

Modernising Statutory Voltage Limits

Mark Dunk

Head of Engineering, ENA

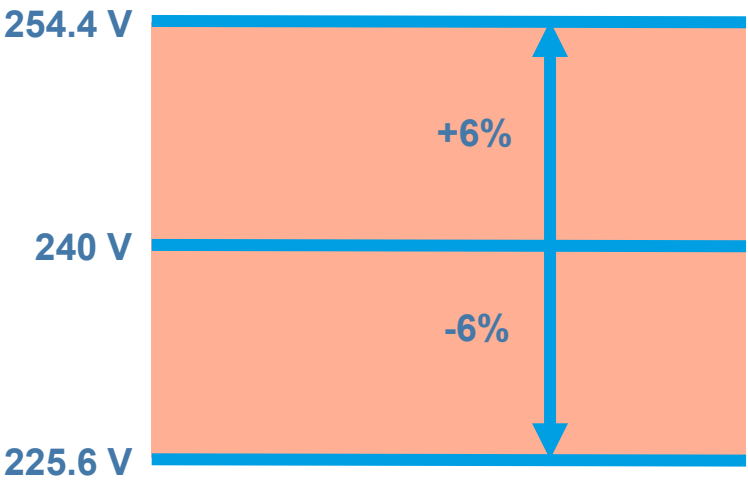
Mark Callum

Chair of ENA 'statutory voltage limits working group'
Smart Grid Development Manager, Northern Powergrid

