



Building community resilience through energy communities

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Today we have already talked about how communities begin....



What comes next?

What happens after we have managed to build a functioning energy community?

Can an energy community become more than a way of producing and sharing renewable energy?

Could it also become a building block of a stronger, more resilient community?

Resilience: against what?

Different forms of disruptions

ENERGY PRICE SHOCKS
sudden price increases,
market volatility,
fuel shortages



GRID CONGESTION
limited grid capacity,
local production peaks,
high demand



EXTREME WEATHER
storms, heatwaves,
extreme cold, flooding,
wildfires



LONGER POWER OUTAGES
hours or days without
electricity, limited access
to essential services



**DISRUPTION OF ESSENTIAL
SERVICES**
water supply, heating,
communications, transport



**CYBER / GEOPOLITICAL
THREATS**
cyberattacks, sabotage,
conflict, attacks on
infrastructure



Community resilience is the ability of a community to
COPE with disruption,
ADAPT to changing conditions,
CONTINUE functioning and
RECOVER from setbacks

Different risks. Same question:

How well can our communities adapt when normal conditions change?

Resilience is not only about preparing for one particular crisis. It is about capacity to **prepare, adapt, respond and recover**.

Community resilience through energy community

How energy communities make communities more resilient?

TECHNICAL

Keeping essential functions running

Local generation
Storage
Flexibility
Backup options for priority services

ECONOMIC

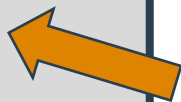
Reducing dependence and
keeping value local

Lower price exposure
Local ownership
Local investment
Energy cost stability

SOCIAL

Building the capacity to act together

Trust
Cooperation
Community organisation
Shared decision-making



Technology provides
capacity.
People turn it into
resilience!

Energy communities can support resilience, but it does not happen automatically

EVERYDAY RESILIENCE

- ☐ More local energy use
- ☐ Less exposure to price fluctuations
- ☐ Flexibility and peak management
- ☐ Reduced pressure on the grid
- ☐ More local capacity and options

BUT

CRISIS RESILIENCE

- ☐ Local generation does not automatically mean backup power
- ☐ Grid-connected PV may shut down during an outage
- ☐ Storage alone does not guarantee essential services can continue
- ☐ Resilience needs to be planned and designed

If resilience is one of our objectives, we need to think about it from the start.

Designing for resilience from the start

WE USUALLY ASK: **How much can we produce?** **What is the payback time?**



WE SHOULD ALSO ASK: **What do we want to keep running if the wider electricity system is unavailable?**

WHERE? Where generation and storage should be located?

Where could this energy become most valuable if normal conditions change?

WHAT FIRST? Which loads should have priority?

What are the essential functions we need to keep running?

WHAT NEXT? How today's investments could allow additional resilience functions in the future?

Avoid designing ourselves into a corner



Water supply? Heating?
Communications?
A community centre?
A care facility?
A local shop?
Food or agricultural cold storage?

We do not need to build everything now. We just need to avoid making future resilience unnecessarily difficult or expensive.

More energy communities, a more resilient energy system – let's dream

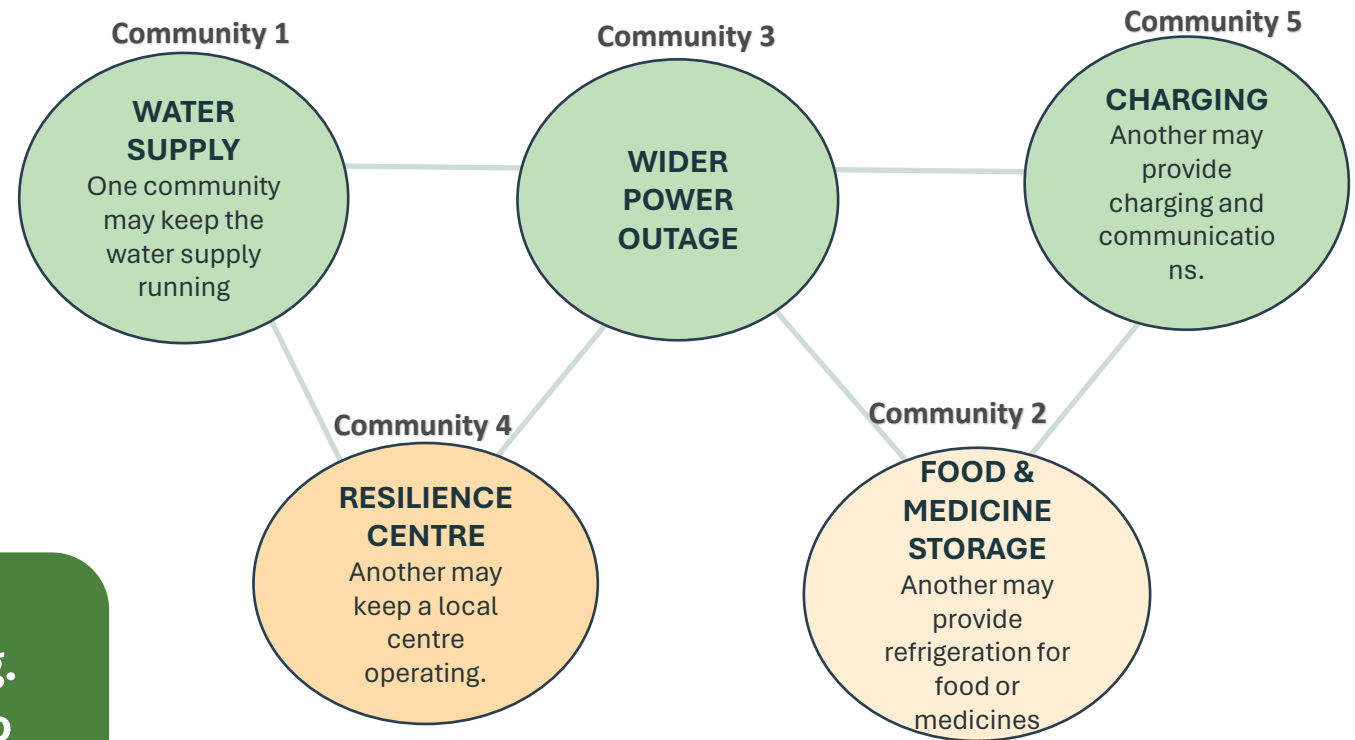


Imagine hundreds of energy communities distributed across the country.

