



Empowering Ukraine through a decentralised and resilient energy system

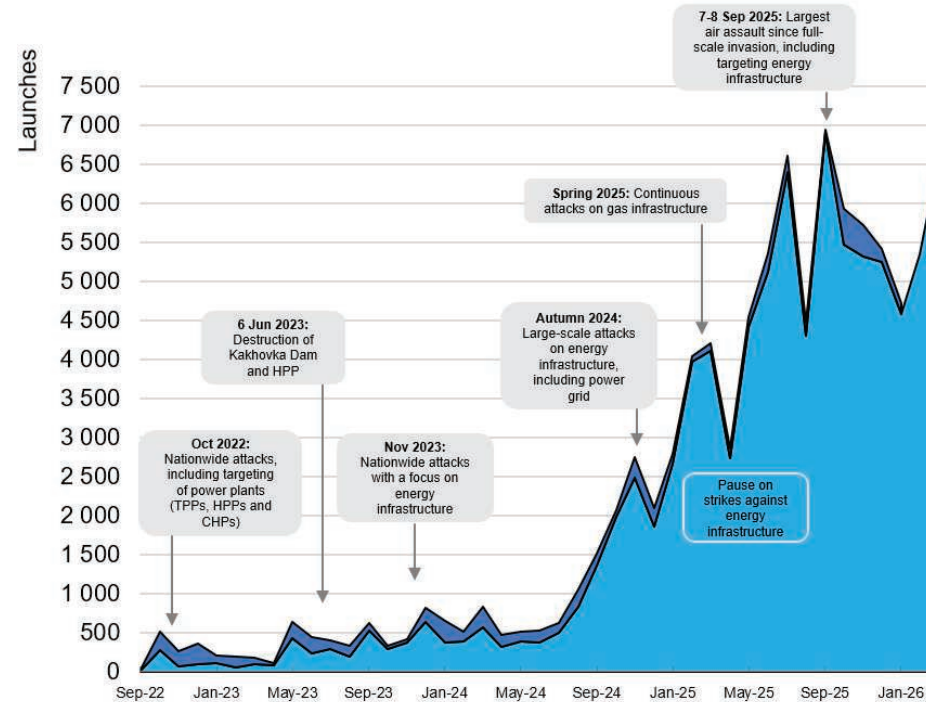
Theresa Gebhardt, Caspian & Black Sea Programme Officer

21 April, 2026

Ukraine: an unprecedented test of energy system resilience



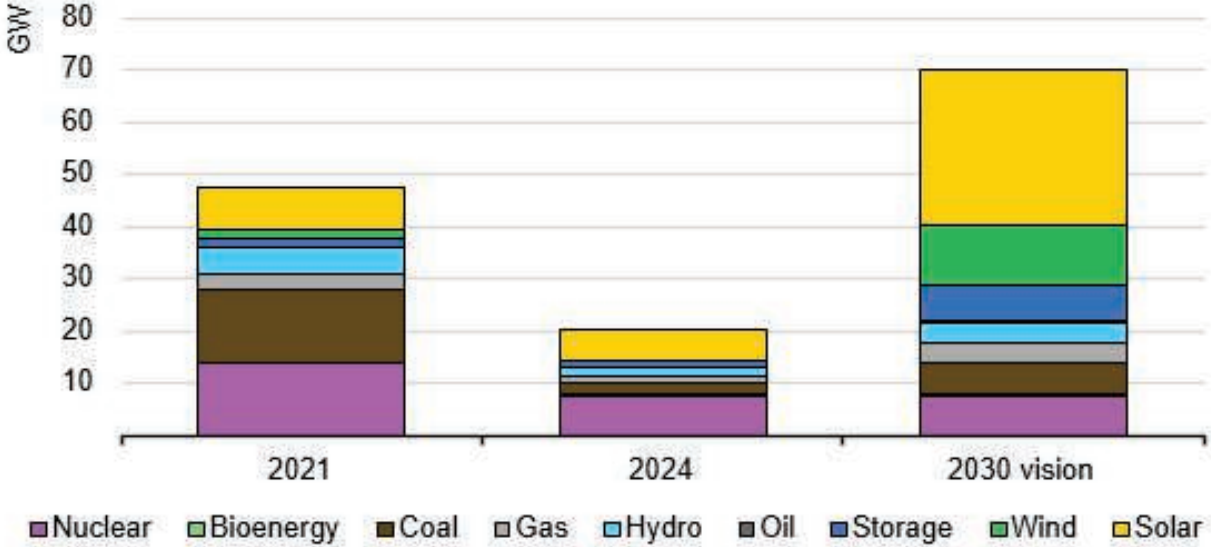
Monthly Russian attacks on Ukraine per weapon type, September 2022 to March 2026



Sources: IEA analysis based on the dataset available on kaggle ([Massive Missile Attacks on Ukraine - Data Review 2026](#)), on drone and missile attacks by the Ukrainian Ministry of Defence and the Ukrainian Government.

