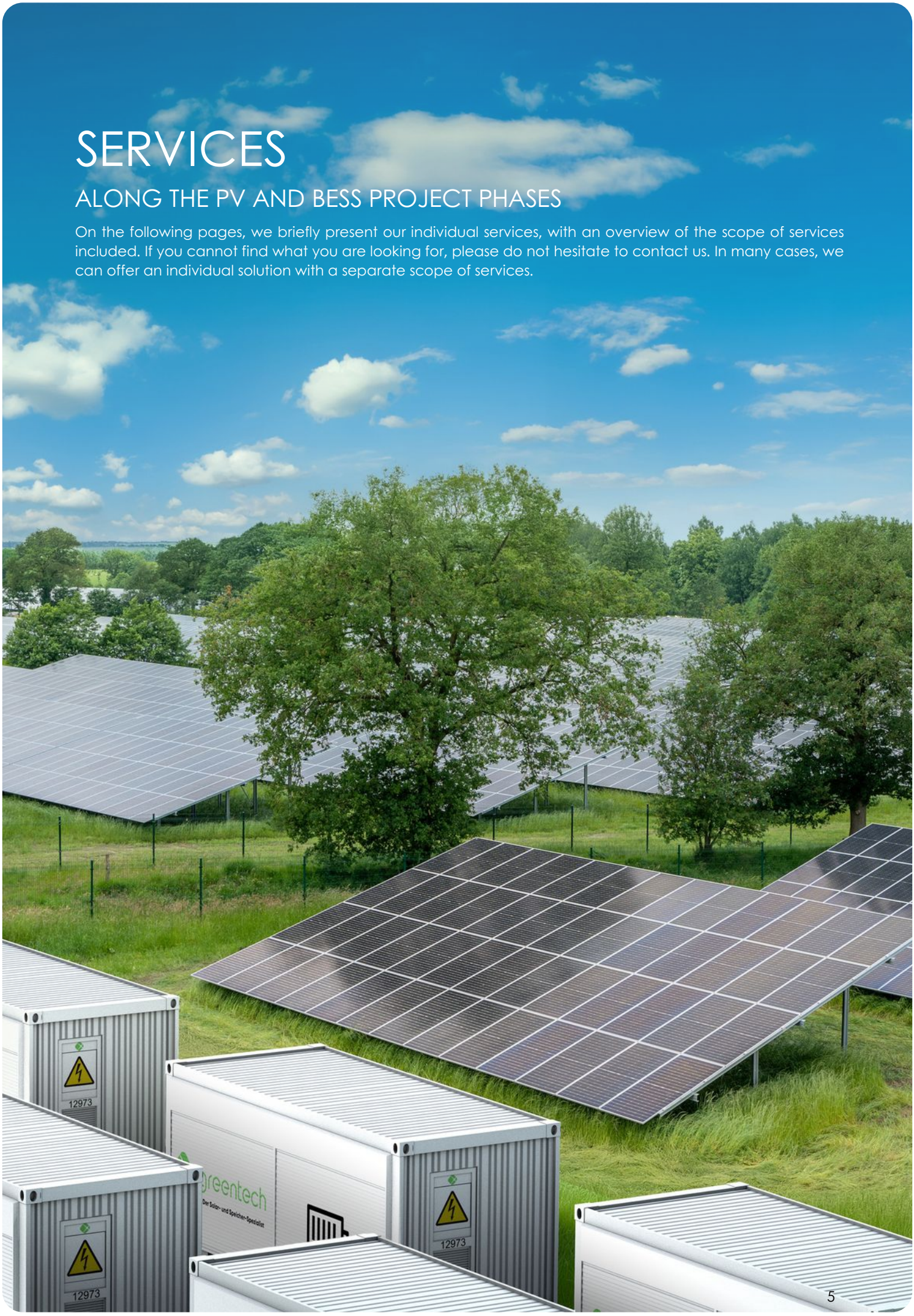
BASED ON THE PROJECT PHASES



SERVICES

ALONG THE PV AND BESS PROJECT PHASES

On the following pages, we briefly present our individual services, with an overview of the scope of services included. If you cannot find what you are looking for, please do not hesitate to contact us. In many cases, we can offer an individual solution with a separate scope of services.



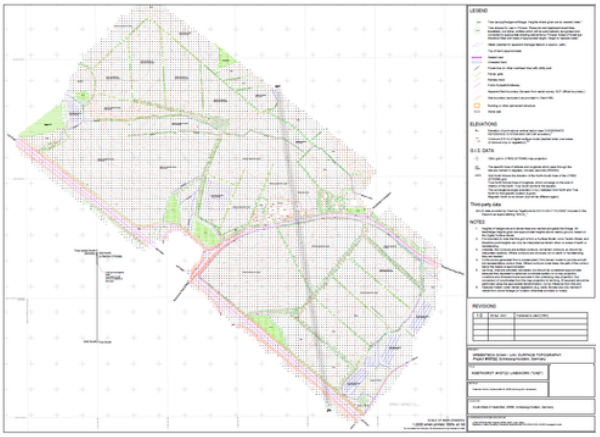
SYSTEM ENGINEERING

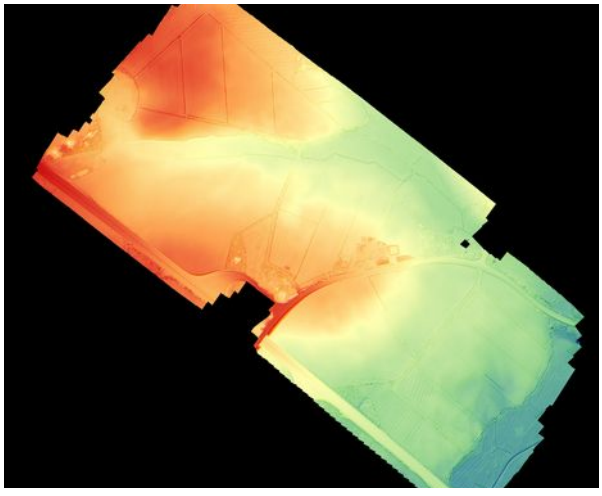
SITE INSPECTION / 3D TERRAIN MODEL

We collect all the information required for optimum design of the PV system or the BESS on site. The more detailed the site analysis, the more realistic the system design can be. It takes into account the existing special features of the area, such as differences in height, shading objects, unevenness or areas that cannot be built on. In addition to the site survey and route analysis, we use modern drone technology to create a terrain model in order to achieve the most efficient and accurate results possible.

An early drone survey of the area enables us to create an accurate 3D model of the potential solar power plant or BESS site and create a terrain profile that can later be used in the AutoCAD programme. Video recordings can also be made to document the route.

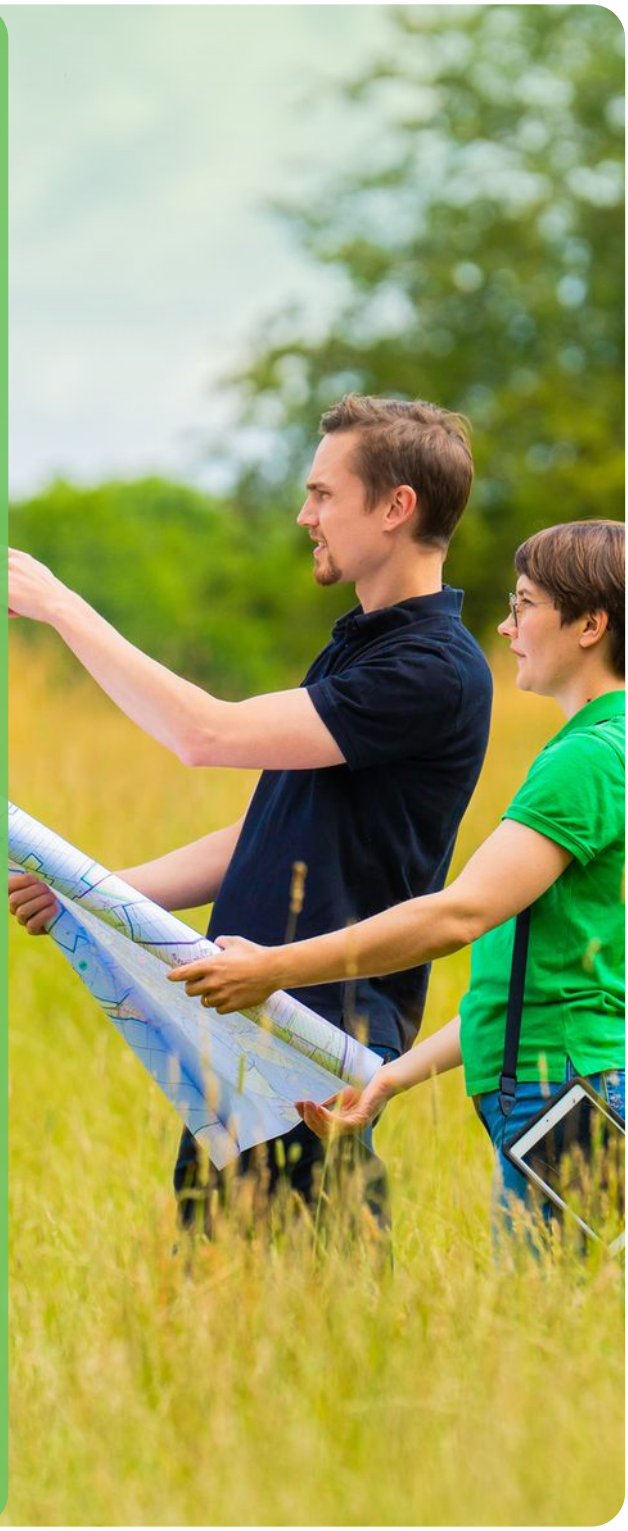
Our engineers know the requirements for modern ground-mounted PV systems and BESS from a large number of successful projects and match these precisely with the local conditions.





