

Why Ukraine's Reconstruction Must Be Green

Article by Martin Vrba

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Ukraine's reconstruction is only partly a matter for the future: housing, agriculture and the energy grid require immediate action, even as the war rages on. But economic recovery, as climate journalist Martin Vrba argues, must not be a return to the past. Only a green transition can ensure Ukraine's resilience in war and geopolitical independence in peacetime.

The collapse of the Kakhovka Dam in southern Ukraine on 6 June – most likely a deliberate Russian attempt to hinder a long-awaited Ukrainian counteroffensive – drew international attention to the environmental impacts of Russia's full-scale invasion. The flooding caused by the destruction of the dam displaced thousands of people, and it has been widely referred to as an "ecocide" for its devastating effect on biodiversity.

The emptying of the water reservoir, a fundamental resource for irrigation in the region, has catastrophic consequences for agriculture, which has suffered heavily from Russian aggression. According to the Kyiv School of Economics, the losses for Ukraine's agricultural sector exceeded 4 billion dollars already before the Kakhovka disaster. The estimation includes the damage to land, infrastructure and agricultural machinery, which directly impacts production.

The collapse of the hydroelectric dam also adds to Ukraine's energy problems, since energy infrastructure has been regularly targeted by Russian attacks. A recent Energy Charter assessment calculated that "the damages to the Ukrainian energy sector were at least 9 billion dollars, including 1.4 billion dollars in the utility infrastructure (including district heating, water supply and drainage, and household waste management facilities)."

Though it may appear premature since the war has no end in sight, the Kakhovka disaster makes the need for a green transformation of Ukraine even more urgent. A strong green aspect of post-war reconstruction is essential both for the rebuilding of damaged infrastructure and for the modernisation of Ukraine's economy.

For the EU, the idea of a green transformation of its Eastern European partners is nothing new. For well over a decade, Ukraine has engaged in broad collaboration on the climate and energy transition with the EU, its member states, and various international organisations. Before the full-scale Russian invasion in 2022, the country was making slow but steady progress.

Ukraine's climate efforts

In 2004, Ukraine assumed its first international climate obligations by signing the Kyoto Protocol. Seven years later, it became a full member of the Energy Community Treaty (ECT), whose goal is to create an integrated European energy market, improve the security and environmental conditions of energy supply, and promote renewables and energy efficiency.

The signing of the EU-Ukraine Association Agreement in 2014 further increased cooperation between Ukraine and the bloc on various levels, including energy and the environment. Two years before the

beginning of Russia's full-scale invasion, Ukraine openly expressed its desire to participate in the European Green Deal (EGD), announced by the Commission in late 2019, and formed with Germany an Energy Partnership focused on decarbonisation, energy efficiency, renewables, hydrogen and the just transition of coal regions.

The EU's [Economic and Investment Plan](#) for post-Covid recovery had the [ambition](#) to "mobilise 2.3 billion euros from the EU budget in grants, blending and guarantees, to stimulate jobs and growth, support connectivity and the green and digital transition" in the Eastern Partnership, an initiative launched in 2009 with Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

More specifically, the priority areas of this plan included investing in the green transition, creating sustainable energy infrastructure, and building environmental and climate resilience. For Ukraine in particular, the plan aimed to directly support a hundred thousand small and medium-sized sustainable enterprises with up to 1.5 billion euros and provide financial assistance to over ten thousand small farms to accelerate the transition to sustainable agriculture.

A 2021 paper by the Heinrich Böll Stiftung emphasises that "Ukraine was among the first EU neighbours to announce their readiness to [contribute to the European Green Deal](#) and a high-level EU-Ukraine dialogue on this topic has already commenced." For Europe to become a climate-neutral continent, the implementation of Green Deal policies needs to reach beyond the borders of the EU, including the Western Balkans and the Eastern Partnership.

The biggest member of the Partnership, pre-war Ukraine was responsible for 60 per cent of its greenhouse gas emissions, which overall accounted for 11 per cent of the European continent's total emissions. Ukraine's sizeable share was mainly due to the high energy intensity of its economy, largely relying on heavy industry dating back to the Soviet era. The emissions from the energy sector (42 per cent) were followed by industry (23 per cent) and agriculture (13 per cent).

The war made progress much harder, or even temporarily impossible. But with the fighting now largely confined to the eastern part of Ukraine, the process of reconstruction has already begun in many areas of the country – and with it the opportunity to modernise the Ukrainian infrastructure and economy.

