**The impact of setback regulations on PV deployment strategies in Gyeonggi province, South Korea**

**Highlights**

This study evaluates the impact of setback regulations on photovoltaic (PV) deployment potential at the individual plot level, differentiated by nine land-use types.

Real-world PV installation data were used to derive land-use-specific area, density, and capacity factors, enhancing the accuracy of deployment potential estimation.

Three deployment strategies—price-based, quantity-based, and full deployment—were assessed under different setback regulation scenarios, considering trade-offs between cost-efficiency and expansion goals.

Findings highlight that while removing setback regulations increases deployment potential, it also reduces land-use and capacity efficiency, necessitating land-type-specific policy approaches.