Images: Terrain models for topography with information on existing objects and height differences

SCOPE OF SERVICES FOR SITE INSPECTION/ 3D TERRAIN MODEL



SITE INSPECTION & ROUTE ANALYSIS

- Inspection of the area and routes for optimized design in the development and building application phase
- Registration and description of the site including informative images and videos. Registration and description of possible access routes to the project site for the purpose of development for the construction and operation phase. Registration and description of potentially suitable positions for transformer stations, if necessary battery storage containers, gates and service routes.
- Estimation of traffic volume due to heavy goods vehicles during the construction phase and drag curve analysis via software
- Tabular representation of the identified routes, road name/category and special features such as height restrictions, weight restrictions, and access restrictions

3D TERRAIN MODEL

- Aerial survey of the area on site by drone
- Georeferenced AutoCAD model incl. shading objects e.g. "PVcase ready" trees

THIS MIGHT ALSO BE OF INTEREST

PRELIMINARY DESIGN AND YIELD SIMULATION
page 8

GRID CONNECTION APPLICATION / GRID CONNECTION MANAGEMENT
page 10

We would be happy to advise you on the specific requirements for your project.

SYSTEM ENGINEERING

PRELIMINARY DESIGN & YIELD SIMULATION

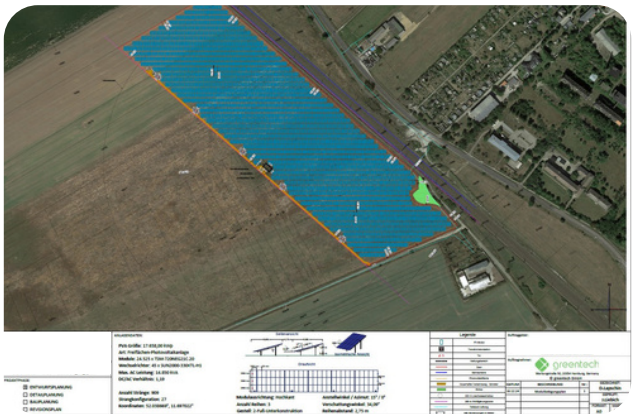
The preliminary design is a design plan with module and/or battery storage allocation, fence, medium-voltage stations and service routes within the PV area and also serves as the basis for the grid connection request. It forms the basis for a technical and economic assessment of the site potential in terms of the installable power capacity and the expected yield. We take the individual local conditions and requirements of the project into account during creation in order to achieve a realistic estimate of the project.

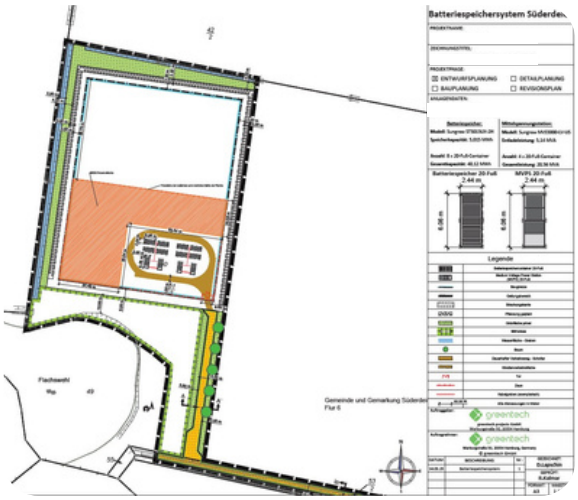
THE PRELIMINARY DESIGN DETERMINES THE OPTIMUM SOLUTION

For the preliminary design, we use a current system design that is optimized for mechanical installation and electrical wiring for most areas in Europe. The relevant parameters, such as row spacing, tilt and DC/AC ratio, are varied in different scenarios to determine the best possible system design. The PVcase software enables designing as a 3D model. This means that the exact topography of an area, which was previously surveyed using a drone, can be taken into account and row spacing and tilt can be defined quickly and variously. The results can either be used for an EPC tender or form the basis for the subsequent detailed design.

YIELD SIMULATION DETERMINES POTENTIAL ECONOMIC SUCCESS

Based on the preliminary design, we use a simulation to determine the expected yield of the project using the PVsyst software. We use various data sources for the irradiation analysis, such as DWD, SolarGIS and Meteonorm. For the most accurate shading analysis possible, we also provide the simulation software with information on the terrain, the planned system design and surrounding shading objects. The technical design of the system, such as the connection to the grid, is also analysed with regard to possible yield losses.





Images: various design plans for a photovoltaic system and a battery storage system.

ANALYSIS OF THE EXPECTED LEVELIZED COST OF ELECTRICITY (PV)

The lower the levelized cost of electricity (LCOE), the higher the economic efficiency of the system. We take the LCOE into account in our plant design and find an optimum balance between the determining factors based on the given conditions and customer requirements. We also use current representative indicative prices for this purpose. Thanks to greentech's own EPC and O&M divisions, we are able to take a holistic view of the project and make valid, up-to-date price assumptions.

SCOPE OF SERVICES PRELIMINARY DESIGN & YIELD SIMULATION **PHOTOVOLTAICS** AND **BESS**

PRELIMINARY DESIGN TO ESTIMATE DC AND AC CAPACITY

- Determination of requirements such as grid connection capacity, maximum building height and maximum ground coverage ratio
- Import of terrain information (contour lines) and shading objects (trees, buildings, etc.) into AutoCAD
- Creation of a plant design in AutoCAD according to greentech standard
- List of type and number of main components
  - PV modules, inverters, transformer stations
  - battery storage containers, battery inverters and transformers
- Compilation of the results incl. plant design as AutoCAD .dwg and .pdf file

PREPARATION OF YIELD SIMULATION TO ESTIMATE REVENUE

- Adoption of the preliminary design
- Irradiation analysis (e.g. DWD, Meteonorm, Copernicus)
- Shading analysis
- Simulation execution (PVsyst)

BY REQUEST: ANALYSIS OF THE LEVELIZED COST OF ELECTRICITY (LCOE) FOR PHOTOVOLTAIC PROJECTS

- The LCOE analysis is based on the system and the selected system design.

GRID CONNECTION APPLICATION & APPLICATION MANAGEMENT

A non-binding grid connection application provides up-to-date information on the availability and location of a grid connection point. Based on an preliminary design, we work with you to assess the voltage level at which a connection is reasonable for the project, as it is not worth taking the step from a medium-voltage connection to a high-voltage connection for every project. The grid operator-specific forms are then prepared and submitted to the grid operator.

As part of the grid application process and grid application management, a binding grid request is submitted to the grid operator in order to obtain a reservation for the grid connection point. One aim here is to keep the reservation in line with changing project-specific values such as the connected capacity and to secure any necessary deadline extensions. We support you through the entire authorisation process right up to the technical coordination meeting with the grid operator.

