The Future of U.S. Development Assistance to Ukraine: Facilitating Ukraine’s EU Accession in the Agriculture, Energy, and Tech Sectors

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The Future of U.S. Development Assistance to Ukraine: Facilitating Ukraine’s EU Accession in the Agriculture, Energy, and Tech Sectors

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Bureau of Europe and Eurasia

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Acknowledgments

This report would not have been possible without the generous support of many individuals, whose time, expertise, and thoughtfulness have been invaluable to our research.

First, we would like to thank the interviewees who took the time to speak with us. As many of these people are involved in efforts to support Ukraine and will be involved in Ukraine’s future reconstruction, we hope this paper provides unique insights that may benefit their work.

Second, we would like to thank our graduate thesis advisor, Professor Robert Zoellick, and our thesis seminar leader, Professor John Haigh, whose guidance and feedback have been instrumental to our research and recommendations. Thanks as well to the Belfer Center for Science and International Affairs and the Mossavar-Rahmani Center for Business and Government for financially supporting valuable trips to Kyiv and Washington DC.

Finally, we would like to thank our client for his time and consideration throughout the duration of our research.

Client Description

Our client is the Senior Advisor for Ukraine’s Recovery and Reconstruction at the United States Agency for International Development. The newly created Senior Advisor position is housed within the Agency’s Bureau for Europe and Eurasia and is based in Washington DC. The Senior Advisor oversees the policy and planning process for future U.S. development assistance initiatives related to Ukraine’s medium to long-term economic recovery.

Scope Note

Given the wartime uncertainty and existing literature on Ukraine’s immediate needs, the scope of this thesis is limited to the medium to long-term recovery of three key sectors in Ukraine: agriculture, energy, and tech. We recognize damage can fluctuate and that the scope and strategy of reconstruction may therefore change. Nevertheless, while we are unable to predict when the war will end or when post-war reconstruction may fully commence, by constraining our analysis to the medium to long term, we are able to provide a unique perspective and contributions within the larger ecosystem of reports on reconstruction.

To gain a more in-depth understanding of reconstruction needs, we conducted 34 interviews with key stakeholders, traveled to Ukraine to assess the impact of the war first-hand, and traveled to Washington DC to meet with policymakers and other experts.

Harvard Faculty Advisor Statement
“Ilya, Ethan, and Seth have crafted a timely paper with practical recommendations to assist Ukraine’s recovery and reconstruction. Their extensive surveys and interviews offer insights from numerous, valuable perspectives. With the guiding star of Ukraine’s accession to the EU, they have focused on taking specific steps in important sectors in ways that will encourage US and wider international support, as well as integration with Europe. I hope USAID and others will be able to draw from and build upon this project.”

Robert B. Zoellick  
Adjunct Professor and former President of the World Bank, US Trade Representative, and US Deputy Secretary of State
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ABBREVIATIONS

AA - Association Agreement
CAP - European Union’s Common Agriculture Policy
DCFTA - Deep and Comprehensive Free Trade Area
EBRD - European Bank for Reconstruction and Development
ENTSO-E - European Network of Transmission System Operators for Electricity
EU - European Union
G7 - Group of Seven
IFC - International Finance Corporation
IFI - International Financial Institution
IMF - International Monetary Fund
PAE - Policy Analysis Exercise
SPS - Sanitary and Phytosanitary Standards
USAID - United States Agency for International Development
USDA - United States Department of Agriculture
USTR - United States Trade Representative
WTO - World Trade Organization
EXECUTIVE SUMMARY

As the full-scale Russian invasion of Ukraine enters its second year, the United States Agency for International Development (USAID) must plan for how it can most effectively contribute to Ukraine’s eventual recovery and reconstruction in partnership with other international donors.

The war has caused extraordinary human, social, and economic harm, with current reconstruction cost estimates ranging between $580 billion - $1.1 trillion. Given the scale of devastation and potential of a prolonged conflict, reconstruction efforts cannot wait until the cessation of hostilities; further, these efforts must be global in nature and involve private-sector participation. As a candidate for European Union (EU) membership, reconstruction must also catalyze Ukraine’s deeper integration with Europe and its accession to the EU. This accession process will be long, complex, and must involve major reforms to the country’s judicial system. Changes to key economic sectors will also be necessary to bring Ukrainian agriculture, energy, and technology firms into alignment with the EU’s 35 acquis, or accession criteria.

This report examines whether – and if so, how – USAID should seek to facilitate Ukrainian firms’ greater alignment with EU standards. While explicitly standards-oriented assistance may expedite Ukraine’s EU accession process, USAID may be able to better contribute to the reconstruction effort via programming that is not directly related to EU standards.

Our analysis concludes with three overarching recommendations for USAID’s medium to long-term engagement in Ukraine (see p. 42):

1. **Prioritize Programming based on International Standards**: USAID should provide non-EU standards-related support to Ukraine that catalyzes the country’s recovery and deeper economic integration with the EU but does not explicitly address standards-related issues.

2. **Incorporate Limited EU Standards-Focused Programming**: USAID should develop programming that explicitly facilitates Ukrainian firms’ alignment to EU standards. This would limit the risk of fragmentation among international donors, expedite Ukraine’s EU accession, and provide a more predictable financial environment for investors.

3. **Support Post-War Decentralization**: USAID should begin creating a framework for post-war decentralization that prioritizes grant-based and municipal-level initiatives to empower local communities to take ownership of their own reconstruction processes.