Energy Innovation Summit | 05 Nov 25

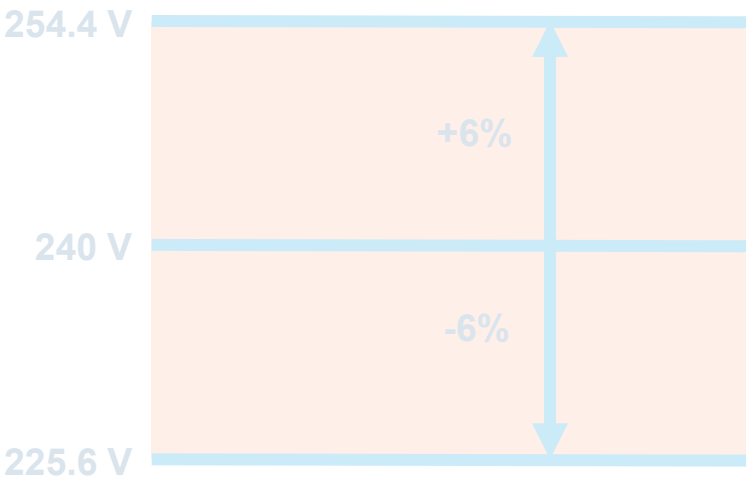


UK - low voltage range

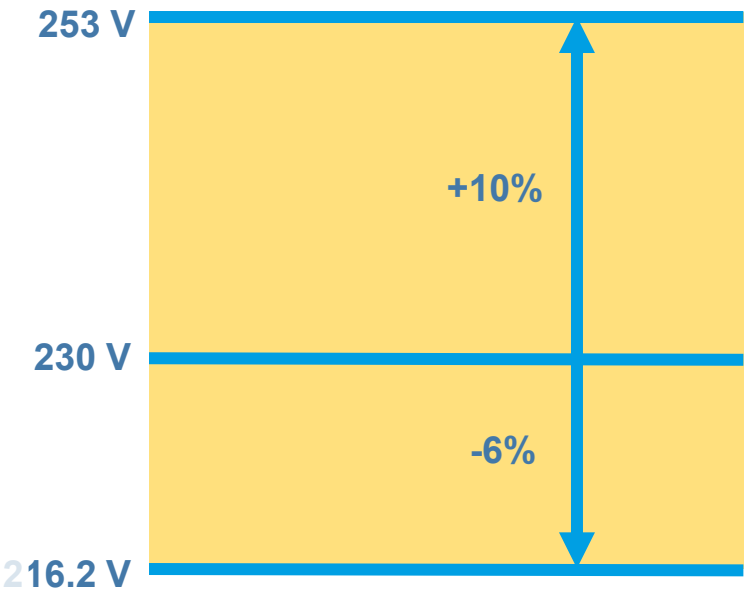


Pre-1995

UK - low voltage range

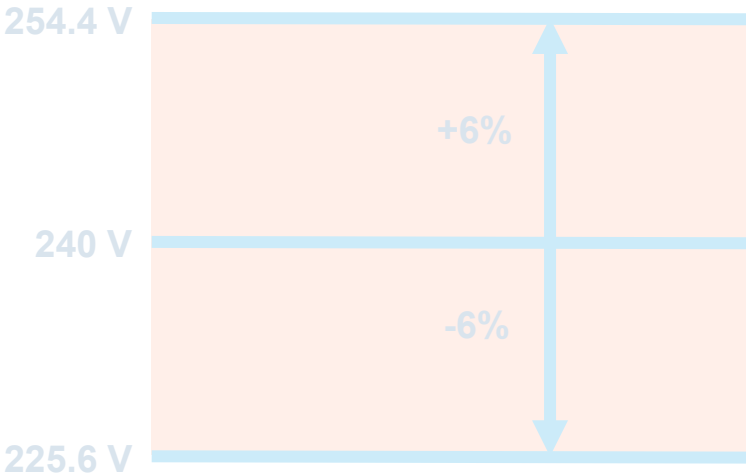


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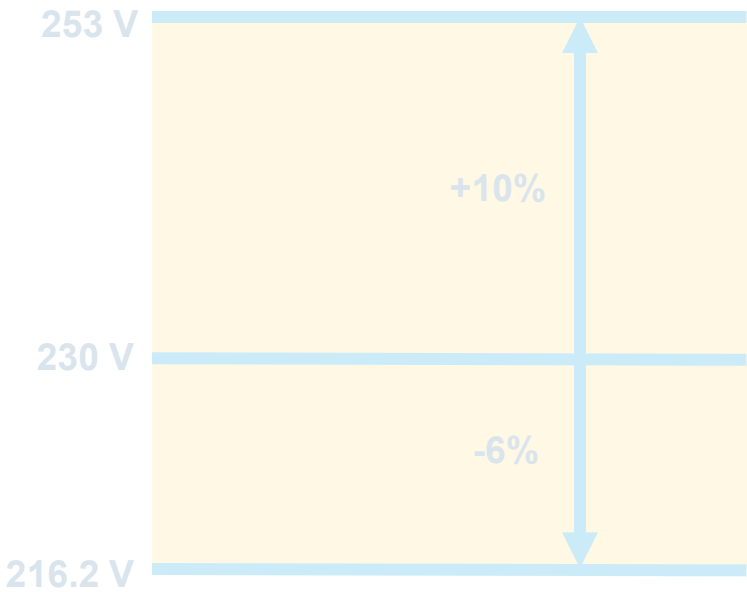


1995 to today

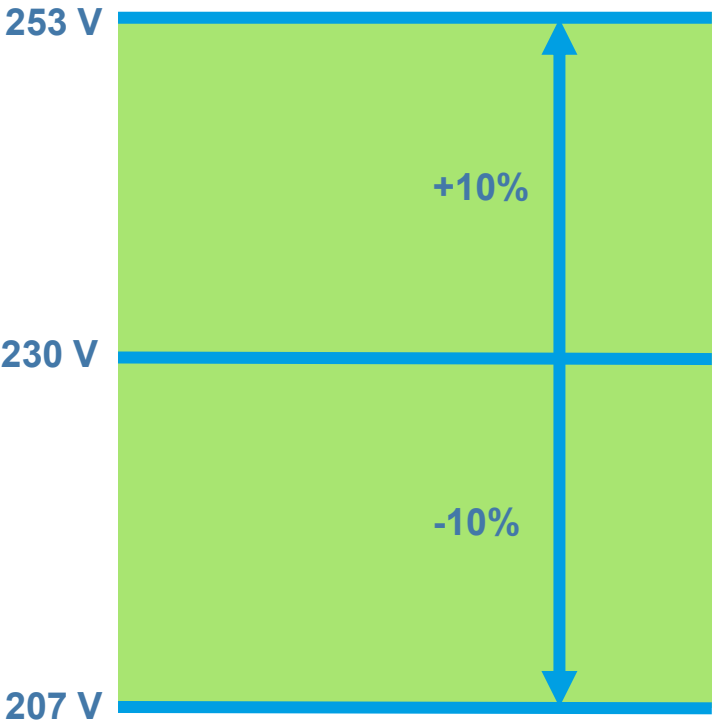
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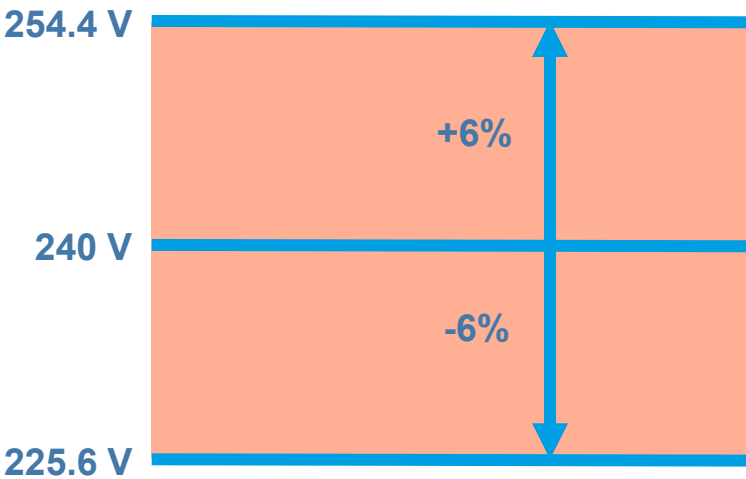