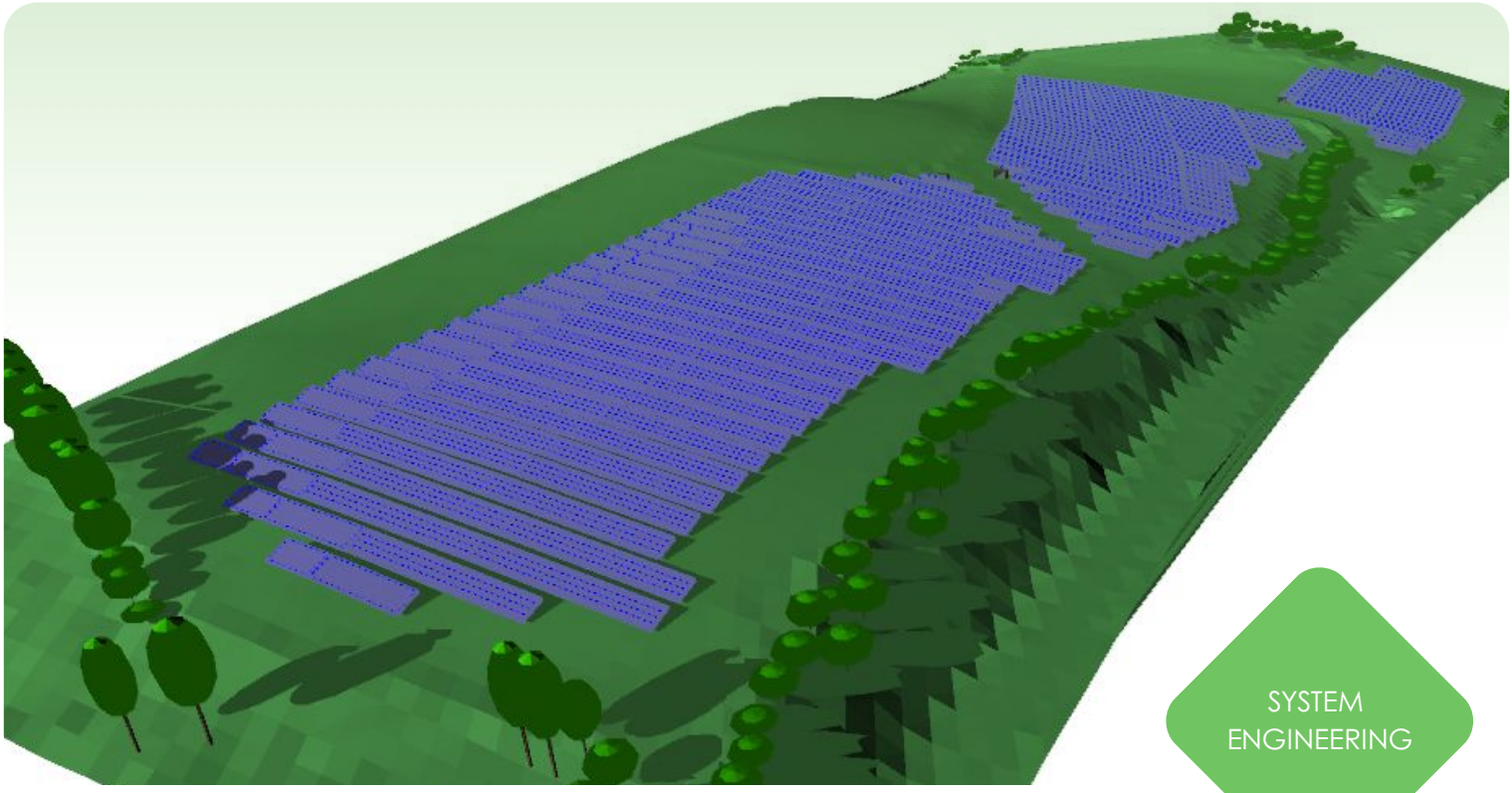
SCOPE OF SERVICES

NON-BINDING GRID CONNECTION APPLICATION

- Identification of a possible grid connection point and the associated grid operator
- Compilation of relevant documents for network registration
- Filling out grid operator-specific forms
- Submission of the documents to the grid operator
- One-off follow-up on the processing time (8-week deadline)
- One-off summary and feedback to the customer

GRID APPLICATION AND APPLICATION MANAGEMENT

- Creation of a binding grid request to obtain a temporary reservation
- Deadline monitoring of the temporary reservation and obtaining up to two deadline extensions
- Evaluation of the grid connection offer
- Supporting the commissioning process until the order is confirmed by the grid operator, or supporting the technical coordination meeting
- Review of the grid connection contract



SYSTEM ENGINEERING

PREPARATION OF BANKABLE YIELD ASSESSMENTS (PV)

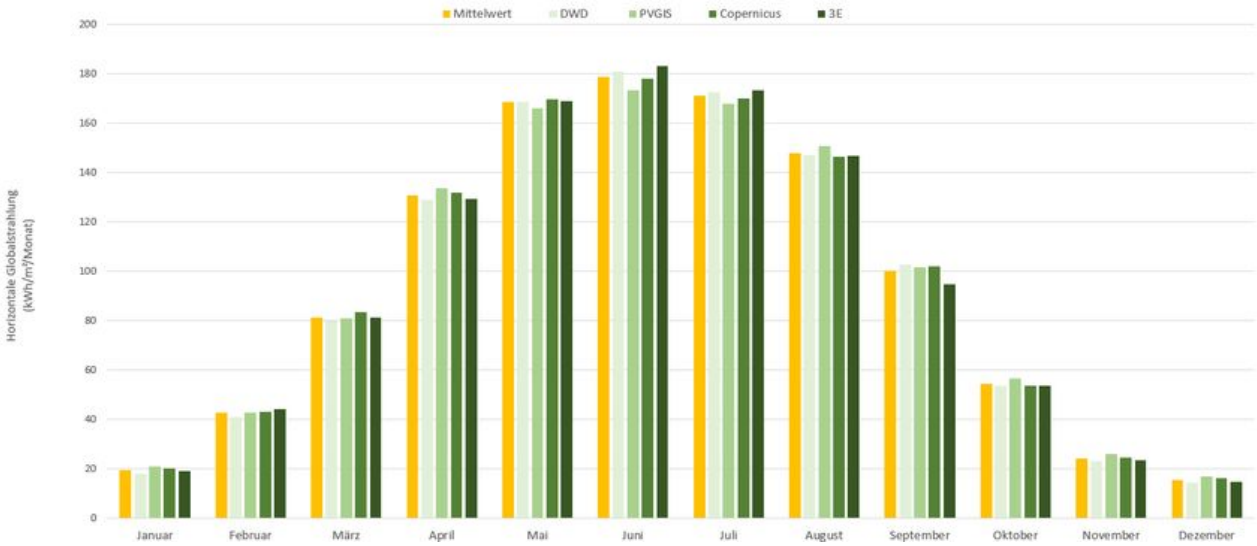
As the basis for project financing, the yield report is an elementary component of system design. It also provides the frame of reference for possible guarantees within the scope of technical management. For a realistic, reliable yield forecast that is accepted by banks, potential buyers and technical advisors, a methodically correct preparation is necessary, taking into account all individual influencing factors and the performance characteristics of the selected individual components.

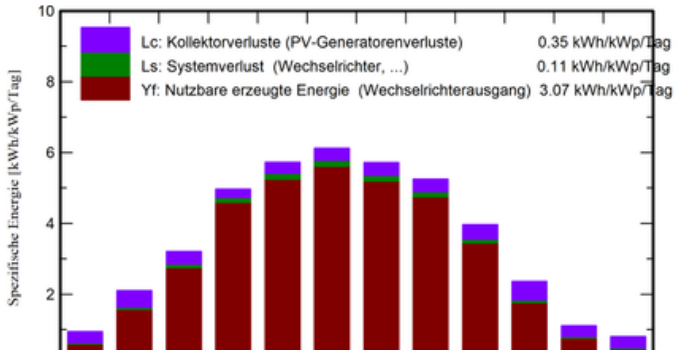
greentech prepares well-founded bankable yield assessments for PV systems, considering all relevant factors, which objectively present and justify the economic potential of current or planned projects. When estimating maximum realistic yields and performances, we benefit in particular from our many years of experience in operational management. We can reliably assess and justify why PV yield forecasts may have been too optimistic or too conservative.

USE OF YIELD ASSESSMENTS

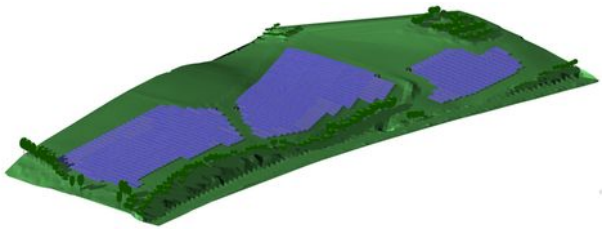
We prepare your yield assessment if you want to

- secure the financing of a project,
- include the value of your investment in your sales offer,
- convince potential investors of your future PV project,
- analyze the effects of technical adjustments, for example in the context of repowering,
- analyze different versions of a project for their financial model,
- receive an independent assessment of the revenue potential of your project.





Images:
Above: Irradiation analysis with values from various sources. Left: Calculation of the monthly specific yield for the first year of operation. Below: Shadowing scene



HOW TO RECOGNIZE A GOOD YIELD REPORT

- Objectively created for the most realistic result possible
- Comprehensive and detailed survey for the best possible accuracy
- Professionally analysed and evaluated for maximum resilience
- Conclusively well-founded for the best possible transparency and traceability for all parties

SCOPE OF SERVICES FOR PREPARATION OF YIELD ASSESSMENTS

- Site-specific irradiation analysis
- Analysis of the technical design incl. shading analysis
- PVsyst simulation execution
- Evaluation of loss factors and KPIs
- Bankable yield assessment and presentation of the results

THIS MIGHT ALSO BE OF INTEREST

PRELIMINARY DESIGN & YIELD SIMULATION
Page 8

TECHNICAL DUE DILIGENCE
Page 29

We would be happy to advise you on the specific requirements for your project.

GRID INTEGRATION DESIGN - MEDIUM AND HIGH VOLTAGE

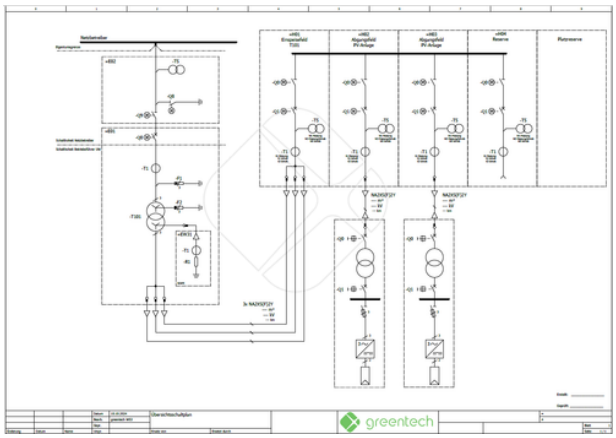
Grid integration design according to the applicable grid code is an elementary part of system design. Based on your designed system and the grid operator's specifications, we select the right grid connection components for your PV or BESS project, including route cables, transformers and metering, protection and control technology. Our focus is on the area of photovoltaic and storage technology. We carry out load flow and short-circuit current calculations, create an overview circuit diagram including the required protective devices and controllers and develop a suitable measurement concept.

