

<div class="df_qntext">What are the common voltage problems caused by high PV penetrations?

Voltage regulation The common voltage problems that occur due to high PV penetrations in the power grids, namely voltage fluctuations, voltage unbalance and voltage magnitude (over voltage/under voltage) issues are discussed in the first part of this review paper (Gandhi et al., 2020a).

<div class="df_qntext">Does high PV penetration affect the power system?

Numerous research works have analyzed the impacts of solar PV on the grid and highlighted various aspects to be the limiting factors for PV penetration. This two-part review paper assesses the overall power system impacts of high PV penetration and the potential solutions for mitigating these impacts.

<div class="df_qntext">Are there common faults with solar photovoltaic (PV) systems?

With the widespread adoption of solar photovoltaic (PV) systems, ensuring their efficient and stable operation is essential. However, during long-term operation, PV systems may encounter common faults.

<div class="df_qntext">How to solve voltage unbalance problems caused by PV integration?

The stochastic analysis conducted by Shahnia et al. (2010) indicated that the voltage unbalance problems caused by the PV integration in the distribution feeders can be solved by increasing the cross-sectional area of the feeder. However, this is a very expensive solution and should be sought as a last resort for improving the voltage regulation.

<div class="df_qntext">Can cloud cover affect PV power fluctuations?

Short-term PV fluctuations that occur due to scenarios such as cloud cover can lead to undesirable voltage fluctuations in the distribution feeders (Woyte et al., 2006), whereas long-term PV power variations can generally be handled by recent forecasting methods.

<div class="df_qntext">How does a tap transformer affect the life of a solar PV system?

Due to the intermittent nature of solar PV, for systems with high PV penetration, the voltage can rapidly increase and decrease. As a result, the tap transformers would need to increase its operation time to always keep the voltage within the required range. This will then affect the lifetime of the transformer.

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