Each of these recommendations is intended to enhance USAID’s capacity to best contribute to the speedy revival of key economic sectors, in light of the political and technical limitations that currently exist in the U.S. Ideally, these three recommendations would enable USAID to gradually develop further standards-related initiatives, which are discussed in greater detail in this paper.

Moreover, we have sought to make our recommendations as comprehensive as possible by incorporating the following analytical points into our recommendations:
First, our report contextualizes the question of whether U.S. assistance should facilitate Ukraine’s alignment with EU standards within the international framework for reconstruction and the domestic U.S. political climate. This enables the discussion, analysis, and recommendations to reflect the course of action that is most effective and politically feasible.

Second, it incorporates takeaways from dozens of interviews held with policymakers, analysts, and private sector actors in Ukraine, Europe, the U.S., and international financial institutions. This provides insight into how views of future U.S. assistance vary significantly by region and sector.

Third, it frames its analysis within the dynamic and uncertain wartime environment, providing guidance as to how recommendations may change depending on the war’s progression. The goal is that this will allow the report’s findings to remain relevant even amid the uncertain outcome of the war.

We hope this report provides useful insights to USAID’s Bureau for Europe and Eurasia as its staff considers how to make future U.S. assistance to Ukraine as impactful as possible.
SECTION 1: INTRODUCTION

Since February 2022, the full-scale Russian invasion of Ukraine has taken an extraordinary human, social, and economic toll. According to the United Nations Human Rights Monitoring Mission in Ukraine, the invasion has resulted in over 23,000 civilian casualties and caused over eight million refugees from Ukraine to flee abroad, with more than 13.5 million internally displaced people as of April 2023.¹

The UN and other independent analysts predict that the actual figures of Ukrainian casualties and refugees are much higher.² Having altered the way of life for every person living in Ukraine before the war, the invasion has already unleashed untold suffering and trauma for the country’s population that no post-war reconstruction effort will be able to fully address.

The 2022 invasion has also caused significant damage to Ukraine’s economy and infrastructure at a scale that is unprecedented in Europe since WWII. Preliminary assessments from the World Bank, European Union, and Ukrainian government range widely in their methodologies and estimates, with predictions that the reconstruction of basic infrastructure alone will cost between $580 billion - $1.1 trillion.³

Even at the low end of these estimates, the scale of the reconstruction effort is difficult to fathom. Some officials such as German Chancellor Olaf Scholz and EU Commission President Ursula von der Leyen have likened the reconstruction effort to the post-WWII Marshall Plan.⁴ However, this comparison is misleading, as it significantly understates the overall cost, international dynamic, and myriad security-related challenges that will make Ukraine’s reconstruction one of the largest and most complicated development projects in history.⁵

Against this backdrop, it is welcome that the invasion has had a unifying effect in the West. Ukraine’s allies have largely acted in unison by providing unprecedented defense assistance and direct budgetary support to Ukraine, with U.S. commitments alone reaching $112 billion in Congressional appropriations within one year since the full-scale invasion.⁶ Perhaps more importantly for Ukraine’s economic future, the invasion has also improved the country’s prospects for EU accession, as the European Commission unanimously granted Ukraine formal

¹ Bel Trew, “100,000 Ukrainian Civilian Deaths: Shocking Toll of Putin's Bloody Invasion”
“Ukraine: Civilian Casualty Update,” United Nations Human Rights Office of High Commissioner
“Ukraine Overview,” ACAPS
² “Ukraine Refugee Situation,” United Nations High Commissioner for Refugees
³ “Ukraine Recovery and Reconstruction Needs Estimated $349 Billion (€349 Billion),” European Commission
⁵ John Letzing, “What would a ‘Marshall Plan’ for Ukraine Look Like?”
⁶ Katherine Gypson, “US Aid Commitment to Ukraine Largest Since US War in Iraq”
EU Candidate Status in June 2022 but refused to fast-track the country's accession process. More recently, EU member states reaffirmed their enduring commitment to supporting Ukraine’s Euro-Atlantic integration by dispatching President von der Leyen and 15 European Commissioners to Kyiv in February 2023 for pre-accession talks.

The Russian invasion has likewise largely unified Ukrainian politicians and citizens around deeper Euro-Atlantic integration. The country’s leadership has set goals to meet all of the European Commission’s pre-requisites to commencing accession negotiations, which primarily concern judicial reforms, anti-oligarchic legislation, and the alignment of business practices in key sectors. The government’s plans received near unanimous support across Ukraine’s political spectrum, though much remains at stake in terms of Ukraine’s future. As an opposition Member of Parliament interviewed for this report voiced, “I very much believe that this war is probably our single chance to actually do the reforms that Ukraine needs.”

A March 2023 NATO intelligence report suggests that the intensity of the fighting in Ukraine is unsustainable due to the high rates of attrition and munition shortages on both sides. This serves as a reminder that at some point in the future the fighting in Ukraine will either end or diminish in intensity. Even if part of the country remains under assault, the international effort to build Ukraine back better must begin, especially in areas that have hindered greater domestic prosperity in the past such as oligarchic influence, a judicial system vulnerable to corruption, and its hydrocarbon-based energy sector. Given its importance to Ukraine’s future prosperity, the country’s EU accession process can serve as a blueprint through which Ukraine can pursue its Euro-Atlantic future.