The information can be used directly in communication with project participants or in the tendering and procurement of building materials. As part of our grid connection services, we also handle the grid connection application and all communication with the grid operator.

ESSENTIAL COMPONENTS OF THE GRID INTEGRATION DESIGN

CREATION OF A SINGLE-LINE DIAGRAM (SLD)

The SLD is not only a central component for system certification, it also serves as a basis for the tendering of system components or as a source for fault analyses during subsequent operation. The SLD provides information on the generation units installed, the design of high- or medium-voltage transformers, cable lengths and types, inverter data or protection and control equipment.



Graphic: Single-line Diagram (SLD)

REACTIVE POWER CALCULATION

We take into account the individual specifications of the grid operator and make the actual future net feed-in power of your system transparent. This allows the necessary changes to be made to the design of the system for the required reactive power quantity during the development phase in order to meet the grid operator's later requirements with regard to reactive power. In this way, the project remains economically realistic and there are no surprises of feed-in limitations during system certification.

CREATION OF MEASUREMENT CONCEPTS

Photovoltaic systems and battery storage systems should be "thought through" with a view towards the long term: Attention should therefore be paid to a future-oriented measurement concept for the system right from the start. We create an individual measurement concept for you as part of the grid connection design, so that complicated refitting measures can be avoided later on.

CALCULATION OF ACTIVE POWER LOSSES

If the energy transmission losses of the system are only estimated as a lump sum during project development, this can later have an impact on the economic efficiency of the system. We calculate active power losses for both systems and projects and ensure that transmission losses are accurately mapped and components are designed economically at the same time.

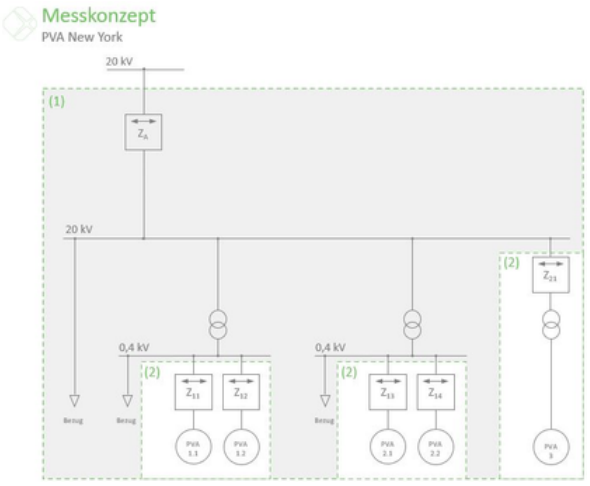


Image: Measurement concept

SCOPE OF SERVICES
GRID INTEGRATION DESIGN - MEDIUM AND HIGH VOLTAGE

- Rough modeling of the PV system/BESS in DIgSILENT PowerFactory including performance of load flow and short-circuit calculations
- Design of components (route cable systems, transformers, switchgears)
- Creation of a single-line diagram incl. measurement, protection and control technology
- Calculation of the system-specific maximum active power losses
- Creation of a future-proof measurement concept

THIS MIGHT ALSO BE OF INTEREST

GRID CONNECTION APPLICATION &
GRID CONNECTION APPLICATION MANAGEMENT
Page 10

PRELIMINARY DESIGN & YIELD SIMULATION
Seite 8

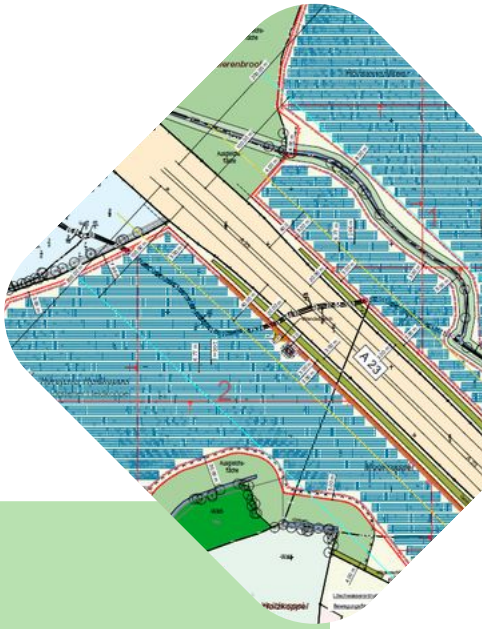
AC ELECTRICAL DESIGN
Page 18

We would be happy to advise you on the specific requirements for your project.

SYSTEM ENGINEERING

TECHNICAL DOCUMENTS FOR BUILDING APPLICATION

In the course of designing photovoltaic systems and battery storage systems, we prepare the technical documents required for the building application for submission to the responsible building authority. In addition to clarifying the special requirements of the project, this includes a plant design and a construction and operation description of the planned project, including a description of the main components selected. We also check the availability of necessary external documents and coordinate the procurement of missing expert reports if required.



SCOPE OF SERVICES
TECHNICAL DOCUMENTS FOR BUILDING APPLICATION

- Creation of a 3D plant design according to greentech standard on the basis of the development plan provided by the customer or a plan drawing
- Description of construction and operation, including:
  - General system description e.g. location and development of the project area
  - Description of risks and requirements based on concepts and expert reports provided by the customer, e.g. fire protection, noise protection or environmental protection reports
  - Description of operationally relevant aspects e.g. green care and dismounting of the PV system or BESS
  - Description of the main components of the PV system or the BESS
- Preparation of technical building application documents for the PV system or the BESS, e.g. terrain cross-sections, calculation of the ground coverage ratio and sealing

DETAILED DESIGN

DC electrical design I AC electrical design I Supervisory control and data acquisition (SCADA)

If required, greentech can create the complete detailed design for your PV system or your BESS. The System Engineering, Grid Integration and Power Plant IT & ICS teams work closely together.

ELEMENTS OF A COMPLETE IMPLEMENTATION PLAN

- DC electrical design of the PV system / BESS
  incl. technical specification of the main components, e.g. for tenders
- AC electrical design according to the applicable grid code
  incl. plant certification coordination & commissioning declaration
- Design and delivery of the required supervisory control and data acquisition (SCADA) technology

AVAILABLE AS A PACKAGE OR MODULAR, DEPENDING ON REQUIREMENTS

A complete detailed design is not always required. This is why greentech also provides you with the individual services of DC and AC electrical design as well as solutions for SCADA technology as individual components.

SCOPE OF SERVICES FOR DETAILED DESIGN

On the following pages, we list the components of the detailed design – DC electrical design, AC electrical design and SCADA design – as individual services with their corresponding scope of services.

Depending on your individual requirements, we will be happy to provide you with a complete offer for a detailed design or support you with individual steps of detailed and electrical design, including SCADA solutions. Feel free to contact us!

SYSTEM ENGINEERING

DC ELECTRICAL DESIGN

In DC electrical design, we deal with the detailed design of the generator side up to the inverter. It provides the parties entrusted with the construction with all relevant parameters for component procurement and construction. This usually includes the design, dimensioning and selection of string wiring or potential equalisation cables, the inverter connection, an earthing concept including earthing plans for module rows or the BESS as well as specifications for the design of cable trenches. We also create a list of the technical specifications of the main components that can be used to prepare the tender.

For the AC side from the inverter to the grid connection point, the grid integration team takes over the further electrical design. However, both teams work closely together from the outset to achieve the best possible end result.

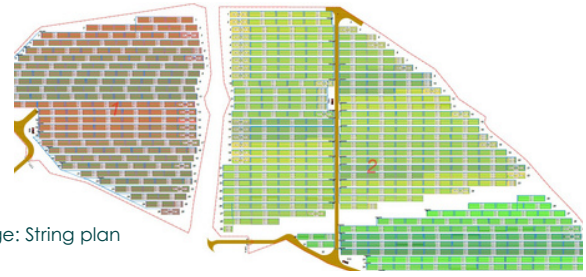


Image: String plan

SCOPE OF SERVICES
DC ELECTRICAL DESIGN PV & BESS

- Project coordination and DC electrical design:
  - Coordination of specific requirements and conditions from the building permit
  - Review and intake of components specified by the customer
  - Intake and verification of module design provided by the customer
  - Creation of DC/AC design incl. module design up to the DC input on the inverter
  - Designing, dimensioning and selecting of cables
  - Designing, dimensioning and selecting of earthing e.g. earthing of module rows
  - Creation of cable tables and cable loss calculations
  - Quantity determination of all main components – bill of materials and technical specification "RfQ"
- Creation of general plans and detailed drawings:
  - Detailed plans of the module allocation and corresponding string design
  - Detailed plans for the electrical installation (string wiring, cable routes, inverter installation and inverter connection, communication
  - Creation of an overview of results and submission of a digital folder with all plans
- Adjustments during the designing phase and final documentation

GRID INTEGRATION

AC ELECTRICAL DESIGN ACCORDING TO GRID CODE

We are happy to provide support with the final AC electrical design as part of the grid integration of your PV system or your BESS. In order to connect your system to the grid safely and in compliance with the law, we proceed in accordance with the local grid code and consider all the requirements for connecting and operating power generation systems to the low and medium-voltage grid as well as to the high-voltage grid. This also applies to the connection of substations.

