Technical chapters explain decision making and design control. They are not a universal implementation scheme. Each project must respect the current manuals of specific devices, local regulations, distributor conditions and the scope of authorizations of the persons involved. Critical electrical and roofing work belongs to qualified workers.

What will you have after graduation

- Defined service and the customer to whom you will offer it.
- List of missing authorizations, partners and equipment.
- Procedure from receipt of inquiry to service and recommendation.
- Custom sample of offer, calculation and assembly control.
- Model order in progress and plan for the first 90 days.

Reserve approximately 12 to 20 hours to study and complete the assignments. It is a study estimate, not a deadline for obtaining a qualification or establishing a successful company. Prepare the first realizations with professional supervision according to your actual practice.

Study part and worksheets form one unit. Start with the course map, continue with the lessons and use the attachments and final forms for a specific order.

Always compare the technical examples with the current documentation of the specific product and the requirements valid at the place of implementation.

Course map

Company and customer

01 What it means to run a solar PV company
02 Define your services and the scope of each job
03 Qualifications and specialist partners
04 A crew that works safely
05 Suppliers and standard system configurations
06 The inquiry and first conversation
07 Site survey and design brief

Solution proposal

08 Generation and real energy demand
09 Estimate generation with PVGIS
10 Inverter selection and model verification
11 Design PV strings
12 Shading and roof layout
13 Battery storage and its role
14 Backup power for the building
15 Water heating and Ohmpilot
16 Heating support and EV charging
17 Smart Meter and communications
18 Protection and earthing
19 Cables, connectors and distribution boards

Order and operation

20 Pricing that sustains the business
21 A proposal the customer understands
22 Materials and installation preparation
23 Safe installation workflow

Task

Complete worksheet B on the model query. Assign a status to the order: suitable for inspection, we need data or out of our scope. Every inquiry received should receive an answer, even if you do not accept the order.

When there are many inquiries, administrative help can be more beneficial than another person on the roof. Decide according to the number of pending requests and the value of lost orders.

07 Site survey and design brief

Inspection is where preliminary interest turns into a technical assignment. Don't just leave with a photo of the roof. You need to know where the cables will go, where the technology will be, what needs to be adjusted and which assumptions still need to be confirmed by someone.

On the roof, record the dimensions, orientations, slopes, covering, its condition, obstacles and shading objects. The assessment of load-bearing capacity, anchoring and the effects of wind and snow must be based on the foundations of the building and the assembly system. If in doubt, call in a structural engineer or a roofer. The layout of the panels should not be drawn over service approaches or the necessary distances.

In the object, record the connection, main fuse, system, switchboards and measurement location. Take the intended stop in advance. Examine the location of the inverter and battery from the point of view of the environment, access, service distances and fire concept. The battery is not placed only where there is free space.

Routes and communication

Go through the entire DC, AC and data line route. Check penetrations, sharp edges, exposure to water and sun and the possibility of mechanical protection. Verify the quality of the local network, but do not promise the customer a wireless solution without checking compatibility.

Confirm with the customer the visible routes of the slats and the position of the devices. A short written agreement can prevent a dispute about the appearance of the finished work.

Task

Complete worksheet C. Divide the findings into confirmed, estimated and pending verification. Assign a person and a term to each open question. Do not base the final price on an unrecorded assumption about the condition of the switchboard or roof.

Inspection that builds trust

Come to the meeting prepared both technically and commercially. The customer does not have to understand photovoltaics yet, but he will quickly recognize if you respect his time and can explain your own solution.

The day before the inspection

Call and confirm the address, time and approximate length of the visit. Ask for access to the switchboard, technology location and available consumption data. Verify that the person making the decision on the investment will be present. Call in advance if you're going to be late.

"Hello, we have agreed on a visit tomorrow at 4:00 p.m. Is this time acceptable to you? I will bring samples of similar implementations and we will go over what the system is supposed to provide for you. If you have available the annual consumption or its progress, please prepare them."

What to take

Prepare current prospectuses and data sheets of the offered components. On a charged tablet, have a short portfolio of your own realizations, photos of assembly details and a sample of handover documentation. Add performance, system type and solved problem to the reference. If you do not yet have your own realizations, use the clearly marked documents of the manufacturer; do not pass off someone else's building as your own.

Show function on real data

With the consent of the owner and through an authorized account, open a suitable reference installation in Solar.web. Hide name, address and other personal data. It explains current production, house consumption, flow to or from the battery and

consumption or supply to the network. Water heating and car charging show if the given system actually measures and displays them.

Explain the difference between the instantaneous power in kW and the energy in kWh for the selected period. One sunny moment does not represent a whole year's savings. Also prepare approved anonymized pictures in case of weak internet and mark their date; do not present them as a live broadcast.

Termination of meeting

Summarize the customer's needs in his own words, confirm the missing documents and agree on the date of the offer. The customer should know what will follow and who will contact him.

Photos and order after inspection

Before taking photos, explain the purpose and ask for permission: "Can I take photos of switchboards, electricity meter, roof, house exterior and the place of future technology? We will use the photos to prepare your design and implementation." Consent to the contract documentation is not consent to publication on the website.

What to record

Take overview and necessary detailed shots of the main and affected switchboards, electricity meter location, roof surfaces, obstacles, possible routes and transfer points. Capture space for inverter, battery and other devices including access and surroundings. The switchboard is opened only by an authorized person using a safe procedure; do not break the seals or enter the dangerous area for the sake of photography.

Add photos by measuring the dimensions and noting the orientation. The image alone does not confirm the load-bearing capacity of the roof, the condition of hidden structures or safe distances. Do not record personal things and data that you do not need.

Do not leave without taking another step

Agree on a realistic delivery date for the quotation. For example, within five working days from the delivery of the last necessary data, if your capacity allows it. Leave a business card with your name, phone and e-mail. If you miss the deadline, call before it expires and arrange a new one.

Customer component

After returning, create a folder with an internal order number. Use the subfolders Contact and entry, Inspection and photos, Proposal, Offer and contract, Permits, Implementation, Delivery and Service. Enter the address, contact, annual consumption in kWh, available daily profile, required functions, budget and next date.

Distinguish whether the customer prefers a lower initial investment or a broader solution. Turn his idea into specific priorities; the size of the system must still be based on technical conditions. Name the photos clearly, back them up and make them available only to the necessary people. Do not store passwords for customer accounts in a folder.

08 Generation and real energy demand

A good power plant solves when the customer needs energy. A house can have a high annual production and still consume electricity significantly in the morning and evening. Therefore, the level of self-sufficiency cannot be calculated from the annual total.

Distinguish between own consumption of production and coverage of consumption of the house. If the power plant produces 10,000 kWh and the house uses 3,000 kWh of it, the own production consumption is 30%. If the house consumes a total of 6,000 kWh, photovoltaics covered 50% of its consumption. This is a model example without battery losses, not a forecast of a specific implementation.

In practice, I have also seen customers with very low consumption coverage, approximately 9%. Such a result must first be verified: the correctness of the measurement, the monitored period and the daily routine. It may not mean a faulty inverter. It can point out a discrepancy between production and consumption.