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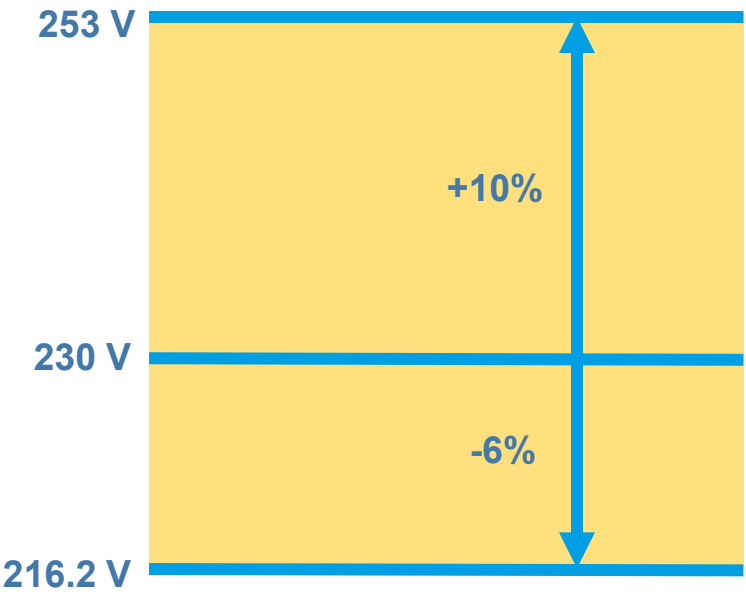


Modernised - TBC

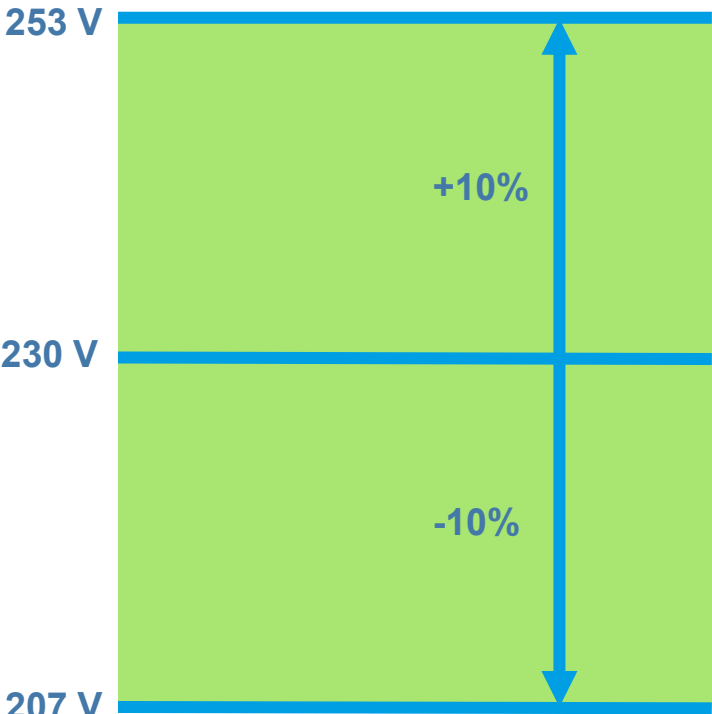
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Pre-1995