With this in mind, it is clear that the United States Agency for International Development (USAID) will play an important role in Ukraine for decades to come. While USAID is most concerned with providing unconditional direct budget assistance to Ukraine at present, a time will come when the Agency will refocus its efforts on medium to long-term challenges. In anticipation of this shift in assistance strategy, USAID has created a new advisory position tasked with developing a comprehensive, long-term plan for USAID assistance to Ukrainian businesses and citizens: the Senior Advisor for Ukraine’s Recovery and Reconstruction.

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7 “EU Enlargement Policy: Ukraine,” European Council of the European Union
Rachel Tresiman, “The EU Will Welcome Ukraine but Won't Fast-track its Membership Application”
8 “Ukraine: College of Commissioners Travels to Kyiv to Boost EU Support and Sectorial Cooperation with Ukraine,” European Commission
9 Member of Parliament, Author Interview
10 Jankowicz, “Russia Can Keep Up This Level of Fighting Intensity in Ukraine for 2 More Years, NATO Country Intel Says”
12 “Direct Budget Support: Ukraine Supplemental Appropriations Act, 2023, Mandated Assessment”
Office of Inspector General- USAID
This graduate thesis, known as a Policy Analysis Exercise (PAE) at Harvard Kennedy School, has been prepared for USAID’s Bureau for Europe and Eurasia. It seeks to provide advice to the Agency’s Senior Advisor for Ukraine’s Recovery and Reconstruction to build upon their ongoing efforts vis-à-vis Ukraine’s EU integration and accession process. While it is evident USAID will continue supporting vital sectors of Ukraine’s economy in the future, the composition and intended effect of this aid remain uncertain.

More specifically, USAID must decide whether – and, if so, to what extent – its development assistance to Ukraine explicitly seeks to enhance Ukrainian firms’ alignment with EU standards in key sectors. Given the importance of Ukraine’s agriculture, energy, and tech sectors to the country’s pre-war economy, coupled with their short and long-term growth potential in the reconstruction process, USAID will have to decide how to approach support for firms in these sectors. Moreover, these sectors also feature varying degrees of misalignment between U.S. and EU standards, which are discussed in greater detail in this report. Finally, their revival would increase Ukraine’s exports and foreign exchange earning capacity, which will be vital to the country’s short-term economic stability and long-term recovery.

On the one hand, USAID could model its reconstruction efforts in Ukraine off of its engagement in the Balkans, where it prioritized the involvement of U.S. private firms in the region. Doing so may advance U.S. business interests and safeguard U.S. national security interests by mitigating the involvement of strategic competitors, such as China and its apparent intention to “capture partner economies and undermine sovereign decision-making.” For instance, USAID could seek to establish a counterpart to its Countering Malign Kremlin Influence Development Framework in the Western Balkans that worked to strengthen vulnerable sectors of the economy, enhance independent media, and promote democratic values.

Alternatively, USAID could design its assistance in a way that primarily and explicitly focuses on facilitating Ukraine’s EU accession. Such an approach would involve new initiatives that provide funding and technical assistance to Ukrainian firms to bring them into alignment with EU standards. Bolstering Ukraine’s EU integration would expedite Ukraine’s accession to an economic customs union that would promote democratic values, increase Ukraine’s annual GDP, and enhance its national security.

The U.S.’ strategic objective for Ukraine is to achieve a democratic, economically sustainable, and successful Ukraine, as a member of the EU, with political-economic-security capacities to withstand future threats. At the same time, it is also important to address the immediate needs of the Ukrainian people and to retain public support in donor countries. In this regard, international standards such as the core standards to which WTO members commit, though not precisely EU-

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13 “U.S. Engagement in the Western Balkans,” USAID
14 Ibid.
aligned, may in some instances serve as a more appropriate framework for Ukraine’s reconstruction. International standards are not intrinsically in conflict with EU standards in key sectors and could complement EU standards and contribute to the overall success of Ukraine’s post-war reconstruction efforts.

**Problem Statement:** USAID faces a challenging policy problem that our PAE seeks to address by analyzing the following research questions:

1. *Should future U.S. development assistance to Ukraine be tied to facilitating Ukrainian firms’ greater alignment with EU standards in the agriculture, energy, and tech sectors?*

2. *What are potential advantages and disadvantages of tying future U.S. development assistance to helping Ukrainian firms align with EU standards with regard to:*

   a. *Ukraine’s successful reconstruction*
   b. *U.S. business interests*
   c. *U.S. national security priorities?*

This PAE analyzes the problem statement above through the subsequent analytical sections:

*Section 2: Background* provides context that enables more comprehensive analysis and bridges the gap from key strategic issues to implementation challenges.

*Section 3: USAID and EU Standardization* analyzes high-level advantages and disadvantages associated with Ukraine’s greater alignment with EU standards and provides detailed evaluations of the agriculture, energy, and tech sectors.

*Section 4: Recommendations* provides advice to support USAID’s medium to long-term efforts related to the reconstruction of Ukraine’s agriculture, energy, and tech sectors.

*Section 5: Conclusion* offers closing analysis, outlines potential limitations of our report, and synthesizes key takeaways for future USAID initiatives.
**SECTION 2: BACKGROUND**

2.1: Macroeconomic Overview

Sustained macroeconomic stability in Ukraine is essential to maintain the war effort and create an environment for successful reconstruction. Increased domestic and foreign investments are needed for a successful recovery that will revive macroeconomic conditions. Ukraine’s economy was constrained even before the February 2022 invasion as the country was still addressing the negative economic shocks of the COVID-19 pandemic and struggling to effectively root out corruption in key sectors.