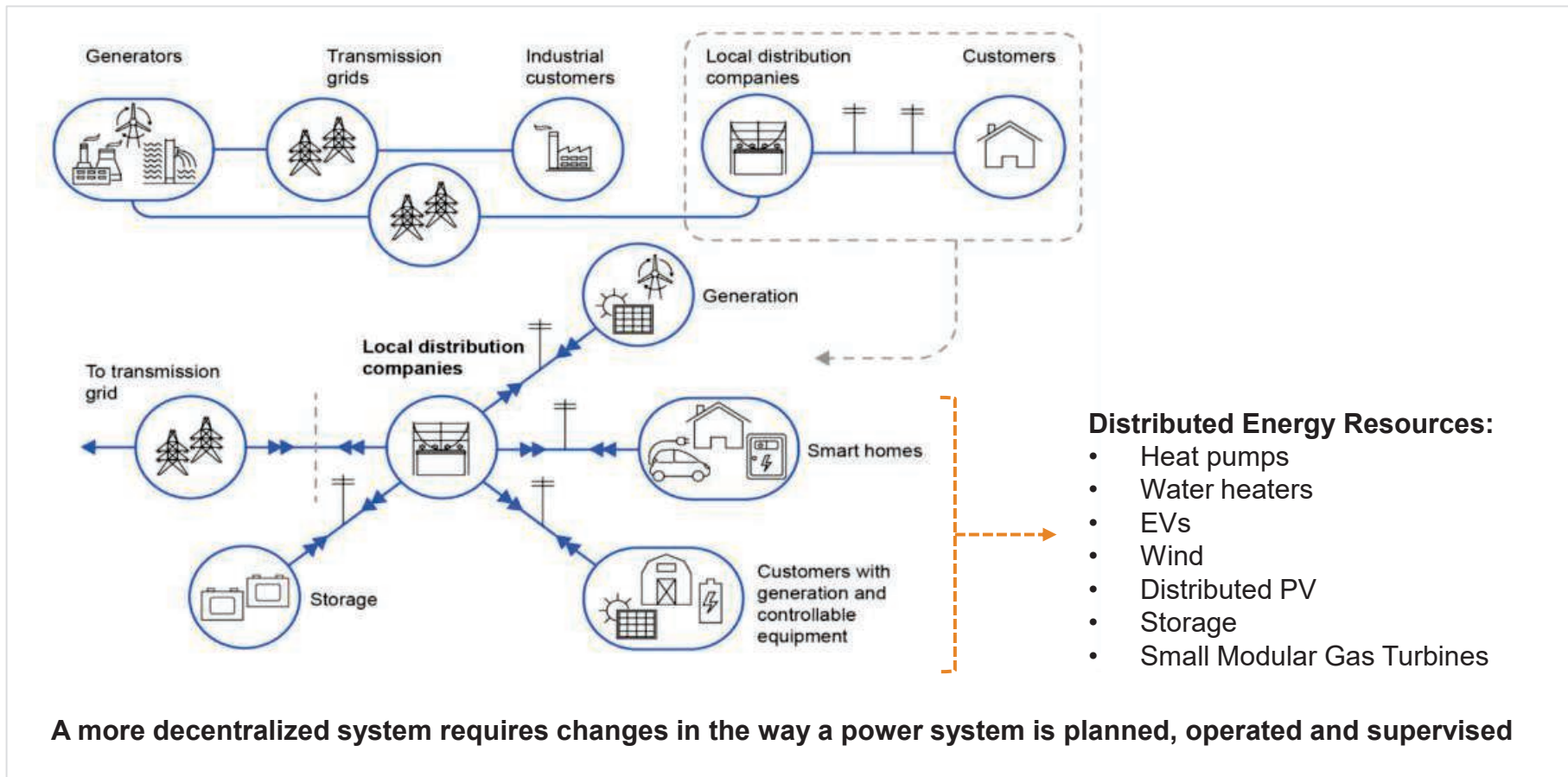
The fourth winter of the war saw an aggressive ramp up in attacks, driven primarily by drone strikes

Ukraine's energy system now and in the future



Ukraine will need around 24 GW of solar, 11 GW of wind, and 6 GW of energy storage, in addition to today's capacity, to meet its climate and energy targets.

Distributed energy resources change the energy landscape



Practical priorities for a more decentralised, resilient and modern power system

- **Decentralisation as security strategy.**

Scale up distributed energy resources that can provide not just power, but flexible and more resilient generation.

- **Boost energy infrastructure protection while improving equipment supply chains.**

Strengthen a multilayered defence approach – including reinforced physical protection - and continue improving equipment supply chains to ensure rapid repair.

- **Strengthen frameworks to unlock renewable investment.**

Ensure stable regulation, transparent governance, and predictable market conditions to de-risk projects to increase investment security in renewables and the wider energy sector.

- **Mobilise capital at scale through blended and innovative finance.**

Leverage concessional finance, export credits, and risk-mitigation tools to crowd in private investment for both resilient infrastructure and distributed energy.

Check out our latest reports on Ukraine



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Lessons learned from Ukraine

International Energy Agency

Ukraine's Energy Security

A pre-winter assessment

Country report — 22 October 2025

Policy options to accelerate distributed solar PV in Ukraine

Technology report — 04 December 2025

Empowering Ukraine Through a Decentralised Electricity System

A roadmap for Ukraine's increased use of distributed energy resources towards 2030

Country report — 17 December 2024

Unlocking Ukraine's Hydrogen Opportunity: A Roadmap

Country report — 27 March 2025

+ new analyses on biomethane, energy finance and reindustrialisation are coming out this year

Thank you for your attention!

In case of any questions or follow-ups, please feel free to contact me via: theresa.gebhardt@iea.org

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