1995 to today



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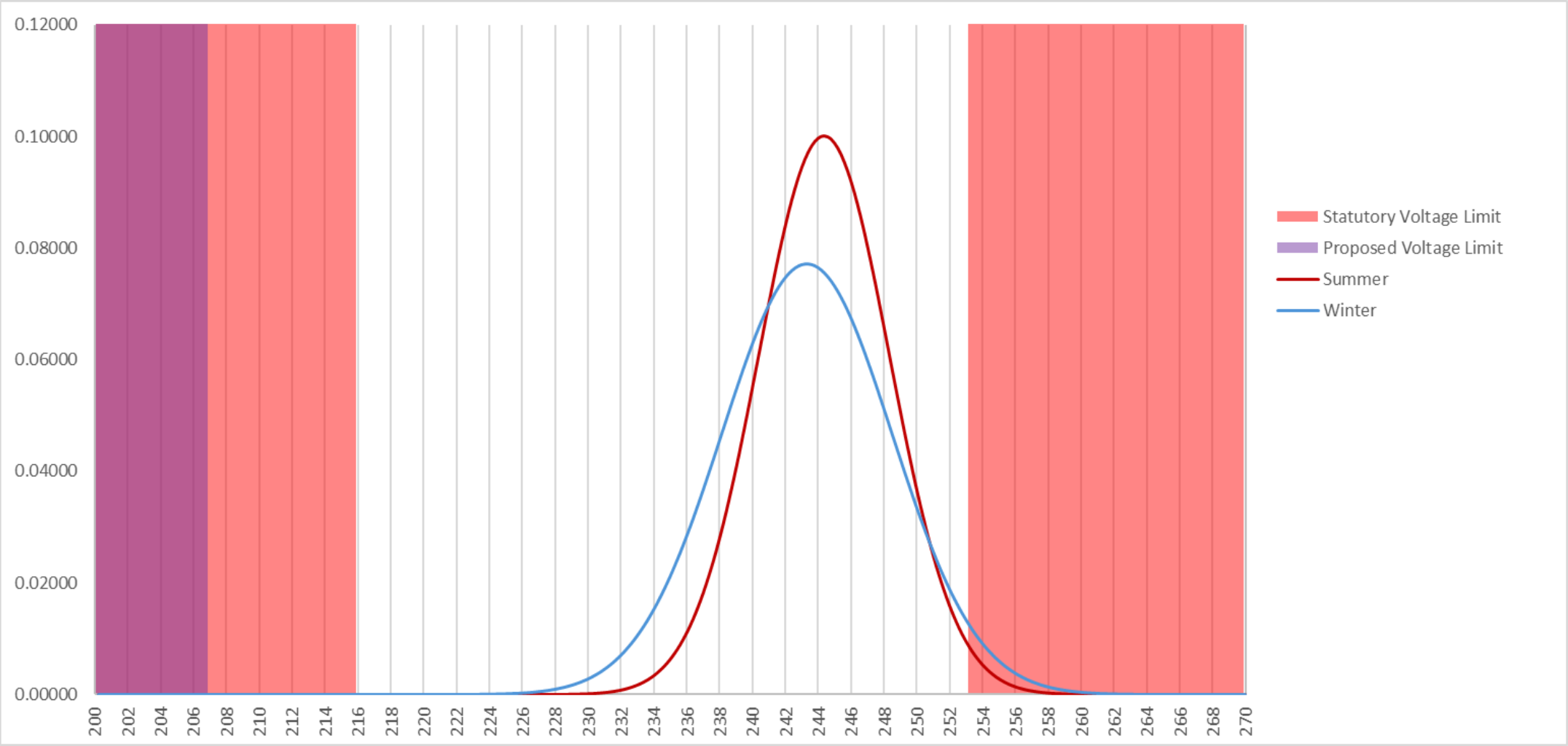
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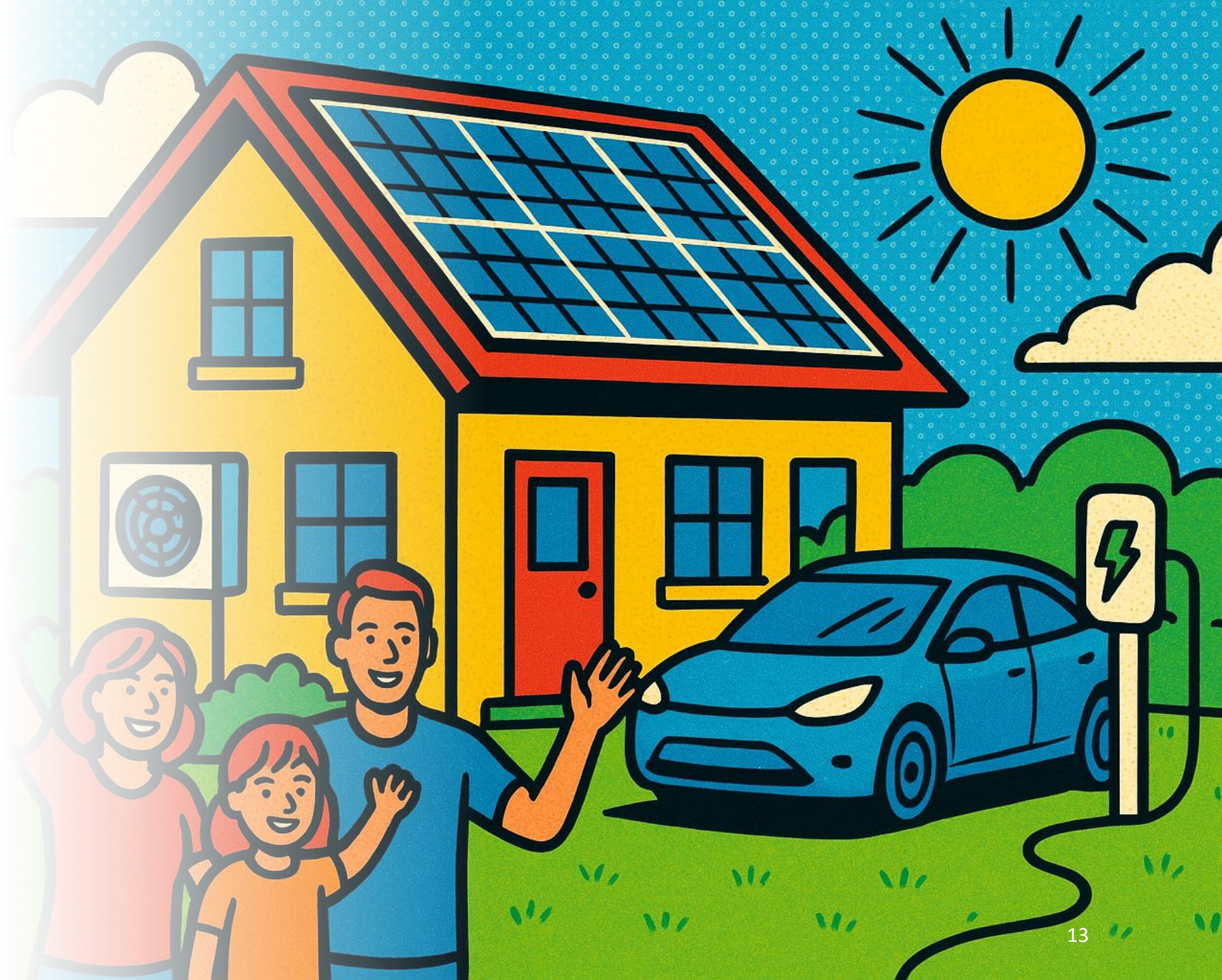
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*Other supporting documentation, including: Frazer Nash report (Energy Standards review), Energy Geeks, Millhouse Power, and **New Zealand modernising this year.***