Though estimates vary, there is consensus that Ukraine’s GDP has declined by at least 30% since the invasion. At the same time, inflation has reached almost 30% and the value of the national currency has drastically decreased. However, the late March accord between the National Bank of Ukraine and Ukrainian Ministry of Finance has paved the way for a budgetary agreement with the IMF that, if implemented, would limit inflation in the short term. Further, representatives from the IFC have warned that international donors are neglecting the private sector, which is “unfortunate because pre-war, the private sector generated 70% of the country’s GDP.” Moreover, World Bank interviewees focused on economic policy in Eastern Europe reiterated difficulties with Ukraine’s current macroeconomic conditions, stating that the Bank has faced challenges in providing direct budget support to Ukraine. Nevertheless, to date Ukraine has been able to keep key macroeconomic indicators afloat, including stabilizing the exchange and key policy rates.

![Ukraine’s Annual GDP Growth (percentage)](source: World Economic Forum (2022))

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16 “IMF and Ukrainian Authorities Reach Staff Level Agreement,” *International Monetary Fund*
17 International Finance Corporation Program Manager, Author Interview
18 World Bank Economists, Author Interview
19 “NBU February 2023 Inflation Update,” *National Bank of Ukraine*
Further, Ukraine’s foreign trade in goods deficit during the period of January-June of 2022 doubled year-over-year to $2.5 billion.\textsuperscript{20} Exports and imports of goods decreased by 24\% (to $22.7B) and 19.1\% (to $25.2B), respectively.\textsuperscript{21}

The Russian invasion of Ukraine has restricted Ukraine’s capacity to export goods via the Black Sea, with huge implications for Ukraine’s macroeconomic stability. Before the 2014 invasion of Ukraine, the country had access to 18 seaports.\textsuperscript{22} After the annexation of Crimea, Ukraine had 13 functioning seaports that were responsible for a major share of Ukraine’s trade turnover.\textsuperscript{23} At the moment, Ukraine’s sea port navigation is largely paused and remains under severe threat from Russian attacks. According to State Statistics Service of Ukraine, as of January 2022, the country’s top five export destinations were China ($6.8B), Turkey ($4.6B), Poland ($3.9B), Spain ($3.2B), Italy ($3.2B), while Russia remained Ukraine’s top 7\textsuperscript{th} export destination even after the initial 2014 invasion. Ukraine’s top five import partners were China ($10.5B), Russia ($6.3B), Belarus ($5.3B), Germany ($3.9B), and United States ($3.6B). It is unclear how Ukraine’s trade relationships have changed since the full-fledged invasion, as Ukrainian officials are not disclosing trade-related data amid the war.

2.2: State of the War

As the full-scale Russian invasion of Ukraine enters its second year, the conflict remains dynamic and its outcome is difficult to predict. As of February 10, 2023, Russian forces continued to occupy large swaths of land in eastern and southeastern Ukraine in Luhansk, Donetsk, and Zaporizhzhia Oblasts. Ukrainian and Western military officials have predicted that Russian forces will expand their military operations along the 1,300 km front during the spring and summer. Accordingly, it is hard to assess the precise scale of destruction vis-à-vis Ukraine’s territory and infrastructure.

In this vein, the dynamic developments in the Russian-Ukraine conflict will complicate the international community’s efforts to implement a comprehensive and effective reconstruction plan for Ukraine. First, frequent waves of Russian airstrikes against Ukrainian civil and energy infrastructure stand to increase the total cost of damages, worsen electrical blackouts across the country, and discourage the return of Ukrainian citizens living abroad. Second, unpredictable and dangerous conditions on the ground will make it difficult for aid workers to access the worst-affected areas and have resulted in a current lack of reliable and specific needs-related data. Finally, prolonged instability and uncertainty regarding Ukraine’s future is likely to further hinder the country’s economic recovery (via a lack of Black Sea access, 20 “Ukraine - Country Commercial Guide,” International Trade Administration- U.S. Department of Commerce  
21 Ibid.  
22 Natalia Datskevych, “Ukraine’s Path to Economic Powerhouse Runs Through its Rivers and Sea Ports”  
23 Ilya Timtchenko, “Ukraine’s State Sea Ports Need Private Owners to Improve”
demining efforts, and the lack of foreign investment). Against this backdrop, it is likely recovery will occur in three phases: (1) survival; (2) rapid recovery; and (3) long-term reconstruction.

**State of Russia’s Invasion (as of April 26, 2023)**

![Map of Russia's invasion](image)

*Source: Institute for the Study of War*

Despite the wartime uncertainty, it is already clear that damages and losses to date have been very disproportionately distributed across regions and sectors. Oblasts partially or fully occupied by Russian forces have sustained the most significant damage and have the highest expected reconstruction costs (see Appendix D for estimated damage and loss figures by region). Further, according to the World Bank, the territories with the highest priority for reconstruction efforts in a post-war or less intense conflict environment are concentrated in the north, including Chernihiv, Sumy, Kharkiv, and Kyiv Oblasts.  

**The toll of war will have a considerable effect on social dynamics within the country, the results of which are unclear.** For example, language could play a significant role in dividing communities. Furthermore, tensions may arise between those Ukrainians who receive financial or material aid, versus those who do not receive support, or between those Ukrainians who stayed in the country and those who have left since the February 2022 invasion. The weakened mental health of the population will also have a considerable negative impact on the country’s social dynamics amid the reconstruction process.