Components of AC electrical design include the creation of a final system SLD, the final determination of the required reactive power capacity and the identification of active power losses.

SCOPE OF SERVICES FOR AC ELECTRICAL DESIGN PV & BESS

- Detailed modeling of the entire generation system based on EPC design (PV design)
- Load flow and short-circuit current calculation via DIgSILENT PowerFactory for designing / checking all components
- Identification of short-circuit strength, continuous current carrying capacity, switching capacity of the main components
- Identification of the maximum active power losses at 100% Uc at the grid connection point
- Identification of the voltage drops along the feed-in, from the inverter to the grid connection point
- Checking of grid impact
- Calculation of the reactive power capacity of the system
- Creation of a single-line diagram (SLD)
- Creation of a results report as a .pdf file incl. attachments
- One-off summary and feedback to the customer

- **The scope of services for coordinating of the plant certification can be found separately on page 21.**
- **The scope of services for preparing the commissioning declaration can be found separately on page 31.**

POWER PLANT IT & ICS

SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)

For your new system, we design and implement the entire integration and connection of the supervisory control and data acquisistion in accordance with the given PV system or BESS design, the electrical design, the specifications of the grid operator and the direct marketer. The focus here is on reliable and secure transmission of production data from the modules and inverters, the sensor components and the monitoring technology to the transformer stations and from there to the transfer station. From here, the data must be transmitted in a usable form to the responsible parties such as the operations manager / control room, the grid operator or the direct marketer via a secure VPN network with a GDPR-compliant, individual user concept and, where necessary, remote access, for example for control purposes.

IMPLEMENTATION OF A RELIABLE COUNTING, MEASURING, CONTROL AND PROTECTION CONCEPT

We work closely with the System Engineering and Grid Integration teams as part of the detailed design process. Relevant information from these areas flows into the creation and implementation of the measuring concept, the control concept or the protection concept of the PV system or the BESS and determines the individual design of the communication and control technology. They are also required later to obtain the system certificate and the declaration of conformity.

Image: greenCOM communication cabinet

ENSURING RELIABLE PLANT IT

For all operators of generation plants and battery storage systems, a reliable plant IT system with smooth command execution and uninterrupted communication processes is of particularly high importance. Operators of large generation plants, which are considered part of the critical infrastructure, must also establish an information security management system and demonstrate technical and organizational measures for IT security.

Image: Pre-commissioning to check the installed SCADA system

SCOPE OF SERVICES FOR SUPERVISORY CONTROL & DATA ACQUISITION ("SCADA")

- Project management: Interface function, test of the system control according to the grid operator's and direct marketer's specifications, commissioning of router, switch, PPC, data processing interface, measuring device, data logger and camera
- Configuration and delivery of the SCADA technology, e.g. control, monitoring and field cabinets incl. PPC, measuring device, router, switch, splice box, etc.
- On-site appointments to ensure installation quality: Pre-commissioning to check the installed SCADA technology as well as a functional test
- Provision of project-specific documentation such as communication diagram, connection diagrams, control concept description, installation document for remote control unit, unit certificate for PPC, pre-commissioning and function test report, data sheets for the SCADA technology components and installation instructions

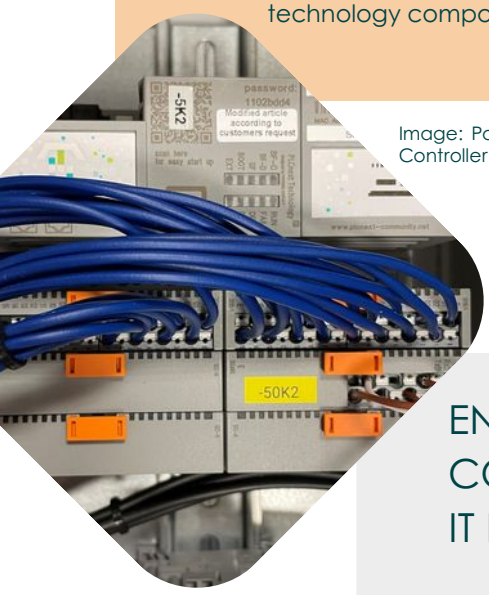
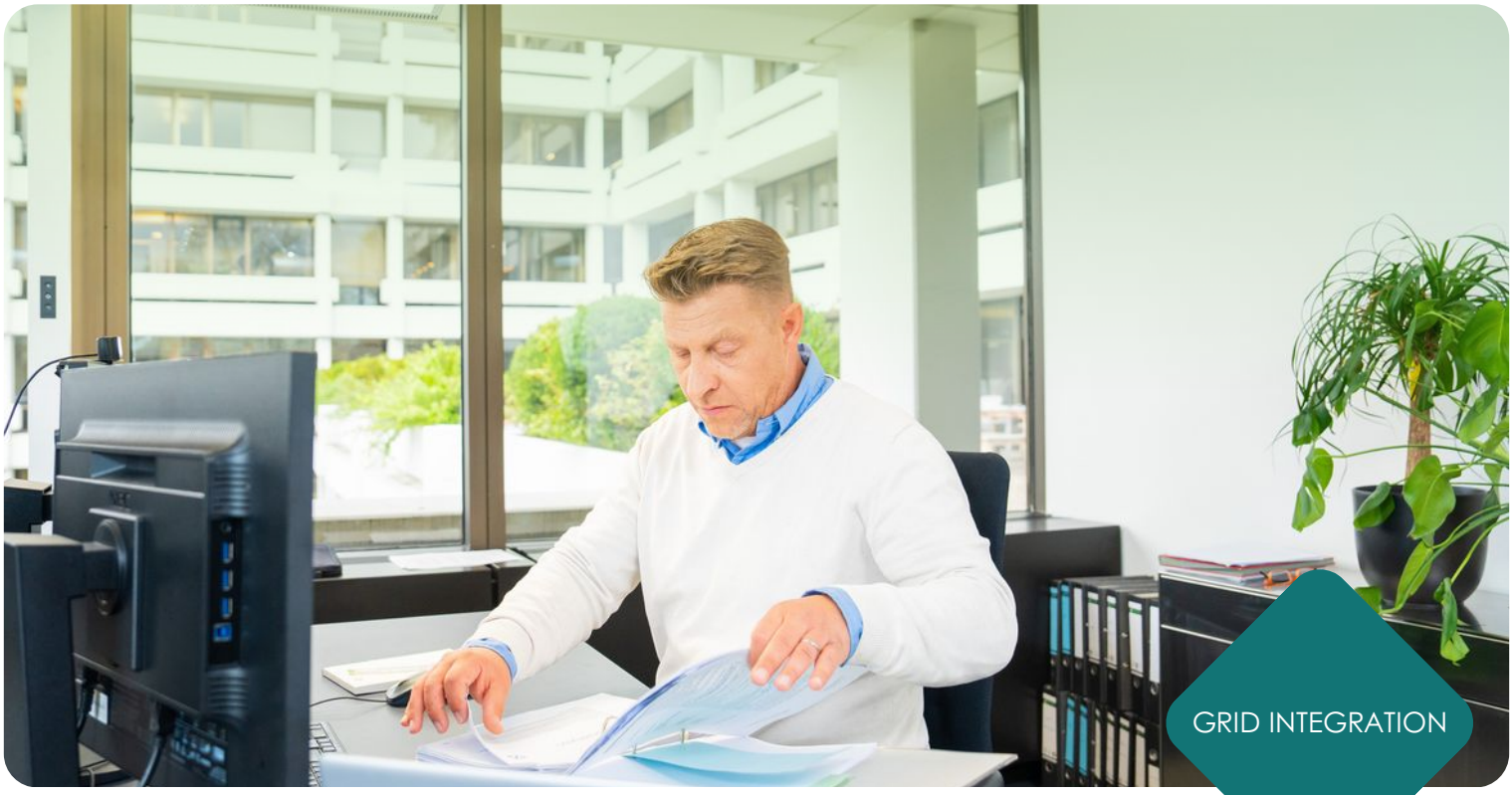


Image: Power Plant Controller (PPC)

ENSURING A RELIABLE PLANT CONTROL AND REDUCING IT RISKS

We offer a separate overview of our services in the areas of plant IT, and communication and control technology.

Take a look inside!



COORDINATION OF PLANT CERTIFICATION

We check and compile all the documents you need for the plant certifier to issue the plant certificate. We use them to provide technical proof that all requirements of the applicable grid code are met during the plant design phase.

In addition to formal application documents, this includes various data sheets and certificates, for example for the entire plant or the storage system as well as for the installed components, the protective devices and circuit breakers (plus a description of the protection concept), a single-line diagram (SLD) or the control concept for the active and reactive power.

The Grid Integration and Power Plant IT & ICS teams work closely together to create the control concept in order to meet the interdisciplinary requirements for collecting and processing the necessary information.

SCOPE OF SERVICES
COORDINATION OF PLANT CERTIFICATION

- Collection and structuring of all documents required for the plant certification
- One-time content check of the required documents
- Ongoing coordination with the certifier until all necessary documents are available

THIS MIGHT ALSO BE OF INTEREST

GRID INTEGRATION DESIGN - MEDIUM AND HIGH VOLTAGE
Page 13

We would be happy to advise you on the specific requirements for your project.