A network of distributed local energy capacity begins to take shape.

During a larger disruption, not every community needs to provide everything.

The more local energy communities we have, the greater the chance that essential services and energy are available somewhere nearby.



**Not every community needs to do everything.
What matters is that someone nearby can do something.**

From community resilience to national energy resilience

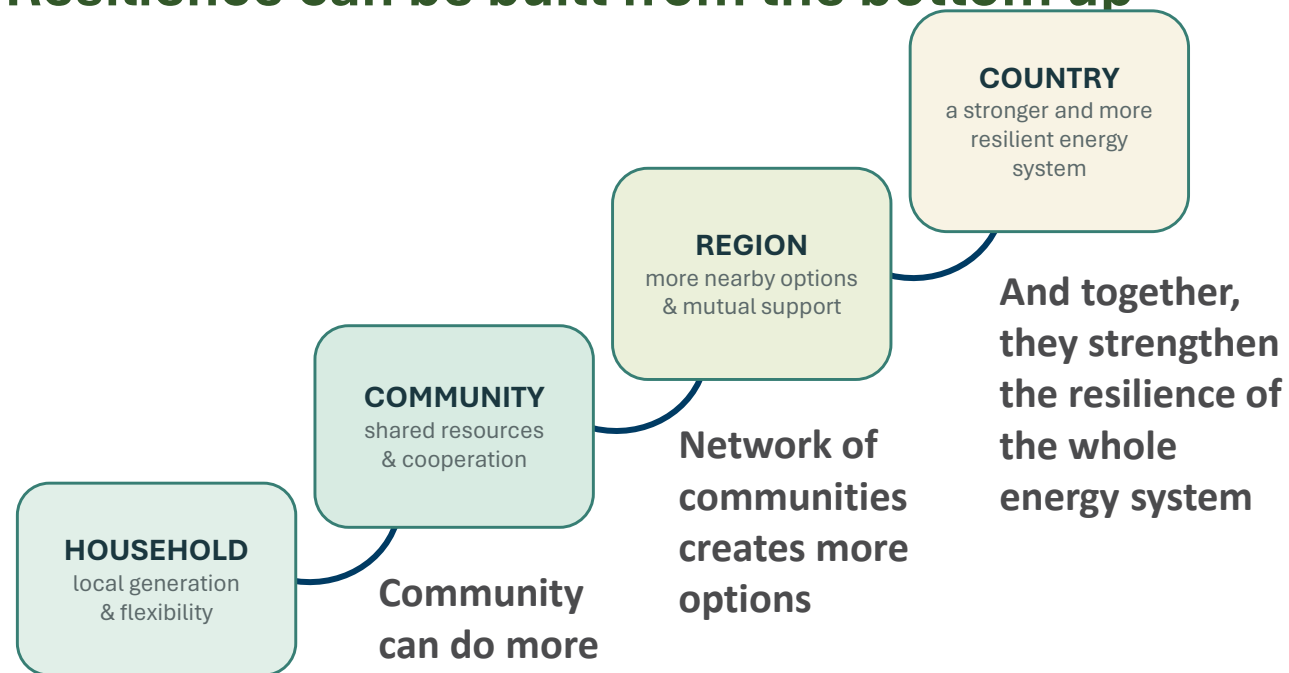
One energy community makes a difference locally. Many communities can strengthen the wider energy system

When local energy capacity is spread across many places:

- ☐ generation becomes more distributed
- ☐ storage becomes more distributed
- ☐ flexibility becomes more distributed
- ☐ local knowledge and the capacity to act are also spread across communities

Local systems and the wider grid are not alternatives – they strengthen each other.

Resilience can be built from the bottom up



Ukraine: resilience under extreme conditions

WHAT UKRAINE HAS SHOWN

- ❑ Large central energy assets and critical grid nodes can become major points of vulnerability.
- ❑ When parts of the interconnected system are damaged, local generation and distributed resources can help maintain essential services.
- ❑ Smaller, distributed assets are harder to disable systematically and can often be restored or replaced more quickly.

LESSONS THAT APPLY BEYOND UKRAINE

DECENTRALISE	Spread generation and storage across many locations.
DIVERSIFY	Avoid dependence on one technology, asset or supply route.
PLAN FOR ESSENTIAL SERVICES	Know what must keep running when normal conditions fail.
BUILD FLEXIBILITY & REDUNDANCY	Create alternatives so one failure does not stop the whole system.

The lesson is not to design every energy system for war – but to build systems that have more options when normal conditions change.

IEA, 2026 — Energy System Resilience: Lessons learned from Ukraine

<https://www.iea.org/reports/energy-system-resilience>

IEA, 2024 - Policy options to accelerate distributed solar PV in Ukraine

<https://www.iea.org/reports/policy-options-to-accelerate-distributed-solar-pv-in-ukraine>

Final thoughts....

Resilience is a bit like an umbrella:

**you don't buy it
because you want it
to rain.**

You buy it because sometimes it does.



And unlike an umbrella, a good energy community is useful even when the sun is shining!

Thank you!

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