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24 “Ukraine Rapid Damage and Needs Assessment,” *The World Bank*, p.66
Expert Commentary: The Vastness of Ukraine's Reconstruction

Since the implosion of the Soviet Union, the U.S. has pursued a policy of promoting the independence sovereignty, and liberalization of all the post-Soviet states. In the case of Ukraine, this meant that the U.S. averaged more than $200M a year in assistance designed to promote institutional reform before Moscow attacked Ukraine in 2014. This assistance proved impactful in Ukraine’s fitful, but largely successful move towards democracy; but less so in addressing rampant corruption. Moscow’s war on Ukraine and especially its large 2022 invasion has put the focus on helping Ukraine defend itself. Given the Kremlin’s revisionist goal of restoring its influence over all the states that used to make up the Soviet Union, the U.S. has a vital interest in helping Ukraine defeat Russia by providing substantial military and economic aid. But the eventual success of Ukraine requires not just defeating Russia on the battlefield, but conducting a transformative reform as part of its reconstruction after victory. Skeptics point to the difficulties of reform over the past thirty years and downplay the prospects for long term change. That is understandable, but mistaken. There are several reasons for thinking that post-victory reconstruction could prove the key to successful reform. First is the determination of the Ukrainian people, under the pressure of Moscow’s massive war crimes, to free themselves not just of Russian troops, but the corruption that promoted Kremlin influence in Ukraine since independence. Second is the fact that the EU has offered Kyiv a clear path to membership that demands major institutional change. Third is the fact that incoming assistance program will be overseen and administered by the donor governments and institutions, in partnership with Ukrainian authorities, central and local.

None of this denies the vastness of the task. But it provides solid ground for proceeding with confidence, as well as caution. This task will require innovative thinking from many quarters. With that in mind I welcome the thoughtful contribution from this research project.

2.3: International Framework for Reconstruction

Since February 2022, coordinating support-partnerships between IFIs, national governments, and aid organizations has proven tricky. Given the extent of the devastation to civilian infrastructure, the humanitarian response – like the future reconstruction effort – has involved thousands of organizations working on hundreds of needs with varying degrees of collaboration. Accordingly, the main challenge has been developing a platform that avoids duplication, prioritizes large projects, and engages Ukrainian officials at central and local levels.

Despite early setbacks, G7 partners have agreed upon a platform to better coordinate

25 Kyiv School of Economics Program Manager, Author Interview
reconstruction efforts. The Ukraine Multi-agency Donor Coordination Platform Steering Committee constitutes the primary framework for G7 cooperation. The Steering Committee held its inaugural meeting in late January 2023 and its primary goal is to define, prioritize, and sequence future assistance to Ukraine more effectively.26 In the future, it will be essential for USAID to collaborate with Steering Committee participants, while also designing and implementing development projects that further U.S. national security and economic interests.27

While the Steering Committee’s creation is a positive step forward, coordination-related challenges persist that will complicate USAID’s future assistance to Ukraine. First, Ukraine’s reconstruction will feature millions of projects and an unparalleled degree of investment into the country. This means that coordination with regional and local Ukrainian officials will be necessary; it also means that USAID should expect its in-country personnel to wield a significant degree of agency as relates to communicating with partners on the ground. Second, managing effective coordination during the eventual transition from wartime to a post-war period will require transitioning support from the government to the private sector, while also reorienting the institutional reconstruction framework.28

2.4: Corruption and Accountability

Ukraine continues to struggle with corruption, which most interviewees view as the most significant threat to successful post-war reconstruction. The post-Soviet environment enabled land-grabbing and resulted in an opaque, oligarch-dependent political and economic structure. This dynamic produced thousands of inefficient and corrupt state-owned enterprises and poor performance on anti-corruption rankings. While some Ukrainians worry that Russian disinformation campaigns may encourage exaggerations of corruption in Ukraine, according to Transparency International, Ukraine’s Corruption Perception Index ranking was 116 out of 180 in 2022.29 Ukraine’s Business Ombudsman Council’s 2022 Q3 Report noted that most business complaints were related to tax issues, followed by concerns about law enforcement actions.30

Ukraine’s judicial system requires the most urgent reforms for the country to achieve EU accession. Rule of law must be strengthened via greater judicial accountability and independence, which would involve a transparent selection process for Constitutional Court judges. Similarly, Ukraine needs to reform its High Judicial Council, which should ensure the independence of the judiciary. The institutions available to implement anti-corruption reforms include the High Anti-Corruption Court, the Specialized Anti-Corruption Prosecution Office, the

26 “Readout of Inaugural Meeting of Ukraine Donor Coordination Platform Steering Committee,” The White House
27 Atlantic Council Senior Director, Author Interview
28 World Bank Economists, Author Interview
29 “Transparency International Ukraine,” Transparency International
30 “Q3 Quarterly Report of Business Ombudsman Council,” Business Ombudsman Council
Our interviews suggest Ukrainians believe that post-war reconstruction will be a defining moment in the country’s history. Beyond defending itself from an aggressor, Ukraine can uproot corruption and work towards EU accession. While there is debate about the potential of using U.S. development assistance to facilitate Ukraine’s greater alignment with EU standards, there is unanimity that Ukraine’s gradual EU integration would establish a more sustainable, predictable, and transparent system that promotes economic prosperity and reduces corruption.