EPC TENDER MANAGEMENT (PV)

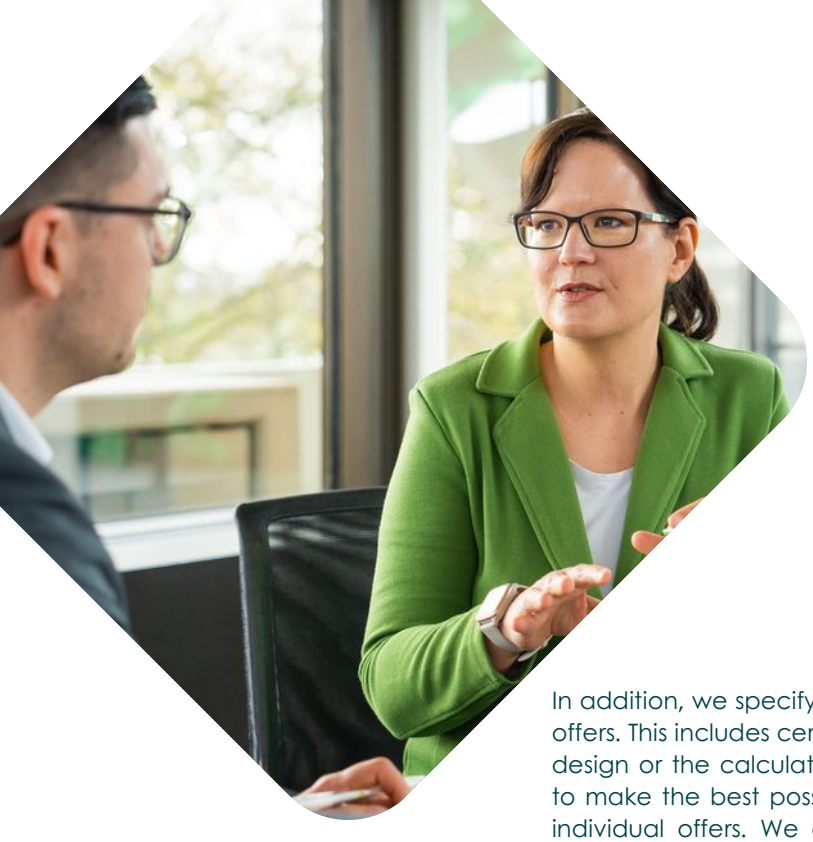
We take over the tender and EPC management for your project. To this end, we first create a technical specification as a basis and support you both in the professional tendering of EPC services and in the tendering of components and construction services. We advise you on the evaluation of incoming offers and the negotiation of contracts.

FOCUS ON QUALITY, COMPARABILITY AND FLEXIBILITY

As part of our tender management, we ensure that all project-relevant aspects and special features for the construction of your photovoltaic system are taken into account. Thanks to the specific design specifications and a structured design of the tender documents, we also ensure good comparability of the individual offers. However, we remain flexible and make sure that we leave enough room for innovative suggestions and ideas from the providers.

CREATING TRANSPARENCY AND NEGOTIATING ON EQUAL FOOTING

We always coordinate closely with the client to clarify any queries and hold discussions in the interests of the customer to achieve the best possible price and service result. Thanks to our technical expertise and a comprehensive overview of the market, we can critically evaluate the components and plans and negotiate with suppliers on equal footing.



HOW WE PROCEED

Our systematic tendering process ensures the greatest possible transparency with information on the project such as site analysis and grid capacity as well as design specifications such as the DC/AC ratio.

In addition, we specify components that must be included in the incoming offers. This includes certain information such as data sheets, explanations of design or the calculation of cable lengths. These specifications enable us to make the best possible comparison and subsequent evaluation of the individual offers. We examine aspects relating to the plant design, the expected yields and issues relating to the most efficient operational management possible. The price-performance ratio of the providers is also evaluated.

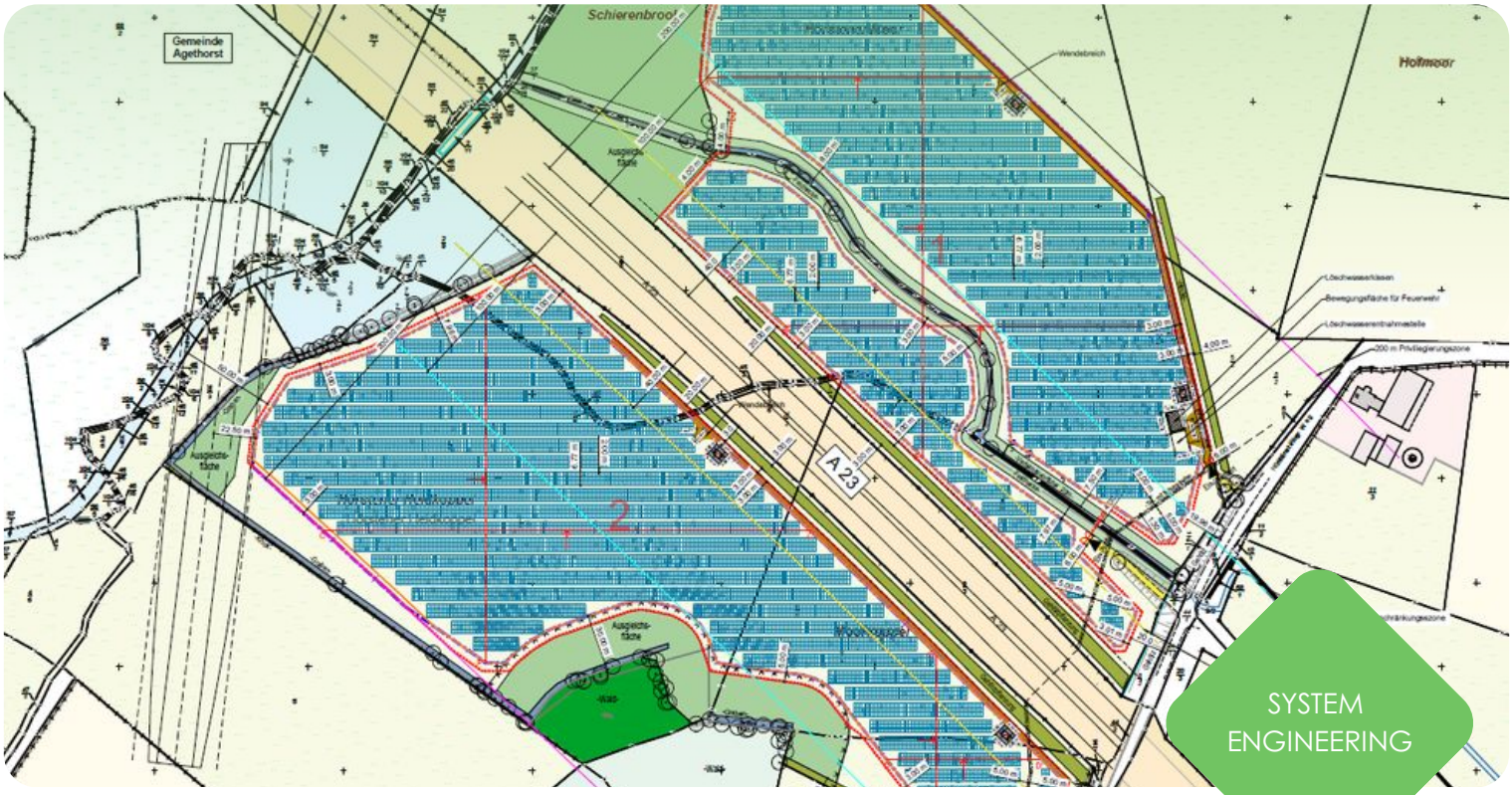
SCOPE OF SERVICES FOR EPC TENDER MANAGEMENT

- Preparation of the EPC tender: Technical specification and bill of quantities as well as preparation of the tender
  - Creation of design templates (AutoCAD & PVsyst template according to greentech standard)
  - Preparation of technical specifications for the procurement phase or as an annex to an EPC contract
    - Specification of qualifications of the EPC / the main components / for quality assurance (PV modules, construction supervision, thermography, trial operation and PR guarantee)
    - Description of construction work and construction target quality including schematic drawings
    - Specification of documentation and plant handover
  - Preparation and submission of the tender documents and initial coordination with participants
- Evaluation of two EPC bids as part of the EPC tendering process
  - Technical analysis of the offers, including the main components and the design specifications or the design and yield simulation
  - Creation of a Q&A list and one-off consultation with the providers
  - Creation of an evaluation matrix
  - Provision of the documents and presentation of the results

THIS MIGHT ALSO BE OF INTEREST

CONSTRUCTION AND ACCEPTANCE SUPERVISION
Page 25

We would be happy to advise you on the specific requirements for your project.



SYSTEM ENGINEERING

DESIGN REVIEW

Only an optimal design will later lead to efficient operation of the plant and the desired economic yield. On request, we can check an existing detailed design for plausibility and possible optimisation potential. In addition to evaluating the components with regard to normative specifications and up-to-dateness, we analyze and evaluate the DC and AC electrical design.

We also draw on experience from the operational management of plants. For example, the number and positioning of the inverters and medium-voltage stations is also checked and assessed with regard to enabling efficient maintenance and repair work in order to optimize subsequent operating costs.

