

Creating Sustainable Cities: Opinion Piece - October 2025

Unlocking Local Solar Power: How P415 and P441 could reshape the UK's rooftop energy landscape.

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Unlocking Local Solar Power:

Two technical modifications to the UK's Balancing and Settlement Code - P415 and P441 - could quietly transform how local energy systems operate in the UK. They won't grab headlines like offshore wind auctions or gigafactories, but their impact on the local energy economy could be hugely significant. Together, these rule changes open the door to overbuilding rooftop solar on public and community buildings and selling that clean electricity directly to nearby consumers. The move could potentially make local net zero delivery cheaper, faster and fairer.

What are P415 and P441?

The Balancing and Settlement Code (BSC) governs how electricity is measured, settled and paid for across the national system. It's the plumbing that ensures every half-hour of import and export is correctly attributed. Historically, these rules were designed around a one-way model — centralised generation selling to licensed suppliers, who in turn sell to end users.

But the energy system has changed. Small-scale solar, batteries, flexible loads and community energy schemes now sit at the grid edge. The challenge is that the settlement framework has struggled to keep up, locking local actors into complex supplier arrangements even when power is physically generated and consumed within the same neighbourhood.

- **Modification P415** allows Virtual Lead Parties (VLPs) — essentially independent aggregators — to trade flexible generation and demand directly in the wholesale market. This means the actions of distributed assets can be accounted for separately from the customer's retail supplier relationship.
- **Modification P441** clarifies the treatment of Complex Sites under the BSC, defining how imports and exports across a single boundary can be "netted off." In practice, it provides a formal mechanism for local energy schemes to share generation and consumption within a campus or group of connected buildings.

Together, these changes form the backbone of a more open, decentralised electricity market — one that recognises and rewards local generation and flexibility.

Why this matters...locally

Local authorities and community energy groups have long been frustrated by the economics of rooftop solar. Even with good roofspace and strong local demand, the rules have forced them to size systems around on-site consumption to avoid spilling excess power into the grid at low export prices. Selling surplus electricity to neighbours — schools, social housing blocks, or SMEs — has been administratively prohibitive, and quite frankly, not worth the effort.





P415 and P441, in theory, make it technically and legally possible to:

- Install larger PV systems on suitable roofs (e.g., leisure centres, schools, depots) without being limited by that building's own demand profile.
- Net off exports and imports across a defined site or building cluster, enabling shared generation benefits among multiple tenants or consumers.
- Work with an aggregator or VLP to monetise flexibility and export revenues directly in the wholesale market, without needing every participating consumer to switch supplier.

This effectively creates a new layer in the energy market — one where local energy can be coordinated and valued in settlement without forcing customers into complex supply arrangements. The policy shift is subtle but could become truly transformative.

The opportunity: overbuilding solar for local sale

Imagine a community building or a school with 2 MW of rooftop PV and battery storage. Historically, half that capacity would have been uneconomic: on-site demand might only use 40–50% of generation, and export rates rarely justify overbuild. Under the new framework, however, an aggregator can dispatch surplus generation into the wholesale market when prices are high, or use settlement netting to offset imports by nearby users within the complex.

For **public estates**, this opens three new value streams:

1. **Wholesale market participation** - aggregated PV output can earn spot or balancing revenues.
2. **Local consumption retention** - where site classes allow, exports can be netted against nearby loads, retaining value locally.
3. **Community participation** - local residents and small businesses can share in generation value through tariff credits or local supply partnerships.

For community energy groups, the appeal is similar: the ability to go beyond "behind-the-meter" and begin operating as local energy market participants, backed by regulatory recognition, whilst presenting a means to make larger solar projects economically viable.

What could this mean in practice?

If implemented well, these changes could finally make community-scale solar financially self-sustaining. Larger rooftops could host multi-hundred-kilowatt systems designed for optimal yield rather than constrained to a single building's needs. Local authorities could partner with VLPs to capture both local and market revenues, reinvesting surpluses into energy efficiency or fuel poverty initiatives. It could be a key driver to realising local net zero targets and energising whole communities to be actively involved and benefit from the transition.

However, success isn't a guarantee...



The approach depends on a few technical and institutional enablers:

- Complex site eligibility under P441 must be secured — not every estate will qualify, and site boundary definitions matter.
- Half-hourly metering and accurate settlement data are essential.
- Aggregator partnerships must be commercially sound, with clear revenue-sharing and consumer protection.
- Distribution network constraints may still limit export potential, requiring close collaboration with the local DNO.

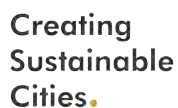
In other words, P415 and P441 create the regulatory space, but delivery will hinge on project design, data quality and collaboration.

A time for cautious optimism?

The big question is 'will this approach work?' In principle, yes. Several industry participants are already trialling VLP-based models under Elexon's frameworks. The remaining barriers are less about regulation and more about coordination: local authorities, aggregators, and DNOs need shared templates for "local complex sites," including standardised metering, billing and governance.

If these can be agreed, England could see a new generation of local solar markets — schemes that overbuild PV on public or community roofs, share power locally, and monetise flexibility nationally. This would bridge the gap between national decarbonisation targets and community-level delivery, allowing councils and community groups to retain more value from the clean energy they produce. It is an 'incentivisor' that local net zero action has desperately needed.

The message is simple: these code changes don't just tweak market rules. Instead, they unlock a structural pathway to local energy resilience. For cities and towns that are serious about net zero, the time to engage with P415 and P441 is now. Those who act early will define the models that others follow and reap the benefits.



An international award winning, non-profit, sustainability consultancy, which was established in 2008 to instigate long-term, sustainable change for our planet...locally. Through the launch of its Creating Sustainable Cities initiative in 2018, Ibex Earth has worked with partners from the public, private, third and academic sectors to secure in excess of £56 million to deliver 'sustainable city' projects. It is this work that has led to the realisation that if net zero and climate targets are to be met, then we must build the capabilities, skills and resources across local authorities to access and help mobilise private capital.



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