**Expert Commentary: Civil Society's Role in Ukraine's Reconstruction**

Creating a stronger civil society has become one of the main achievements of the Revolution of Dignity in 2014. In the last nine years, Ukrainian civil society organizations' (CSOs) role in policy making and the reform process has significantly increased. The majority of reforms, such as privatization, decentralization, and public procurement reform, have happened with the intensive involvement of various CSOs.

CSOs have actively promoted open access to information, transparency, and the deployment of new IT systems. All of these ideas became major trends between 2014 to early 2022. Unbiased access to information allows independent experts to control and actively engage in changes that are taking place in society, politics, public finance, and fighting corruption. Examples include the public electronic procurement system ProZorro, an official state web portal for public finances, and the open online auction system Prozorro.Sale, a property declaration system for civil servants.

The growth of Russian aggression added new challenges for CSOs. Today, reconstruction is one of the key issues for CSOs. The total direct damages in Ukraine caused by Russia's war have reached almost $143.8 billion, according to the KSE Institute. The World Bank has increased its estimate for immediate recovery needs to $411 billion. Reconstruction will require the simultaneous delivery of hundreds of thousands of various construction projects, thousands of managers, legislative reforms, negotiations with donors, and years of effort. It cannot be achieved without the active society involvement of CSOs.

Supported by international donors, Ukrainian CSOs are participating in discussions on the priorities for the reconstruction process. They are also generating ideas and acting as watchdogs to avoid the exaggerated centralization of the decision-making process, which would lead to corruption and ineffectiveness. In the end, the Ukrainian people are the main stakeholders of the future recovery and, along with the international community, should trust in the process and its final result.

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31 Anders Aslund and Andrius Kubilius, *Reconstruction, Reform, and EU Accession for Ukraine*
2.5: Absorption Capacity

There is widespread consensus among the development experts interviewed that Ukrainian ownership will be key to the long-term efficacy of reconstruction efforts.\(^{32}\) If investment and reforms do not feature public consultation with authorities at the federal and local levels as well as civil society organizations, they will be unlikely to endure.

However, the need for public consultation will also complicate the reconstruction process. Before the war, Ukraine had never absorbed more than $10 billion in foreign investment and no more than $1.5 billion in foreign aid in a single year.\(^{33}\) Even estimates on the lower end of the spectrum of reconstruction costs indicate that foreign investments into the country will be orders of magnitude greater than $10 billion over a multi-year period. For USAID, too, the degree of foreign assistance to Ukraine will be unprecedented. Between 2021 and 2022, USAID assistance to Ukraine increased 40-fold, largely due to the scale of the direct budgetary support provided following the February 2022 invasion.\(^ {34}\)

The unprecedented size of Ukraine’s absorption capacity gap poses a significant threat to the efficacy and sustainability of the reconstruction process. It appears clear that the G7 platform should serve as the venue for donors to discuss and coordinate how to enhance absorption capacity in the public and private sectors. Successful reconstruction will likely have to involve consulting and empowering leaders, civil society actors, and NGOs at the regional and local levels.\(^ {35}\) Further, there is growing consensus that the Ukrainian-led reconstruction process must feature robust foreign direct investment and public-private partnerships, which bring private capital, best business practices, and managerial expertise to reconstruction projects.\(^ {36}\) The business councils and private sector stakeholders interviewed for this report expressed a strong willingness and ability among private firms to contribute to Ukraine’s speedy reconstruction, in line with its deeper EU integration.\(^ {37}\)

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**Expert Commentaries: The Private Sector’s Role in Reconstruction**

\(^{32}\) World Bank Economists, Author Interview
EBRD Program Manager, Author Interview
International Monetary Fund Program Manager, Author Interview

\(^{33}\) Kyiv School of Economics Program Manager, Author Interview
“Ukraine: Foreign Aid,” *The Global Economy*

\(^{34}\) “U.S. Foreign Assistance: Ukraine,” *Foreign Assistance*

\(^{35}\) IMF Official, Author Interview


\(^{37}\) U.S.-Ukraine Business Council President, Author Interview
AmCham Ukraine President, Author Interview
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<th>Morgan Williams, President &amp; CEO of the U.S.-Ukraine Business Council (USUBC)</th>
<th>Tetyana Prokopchuk, Vice President of the American Chamber of Commerce in Ukraine (AmCham)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As the planning for rebuilding continues and as real development projects are activated, private businesses will play a key and leading role, especially in the long run. Private businesses do not just develop in Ukraine, arrive in Ukraine, do their work and then leave. They are not like most government organizations from many countries, and other short-term entities that say they are interested in helping rebuild Ukraine. The government of Ukraine, the U.S., Europe, and others need to work closely together to find new and creative ways to support the private business community during the long period of rebuilding. Support needs to be in the financing area, creating a better environment for business, building a solid, strong legal system, fighting against corruption, starting public/private partnerships, and much more. The private sector needs to be taken very seriously and supported more by the public sector. The public sector cannot rebuild Ukraine without being a true partner with private business. This has not happened, in the past, with many programs in other countries. The Amazing Power of Private Business can rebuild and create a much more prosperous Ukraine. The Amazing Power of Private Business can provide the leadership, the investment, the skills, and other resources needed to rebuild and move Ukraine forward. Starting now, let's fully utilize the Amazing Power of Private Business. FULL SPEED AHEAD.</td>
<td>Business in Ukraine demonstrates tremendous resilience and is inspired by the lionhearted heroes on the frontlines fighting for Ukraine’s freedom and future. 70% of AmCham members are fully operational despite the full-scale war. Our message is crystal clear: Ukraine is open for business. According to an AmCham Ukraine survey, 87% of our members are ready to actively participate in Ukraine’s post-war economic rebuilding. AmCham experts have developed 10 Priorities for Ukraine's Post-War Economic Recovery – the highest strategic priorities for the business community in Ukraine. Among them is the acceleration of Ukraine’s membership in the European Union by approximating national legislation in competition, customs, healthcare, IPR, media, and other spheres. We welcome the historic decision granting European Union candidate status to Ukraine. It launches a new trajectory of Ukraine's GDP growth and will provide a massive morale boost for post-war economic transformation and reform implementation. We call on global companies to prioritize Ukraine in their business plans and to be a part of the recovery, as the role of the private sector in Ukraine’s post-war reconstruction and recovery will be immense.</td>
</tr>
</tbody>
</table>