No return to the past

A few months after the beginning of the Russian invasion, over 50 Ukrainian and international NGOs started advocating for a recovery plan that prioritises the [development of the green economy](#) and integrates environmental and climate policies across all sectors. According to the NGOs, "The key requirement is that Ukraine's recovery should not be a return to the pre-war status but a full-fledged development ... taking into account the European Green Deal, which is also a guarantee of meeting the Copenhagen criteria for the EU accession."

At the same time, these civil society organisations maintain, the green restoration of Ukraine needs to empower local self-government, focus on transparency and involve the public in the decision-making process.

In April last year, Ukrainian President Volodymyr Zelensky set up the National Council for the Recovery of Ukraine from the Consequences of War. A few weeks later, the government presented the fundamental principles of recovery and a preliminary recovery plan covering key sectors such as infrastructure, economic revival, energy security, environmental protection, and healthcare. While the draft plan includes a dedicated section on environmental security, it still falls short of a unified green

strategy that aligns with climate neutrality objectives.

The International Expert Conference on the Restoration, Reconstruction, and Modernisation of Ukraine took place in Berlin in October, with German Chancellor Olaf Scholz and EU Commission President Ursula von der Leyen as co-chairs. Attended by prominent international experts and G7 representatives, the conference highlighted the urgent need for Ukraine to undergo significant changes and fully implement European integration reforms as part of the reconstruction process.

Reconstruction during war

While there is work that needs to be planned but can't be done as the war still rages on, there is also a green transition of Ukraine which is already taking place.

Many Ukrainians are actively engaged in the process of reconstructing and developing their communities. Those who experienced liberation after Russian occupation have started the arduous task of rebuilding their homes and neighbourhoods. Meanwhile, others have opened their doors to internally displaced individuals, offering them shelter and employment, and access to education for their children. In the areas close to the frontline, the main issue is building resilience to withstand future attacks.

Wind and solar energy in particular are cost-effective and sustainable options that can help prepare Ukraine's power grid for a future of decentralised production and distribution of electric power.

One of the most serious impacts of the war has been the destruction of civilian infrastructure, the repair of which is naturally a top priority of any post-war reconstruction efforts. Rebuilding shelled cities and villages, repairing roads and restoring public transport is key to return to decent living conditions as soon as possible.

The obvious first step is the construction of new houses for the hundreds of thousands of Ukrainians who lost their homes. The speed and cost-effectiveness of new buildings are crucial, but there are also other issues to be considered, such as energy efficiency. The reconstruction of cities destroyed by shelling also presents an opportunity to improve urban planning and incorporate climate adaptation strategies.

A big chapter is the reconstruction of energy infrastructure. According to Human Rights Watch, Russian attacks on civilian infrastructure "deprived millions of civilians of at least temporary access to electricity, water, heat, and related vital services ahead of the cold winter months". As of December 2022, these attacks had also killed at least 77 civilians and injured 272.

Strikes on critical infrastructure and subsequent blackouts are acts of terror aimed at making life unbearable for Ukrainians. This threat can only be contained if renewable energy sources become the primary focus. Wind and solar energy in particular are cost-effective and sustainable options that can help prepare Ukraine's power grid for a future of decentralised production and distribution of electric power. [\[AG1\]](#)

Decentralised energy production is also less susceptible to Russian shelling, and as such it can become

an integral part of Ukraine's energy security strategies. Concrete steps in this direction have already been taken: at the beginning of March, the EU announced the donation of 5,700 solar panels to provide electricity to essential buildings like schools, hospitals or fire departments.

An additional advantage of solar panels is that they can be installed quickly, which makes them fit for Ukraine's immediate energy needs.

In context of the green transition, other sectors of Ukraine's economy (like some areas of heavy industry or mining) may become obsolete and uncompetitive in the next years due to their high energy and carbon intensity. This may pose significant social challenges to post-war Ukraine. A green reconstruction will serve as an opportunity to attract investments in the country and create well-paid jobs.

Ukraine's green transformation will therefore serve multiple purposes, such as reducing dependence on fossil fuels, accelerating the path to EU membership, adapting to the impact of climate change, becoming part of global decarbonisation efforts, and softening the social impacts of the energy transition.

Change on many levels

In August last year, Ukraine's Resource & Analysis Center sketched two possible pathways for post-war reconstruction – one more ambitious and the other more pragmatic. Whereas the latter is mostly focused on strategic aspects such as energy independence and security, the more ambitious model calls for a post-war Green Deal for Ukraine focused on climate neutrality, green growth, and sustainable agriculture.