SCOPE OF SERVICES FOR DESIGN REVIEW

- Evaluation of the main components with regard to normative requirements and best practice
- Analysis of the DC electrical design and mechanical design
- Evaluation of the DC-side main components or the combination, e.g. substructure, PV modules, earthing system, monitoring system and inverter assignment, DC/AC ratio, string design
- Comparison with normative specifications, manufacturer specifications, the current state of the art (best practice) and the customer's technical specifications.
- Analysis of the AC electrical design
- Evaluation of the main components on the AC side or the combination, e.g. inverter, cable sizing, transformer sizing, switchgear, earthing system (excluding substation)
- Evaluation of the SLD of the PV plant, protection concept, control concept and measurement concept
- Comparison with normative specifications of the local grid code and with the customer's technical specifications

SYSTEM ENGINEERING

CONSTRUCTION SUPERVISION AND FINAL ACCEPTANCE

By providing technical support during the construction phase of your PV or BESS project and monitoring the construction work in accordance with design and standards, we ensure the desired quality of execution and conformity with the planning documents.

Continuous monitoring of construction progress makes it possible to identify and eliminate any defects at an early stage and ensures that overall operations on the construction site run as smoothly as possible.

Among other things, we use drone technology to maintain a comprehensive overview of the entire construction site and to be able to monitor and check the construction progress from different angles and perspectives during the entire construction process.

We also accompany the acceptance of the project and carry out visual inspections of the main mechanical and electrical components. If there are already known defects from the construction supervision phase, these are rechecked. We also check for complete documentation in accordance with the DIN standard.

It is also possible to commission only a single appointment for the supervision of the building acceptance. Please do not hesitate to contact us.

The construction of a substation to connect the plant to the high-voltage grid is coordinated and supported by the grid specialists from the Grid Integration team at greentech. You can find out more on page 27.

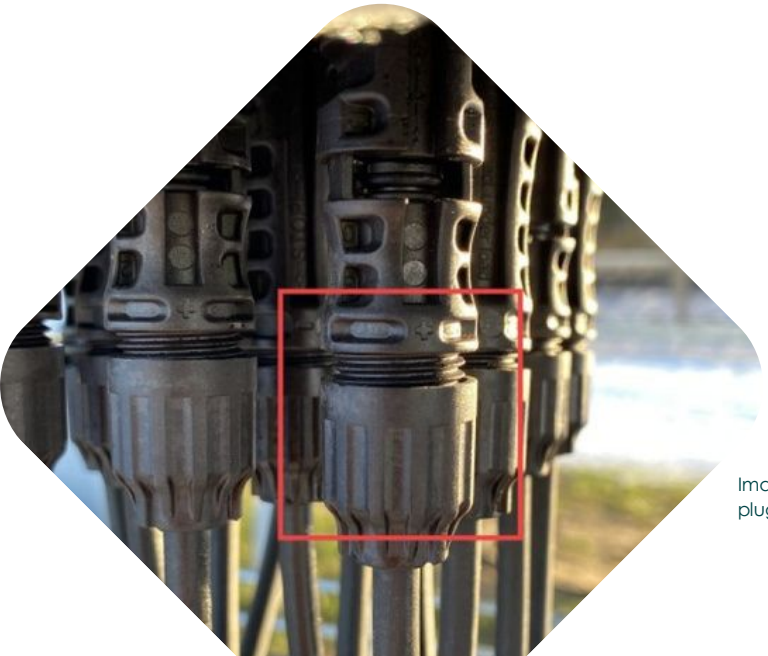


Image: poorly fitted DC plug on the inverter

SCOPE OF SERVICES
CONSTRUCTION SUPERVISION AND FINAL ACCEPTANCE

- Technical support on site during the construction phase and during acceptance
  - Randomised monitoring of execution according to plans and standards, 4 on-site appointments e.g. underground cable construction, sample table, station connection, acceptance support
  - Setting priorities for technical control in coordination with the customer based on the construction schedule before each site inspection
  - Accompanying the acceptance, randomised visual inspection of the final mechanical and electrical design of the main components
  - Review of the processing of known defects from previous on-site appointments
  - Documentation assessment according to checklist in accordance with DIN EN 62446 and best practice recommendation
  - Report and presentation of the results
- Technical advice within the scope of construction and acceptance support at cost, e.g.
  - exchange with the parties (customer, EPC, technical advisor) on technically relevant topics
  - Review and evaluation of technical documents during the construction phase
  - Tracking of punch list as part of construction and acceptance monitoring

THIS MIGHT ALSO BE OF INTEREST

COMMISSIONING DECLARATION
page 31

PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION FOR HV SUBSTATION
Seite 27

EPC TENDER MANAGEMENT
page 22

We would be happy to advise you on the specific requirements for your project.

GRID INTEGRATION

PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION FOR HV SUBSTATION

Larger photovoltaic projects require a substation as a transfer station for connection to the high-voltage grid. In order to successfully master this project, various parties must coordinate and work closely together, including the PV/BESS installer, the substation installer, the grid operator and possible other parties, for example from the field of control and protection technology or operational management.

As a grid specialist, greentech takes on full project management for the construction and serves as the coordination lead and point of contact for all parties involved.

In addition, as owner's engineer, we review the detailed design and technical documents and continuously monitor and check the construction progress during the construction phase until handover to the operator. This not only ensures that the desired quality of execution is achieved in the best possible way, but also allows potential defects to be identified at an early stage and the necessary corrective measures to be initiated promptly.

We also plan and supply the required SCADA systems for the substation on the basis of the detailed design. You can find more on this topic on page 19.

SCOPE OF SERVICES FOR PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION FOR HV SUBSTATION

- Support during the construction phase
  - Check of the substation detailed design, comparison with local grid code and substation specification
  - Review of additional technical documents related to the substation (e.g. control concept, evaluation report for plant certification, substation operation and maintenance agreement)
  - Review of the construction progress based on the valid project schedule
    - Construction supervision with four on-site appointments
    - Appointment with substation installer before start of construction
    - Delivery of buildings, foundations, large components
    - Delivery of high-voltage transformer
    - Commissioning
  - Professional support for the technical handover from the substation installer to the operator
  - Documentation and review of the progress of known defects from previous on-site appointments
- Project management during the construction phase
  - Technical project management and contact person for grid operators, substation installers and PV plant installers, substation operating managers, PV plant operating managers
  - Implementation of regular project coordination and coordination of relevant project partici-pants

THIS MIGHT ALSO BE OF INTEREST

CONSTRUCTION AND ACCEPTANCE SUPERVISION
page 25

DETAILED DESIGN - OVERVIEW
page 16

We would be happy to advise you on the specific requirements for your project.

TECHNICAL DUE DILIGENCE

On request, we can assess both the technical feasibility of the planned PV or battery storage system and the construction work shortly before commissioning or after a longer operating phase. To do this, we take a close look at all available plans and information. If the TDD reveals major weaknesses in the design or significant potential for improvement that could have a relevant impact on the expected future yield and thus the success of the project, we will point these out. The scope of a TDD can vary greatly and is offered individually according to requirements and customer wishes.

POSSIBLE COMPONENTS OF TECHNICAL DUE DILIGENCE

TECHNICAL REVIEW

A technical review is carried out to ensure compliance with official requirements and a check of the relevant documents, including the development plan and the status of the grid connection.

REVIEW OF DESIGN

We check the plant design and yield assumptions from a yield simulation / yield report for consistency. For this purpose, the PV plant / BESS design, including the selected construction components, is transferred into our software, evaluated, and compared with the existing yield report.

ELECTRICAL DESIGN

In this context, we check the electrical design, including the selected grid connection components such as transformers, route cables and measuring, protection and control technology. The concept of the system IT and the secure connection of the system to the relevant monitoring, marketing and control units are also closely assessed. In addition, we determine whether all technical standards and specifications relevant to the project have been taken into account in the design.

INSPECTION OF INSTALLATION QUALITY

For existing PV installations, we conduct an in-depth on-site assessment of the actual system. In contrast to the preliminary design-phase, this includes a review of the real-world plant design, the installed components, the DC and AC implementation, and the overall quality of workmanship. During the construction phase, special attention is paid to verifying that the implementation is in line with the legally compliant and complete as-built technical documentation. During subsequent operation, we assess whether the system remains consistent with the current documentation.

In this context, we visually inspect all structural components and look for structural defects and, in the case of older systems, for signs of degradation or weather-related damage. A thermographic examination can also be used on request or if required. The monitoring and control system (SCADA), including the installed control technology, is also analyzed and evaluated.

SCOPE OF SERVICES
TECHNICAL DUE DILIGENCE

As the scope of a technical due diligence can vary greatly, we will be happy to provide you with an individual offer based on your specific requirements.

THIS MIGHT ALSO BE OF INTEREST

THERMOGRAPHY
page 32

YIELD ASSESSMENT
page 11

SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
page 19

We would be happy to advise you on the specific requirements for your project.

GRID INTEGRATION

COMMISSIONING DECLARATION

On the basis of the plant certification, the grid operator only issues a provisional operating permit for a planned PV plant or a BESS. However, it only authorizes the commissioning and temporary operation of the project. The actual status of the completed project is then checked and documented accordingly in a commissioning declaration, including the selected control, measurement and protection concept for the system. Only then does the certifier issue a declaration of conformity and thus confirms to the grid operator that the system has been designed in accordance with the specified grid code. On this basis, the grid operator will issue the final operating license for the system.

