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GRID CONNECTION DESPITE THE 5% RULE

HOW FLEXIBILITY AND DIALOGUE CAN SAVE PV PROJECTS

In the first part of our series, we described how the 5 % rule for rapid voltage changes (schnelle Spannungsänderungen) can become a stumbling block for projects. A recent case now demonstrates that there is another way: with technical clarity, pragmatic decisions, and cooperative communication, solutions can be found – even before an official amendment to the standard.

When Planning Meets Reality

For a 3 MWp PV self-consumption system in Bavaria, commissioning was already prepared, but the start was delayed: the calculated rapid voltage change at the transformer station (Trafostation) exceeded the 5 % limit defined in VDE-AR-N 4110. The result: the provisional operating permit (vorläufige Betriebserlaubnis) was denied – causing an economic loss of approximately €1,000 per day for the operator, with an uncertain duration.

The project team from Kumandra Energy immediately initiated a dialogue with the grid operator (Netzbetreiber). The goal was clear: to find a solution that preserves grid stability while enabling commissioning.

Technical Clarity and Normative Flexibility

The core of the discussion revolved around the interpretation of VDE-AR-N 4110 and how operational states (Betriebszustände) should be applied to the 5 % limitation. The grid operator insisted on adhering to the current

standard and its technical connection rules (TAB – Technische Anschlussbedingungen), but showed willingness to consider the planned 10 % limit for non-operational switching (nicht betriebsbedingte Schaltungen) already before the official amendment in 2026.

This openness to dialogue and flexibility was decisive: it enabled a pragmatic solution that allowed the project to proceed without compromising operational safety.

Pragmatic Upgrades Instead of Project Halts

The project team proposed retrofitting an inrush current limiter (Einschaltstrombegrenzer). The grid operator agreed, making it a condition for granting the provisional operating permit. Simultaneously, they recommended the use of such measures for values between 5 % and 10 %.

Key Takeaways from the Case

This example illustrates how technical challenges in grid connection procedures can be resolved constructively. Four points stand out:

- **Early Coordination:** Prompt dialogue and quick decision-making by both parties were fundamental.
- **Forward-Looking Application of Future Rules:** Planned changes to standards can be applied early in exceptional cases.
- **Transparent Communication:** Open, respectful exchange built trust and led to solutions.
- **Economic Realities in Focus:** The daily financial loss was taken seriously and incorporated into the decision-making process.

Conclusion: Grid Safety and Project Success Can Go Hand in Hand

Grid operators face the huge task of expanding the network without compromising stability. Planning security – and thus the energy transition – can suffer if these challenges are not managed proactively.

Our case offers encouragement: with clear rules, binding communication, and mutual understanding, solutions can be found that ensure safety while keeping projects on track.

Note: *This article reflects our practical experience and is not a substitute for legal advice.*

Feel free to contact us if you're planning a project—we'll support you with hands-on expertise.

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