According to the European climate think tank [Adelphi](#), “both the Ukrainian government and its international partners have acknowledged the urgency and importance of a green reconstruction of Ukraine, outlining the need for the recovery plan to be synchronised with the European green agenda and aligned with the Paris agreement.”

Urban and regional development, energy, industry, transport and agriculture are at the centre of this plan. This means improving the energy efficiency of housing infrastructure, enhancing climate resilience in cities, promoting the use of renewable energy sources on a local level, phasing out coal, supporting sustainable agricultural practices of small and medium-sized farms, and ensuring a just transition in coal regions.

Small to medium-sized farms are the main source of employment in the Ukrainian agricultural sector, and green policies in this field could significantly contribute to the post-war development of scarred rural areas. However, small farms could face more obstacles in accessing international funds compared to large, industrial agricultural companies. Dedicated support for small farms will be crucial to revive destroyed villages and enhance sustainable agricultural practices.

At the same time, for any post-war reconstruction to be successful, Ukraine needs to implement structural reforms and overcome the challenges of corruption. Strengthening the rule of law and promoting a transparent and inclusive government structure should be among the top priorities, [Adelphi](#) argues.

Ensuring that the reconstruction of Ukraine will be truly green adds another level of difficulty to an already challenging task. Success will depend on the political determination to break free from fossil fuels, as well as on obtaining access to the knowledge expertise necessary to implement low-carbon solutions, getting adequate funding, and ensuring the transparent use of resources. For Ukraine, going

green is also a geopolitical choice that would ensure greater alignment with the EU and put a definitive end to the dependence on Russian fossil fuels.

Damaged agriculture and biodiversity

The environmental cost of war has been huge. During his speech at the COP27 Summit in Sharm El-Sheikh last November, President Volodymyr Zelenskyy said that “The Russian war has destroyed 5 million acres of forests in Ukraine in less than six months.” Public health is also negatively affected by pollution and water disruptions and shortages, alongside the increased presence of heavy metals in the food chain as a direct result of explosions over farm fields.

The damage to agricultural land is especially worrying because about a quarter of the world’s chernozem – a fertile, humus-rich grassland soil – is located in Ukraine. One of the consequences of Russian invasion is the reduced production, which resulted in rising food prices in many countries.

The suspension of import duties, quotas, and trade defence measures on Ukrainian exports to the European Union, which have been recently extended, can provide much-needed relief to Ukrainian agricultural producers and exporters. A Turkey-brokered deal allowing Ukraine to keep exporting grain and other agricultural products from its Black Sea ports has so far averted the worst effects of a global food crisis, but the damage suffered by once fertile Ukrainian soil remains – and it is nothing new. Environmental organisations have pointed out how agricultural productivity has been negatively impacted since the beginning of Russia’s aggression against Ukraine in 2014.

Ukraine is also “home to 35 per cent of Europe’s biodiversity and possesses one out of three species under protection in Europe, which exist only in Ukraine’s steppes,” a study emphasises. An accurate assessment of biodiversity loss is impossible as the conflict rages on and many sites are inaccessible because they are mined.

A map of environmental damage created by Greenpeace in collaboration with the Ukrainian NGO Ecoaction provides a general assessment of the scale of damage war is causing to the local environment. Such an overview may also serve as a data tool for charges of environmental crimes and ecocide as part of the post-war reparations process.

The future starts now

While some aspects of Ukraine’s green transformation will have to wait for a more favourable geopolitical situation, others are already crucial to create a more resilient country able to withstand the hardships of the Russian shelling of critical infrastructure. Renewables and decentralised energy production, soil degradation and other kinds of environmental damage call for immediate action.

Despite the military conflict largely taking place in the eastern part of Ukraine, its impacts are strongly felt in Europe and negatively affect many other countries around the world. So while the attention of media and policy-makers is largely fixated on the supply of weapons, it is also important that Ukraine’s European allies participate in the country’s green renewal. EU countries can provide both financial and material assistance, and help Ukraine to attract green investments for a sustainable economic recovery.

The post-war reconstruction of Ukraine and its green transformation not only do not contradict each other, but significantly overlap. Working on green transformation also means moving Ukraine closer to EU membership and strengthening the country’s geopolitical security and relevance on the international stage. It is a win-win strategy for everyone, and a light at the end of the tunnel of war and suffering.

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