2.6: Decentralization

Decentralization has been an important aspect of Ukraine’s deeper EU integration and will
play a fundamental role in Ukraine’s reconstruction. However, decentralization has not yet received sufficient attention among international donors. For instance, specifics on how funding or development projects could be coordinated at the municipal level were almost entirely absent from the Ukrainian government’s recovery plan at the Lugano Conference. Though this is perhaps logical under the current Martial Law, a lack of collaboration with state and local stakeholders stands to jeopardize the efficacy of long-term infrastructure and economic development projects across the country. Moreover, a lack of distributed coordination also risks the maintenance of political support for dispersed reconstruction efforts. Finally, the ratio of federal-to-local employees, which has remained near constant over time, may have to decrease to ease a future overreliance on central government officials during reconstruction.

Further, though implementing a speedy decentralization process in the country during the war may be risky, it could increase Ukraine’s absorption capacity across the country. For example, Ukraine’s banking system is currently not prepared for a significant influx of funding. Decentralization could also enable greater competition, accountability, and public buy-in. With frequent and consistent feedback loops, iterative funding systems across the country could become more efficient insofar as local governments are more attuned to local problems.

### Central vs. Local Government Workforce Sizes over Time

![Central vs. Local Government Workforce Sizes over Time](image)

*Source: OECD*

Per the European Commission’s February 2023 Analytical Report, Ukraine has “some level of preparation” regarding regional policy and coordination of structural instruments. More specifically, the European Commission highlights a lack of legislative enforcement vis-à-vis decentralization and a need for improved financial management of regional development programs as key outstanding issues. If Ukraine’s federal government is

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38 European Union Diplomat, Author Interview  
39 “Ukraine’s National Recovery Plan,” *Ukraine Government*  
40 ANTS Technical Expert, Author Interview  
41 “Analytical Report on Ukraine’s Alignment with EU Acquis,” *European Commission*, p. 61  
42 Ibid.
the sole recipient of most funding from international donors, the financial gap between the central and regional bodies would widen and backsliding on decentralization efforts would be likely. This would harm the regional integration of the domestic and international private sectors and impede healthy competition between municipal and regional governments.  

**Expert Commentary: Guidance for Future Decentralization in Ukraine**

Decentralization must be a priority for any postwar reconstruction framework. Three main issues are:

1. Clearly separating powers between local self-government bodies and local executive bodies. A horizontal separation of powers between self-government and executive bodies as well as a vertical division of powers between levels of self-government will also be necessary.

2. Legislatively regulating the procedure for resolving issues of administrative and territorial design. Relevant draft laws on the procedure for the formation, liquidation, establishment, and change of the boundaries of territorial units of Ukraine include bill No. 8263 or and No. 4664.

3. Enshrining decentralization into the Ukrainian Constitution.

According to a representative from the Ministry of Regional Development of Ukraine, high-quality work is being carried country-wide, with the exception of problems in the Sumy and Zaporizhzhia regions. Issues in these regions include a lack of regional self-government staff, the absence of oblast council meetings, and intentional sabotage from opposition parties.

There are therefore a number of challenges that should be addressed in post-war decentralization efforts:

1. It is necessary to guarantee the restoration of full-fledged local self-government in the de-occupied territories, if the legally elected head of the community council, council deputies, and the executive apparatus remain alive and capable.

2. If there are no such persons in the liberated territories or if they have removed themselves from power and the military maintains control, it will be necessary to determine the time limits and individual conditions of elected council restoration.

3. In some places, military administrations are conflicting with legitimate self-government. It is therefore necessary to adopt Draft Law No. 4298 "On Amendments to the Law of Ukraine ‘On Local State Administrations’" to reform the territorial organization of executive power.

**SECTION 3: USAID AND EU STANDARDIZATION**

43 “Maintaining the Momentum of Decentralisation in Ukraine,” OECD, p. 278
3.1: Outline

In this section, we will first assess at a high level whether – and, if so, to what degree – USAID’s future assistance to Ukraine should explicitly work to expedite the country’s EU accession.

We will then examine each sector of interest (agriculture, energy, and tech) in greater detail, following the structure below:

1. Context
2. State of Standardization in the Sector
3. USAID’s Capacity to Support the Sector
4. Advantages and Disadvantages of Aligning with EU Standards

3.1.1: Background

While adhering to EU standards could expedite Ukraine’s EU accession and help the country ‘build back better,’ it remains unclear whether USAID should prioritize programming explicitly related to EU standards due to the risks of bureaucratic burden and delays in recovery.