We compile all the documents required for the commissioning declaration in accordance with the applicable grid code and take care of the correspondence with all project participants in this process.

SCOPE OF SERVICE FOR PREPARATION OF COMMISSIONING DECLARATION

- Compilation of all required documents according to the applicable grid code
- One-time content check of the required documents
- Correspondence with project participants
- One-off test on site

THIS MIGHT ALSO BE OF INTEREST

COORDINATION OF PLANT CERTIFICATION
page 21

CONSTRUCTION AND ACCEPTANCE SUPERVISION
page 25

We would be happy to advise you on the specific requirements for your project.

SYSTEM ENGINEERING

THERMOGRAPHIC INSPECTION

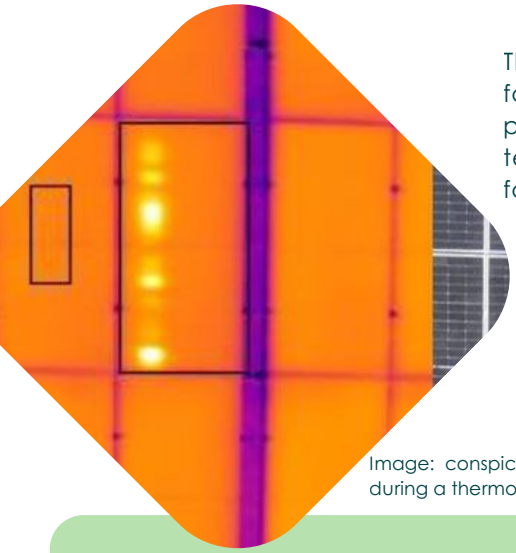


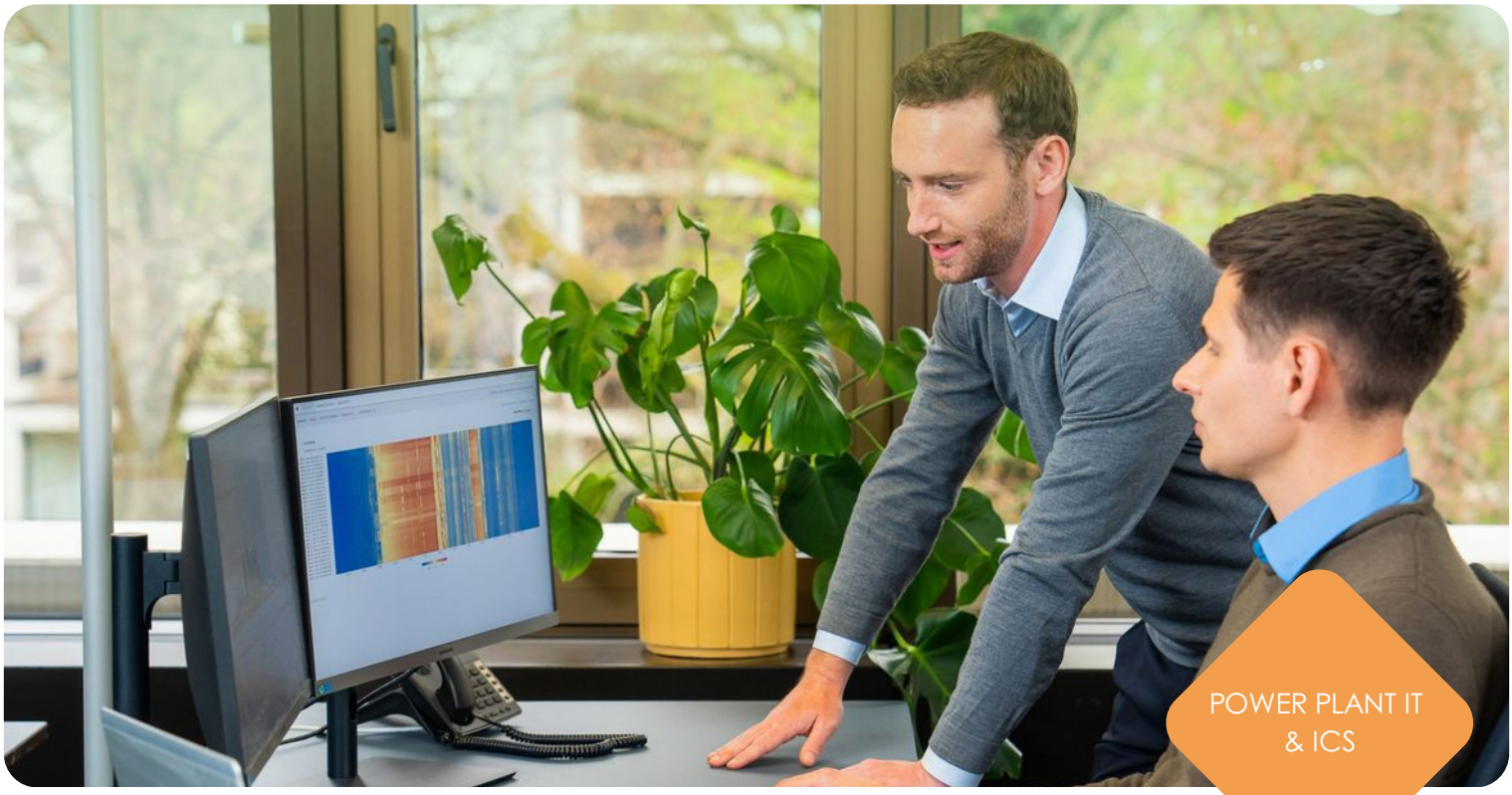
Image: conspicuous module cell identified during a thermographic examination

The thermographic inspection of PV systems using infrared imaging reveals faults that are barely visible and technically very difficult to measure. For PV plants, this inspection technology provides valuable information about the technical condition of the system, as well as performance and safety-related faults.

For photovoltaic systems, we offer a flexible full-service package that can be put together on a modular basis depending on requirements and the technical specifications of the PV system. We adhere strictly to the relevant standards in order to achieve both reliable results and to create a foundation for subsequent warranty processes or the necessary repairs.

SCOPE OF SERVICES FOR THERMOGRAPHIC INSPECTION

- Thermographic inspection after commissioning
  - Thermographic image of the PV module array
  - Comprehensive report with the anomalies, module-specific presentation of the anomalies
  - Tabular representation with all thermal anomalies of the PV module array
  - Analysis and evaluation of the thermal anomalies, assessment of the economic and technical effects
  - Documentation and presentation of the results
- Technical advice in the context of thermography
  - Exchange with parties such as the customer, the EPC, a technical advisor etc. on technically relevant topics
  - Review and evaluation of technical documents such as technical adjustments after thermography
  - Tracking of punch list as part of a special inspection



POWER PLANT IT & ICS

IT SERVICES AND CONSULTING

To ensure safe and reliable operation of your power plant or BESS, we recommend regular data backups and firmware updates of the network components. These include routers, data loggers, industrial PCs and cameras.

REGULAR DATA BACKUP FOR RAPID RECONFIGURATION

Especially in the event of a total failure, for example as a result of overvoltage or ageing, data backup and corresponding security backups play an important role. They make it possible to minimize downtimes after an incident by quickly reconfiguring the components. The system quickly becomes operational again and can also be regulated.

This also reduces potential financial losses due to claims by the direct marketer or the grid operator.

FIRMWARE AND SOFTWARE UPDATES FOR MAXIMUM IT SECURITY

Outdated firmware versions or missing updates of software applications with known security vulnerabilities can give cyber criminals access to power plant communication. Data manipulation or the blocking of the system to demand ransom or even a power plant failure can be the result.

Regular updates ensure that security gaps from old versions are closed as quickly as possible.

IT SECURITY CHECK AND CONSULTING

As part of a security check, we are happy to analyze the current status of your power plant IT and provide you with a detailed overview of the current state of the communication infrastructure of your plant / plants.

Among other things, the grid system is clearly displayed in a single-line diagram including the names and locations of the end devices used. This reveals weaknesses and risks in the system, which should be rectified as quickly as possible in order to provide the required level of IT security for system communication.

FURTHER INFORMATION CAN ALSO BE FOUND HERE:

REPOWERING

Repowering can be a viable solution not only in cases of inverter or module defects. From an economic perspective, modernizing a system by replacing inverters or modules can also be worthwhile. Technological advancements, improved efficiency, lower costs, and new warranty conditions make replacing components or repowering the system an attractive option—even when no specific defects are present. Depending on the age of the system, repowering measures can significantly increase a project's yield and help ensure its long-term profitability. Older systems in particular still benefit from relatively high feed-in tariffs, which can help offset the investment costs of repowering. This approach optimally prepares the system for continued operation once the subsidies expire.

With regard to scope, a repowering is equivalent to a detailed design, as plant design, grid integration, and the SCADA technology must be redefined for implementation, even if parts of the existing installation are reused or continued.

We would be happy to advise you on whether repowering makes sense for your system and to what extent it can be implemented profitably.

SCOPE OF SERVICES FOR REPOWERING:

DETAILED DESIGN - OVERVIEW
page 16

DC ELECTRICAL DESIGN
page 17

AC ELECTRICAL DESIGN ACCRORDING TO GRID CODE
page 18

SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
page 19

PLEASE NOTE

This document is for informational purposes only and does not constitute a binding offer or an invitation to make an offer. All information contained in this document is based on the status as of April 2025.

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