Smart meter voltage data



Benefits



Benefits

1. Fewer barriers to connect **more demand** (inc. electric vehicles, heat pumps)
2. Fewer barriers to connect **small-scale generation** (e.g., domestic solar)
3. Reduce the risk posed by **high voltages** (e.g. EVCP tripping)
4. **Energy efficiency** benefits (conservation voltage reduction; saving customers money)
5. Facilitate more **innovative voltage management techniques** and **network flexibility**
(leveraging smart meter investment)

... the time to modernise is now

Note: Benefits are high probability, high consequence ('base case')...

Potential issues



Potential issues

1. Appliances impacted by **under-performance, tripping, failure**
2. **Protective devices operating slower**
3. **Power quality** (e.g. harmonics)
4. **Network impacts**, including losses, high transmission network voltage

... the time to modernise is now

... engagement on both benefits and potential issues is critical

Note: Potential issues are likely low probability, low consequence ('edge case')...

Timeline

1. Q1 – Q3 2025. ENA working group reviewing evidence and compiling case for change.
2. 08 October. Stakeholder engagement, ENA London Bridge.

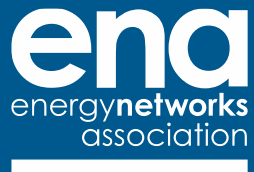
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2. 08 October. Stakeholder engagement, ENA London Bridge.
3. **21 November. Cross-utility / CNI stakeholder engagement, ENA London Bridge.**
4. 01 December. ENA consultation launch.
5. 21 December. ENA consultation end.
6. Q1 2026. Finalise and publish Case for Change.
7. 2026-2027. UK Gov progress consultation and legislation update.
8. 2028 onwards. DNOs utilise wider voltage range.

Call to action

1. To attend the cross-utility / CNI workshop on 21 November, contact Engineering@energynetworks.org
2. Register your interest for the consultation with Engineering@energynetworks.org
3. Talk to us during the summit



Energy Networks Association

4 More London Riverside
London SE1 2AU

t. +44 (0)20 7706 5100

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energynetworks.org

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