Though Ukraine was granted formal EU Candidate Status in June 2022, the European Commission’s opinion on Ukraine's application highlighted several reforms that must be implemented before the commencement of formal EU accession negotiations. At a high level, the Commission’s report highlights the judicial and prosecutorial systems as the foremost vehicles of corruption in Ukraine that will hinder further EU integration. At a granular level, standardization across several industries is also a necessary pre-condition of Ukraine’s accession.

More specifically, the European Commission’s February 2023 report analyzed Ukraine’s alignment with EU standards across key industries vis-à-vis the 33 EU acquis or chapters. The report evaluated Ukraine’s level of preparation to meet EU standards in several particular areas and classified them into one of five categories of preparation: (1) early stage, (2) some level, (3) moderate level, (4) good level, and (5) well advanced. The U.S. and its partners and allies support Ukraine’s Euro-Atlantic aspirations. However, it is unclear to what degree USAID’s future development assistance to Ukraine should aim to increase the country’s level of preparation to meet EU standards. Most interviewees agree that reconstruction and EU accession are expected to be distinct yet interrelated processes.

To this end, USAID must consider several high-level advantages and disadvantages related to explicitly facilitating Ukrainian firms’ alignment with EU standards:

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44 “Opinion on Ukraine’s Application for Membership of the European Union,” *European Commission*, p. 19
45 IMF Official, Author Interview
   World Bank Economists, Author Interview
Advantages

**Improved Business Climate:** Greater adherence to EU standards would facilitate a faster accession process and improve Ukraine’s long-term economic prospects by deepening its economy’s integration with the European market. Even before its full accession, furthering alignment with the EU would increase transparency and enhance the overall business and investment climate. All interviewees view Ukraine’s candidate status as having increased general investment appetite and the private sector’s willingness to invest in Ukraine. Moreover, from a sample of 25 USUBC members surveyed for this report, there was strong support for Ukraine’s further EU integration and accession. These 25 members demonstrated an average preference of 8.12 on a 10-point scale when asked if Ukraine’s further EU integration would hinder (1) or advance (10) their ability to conduct business in Ukraine. Surveyed businesses also indicated a preference for international donors to focus on reforming the judicial system (8.28 out of 10), public procurement process (6.96) and land management system (6.85).

**Streamlined International Coordination:** Promoting greater adherence to a single set of EU standards, rather than U.S., international, or alternative standards, may help to unify Ukrainian-led reconstruction efforts. Despite the G7’s Donor Coordination Platform, coordination remains tricky due to risks of duplication, local absorption limits, and divergent donor capabilities and priorities. The lengthy and imperfect reconstruction efforts against the backdrop of EU accession in the Balkans reflect the problems associated with divergent donor priorities and differing standards regimes. Explicitly advancing EU standardization processes in key sectors may mitigate the risk of comparable fragmentation in the Ukrainian case.

**Enhanced National Security:** Supporting Ukrainian firms’ alignment with EU standards has the potential to show solidarity with EU partners as a bulwark against the influence of strategic competitors involved in the reconstruction process. While the primary objective of post-war reconstruction should be to rebuild and transform Ukraine’s economy and institutions, U.S. and allied national security interests in reconstruction cannot be neglected. The reconstruction effort must be global in nature, yet critical infrastructure projects will ideally be conducted in line with U.S. security interests. Examples of critical infrastructure projects in Ukraine with relevant national security implications include railways and energy distribution networks.

Disadvantages

**Prolonged Reconstruction:** Most interviewees expect Ukraine’s EU accession process to last

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46 Program Manager at International Finance Corporation, Author Interview
CEO at Ukraine Invest, Author Interview
47 U.S.-Ukraine Business Council Membership Survey Responses, Author Survey
48 Program Manager at the Centre for European Policy Studies, Author Interview
49 Manager at CSIS, Author Interview
between 10-20 years and see a substantial trade-off between prioritizing immediate post-war recovery and facilitating EU standardization. While concentrating on EU accession is vital, USAID may fulfill more urgent needs by forgoing initiatives explicitly related to EU standards and instead administering assistance unrelated to EU standards alignment.

**Domestic Backlash:** It appears likely that U.S. assistance to Ukraine will become more politicized over time. U.S. aid that explicitly promotes EU standards would draw intense scrutiny from within the U.S. interagency as well as with members of the U.S. Congressional Appropriations Sub-Committees on State, Foreign Operations, and Related Programs. Novel USAID programs that reference facilitating Ukrainian firms’ alignment with EU standards would likely be met with backlash and could jeopardize the Agency’s capacity to work effectively in Ukraine.

**Small Business Disruption:** While larger companies that already operate in the EU appear to largely support EU accession and a greater alignment with EU standards, small and medium-sized businesses in Ukraine may be harmed and unable to meet more stringent EU standards. More specifically, small and medium-sized U.S. businesses with current economic interests in Ukraine may object to any USAID-led standards-oriented initiatives, due to the perceived risk of losing market access and competitiveness in the event of Ukraine’s deeper EU integration.

### 3.2: U.S. Assistance to Ukraine’s Agriculture Sector

#### 3.2.1: Context

*Given the importance of Ukraine’s agriculture to (1) domestic economic stability, (2) Ukraine’s export basket, (3) sustainable employment, and (4) global food security, supporting Ukraine’s agricultural producers and other relevant agricultural stakeholders must be a chief priority for USAID, despite the risk of effort duplication among international donors.*

**Before the full-scale invasion, the agriculture industry was an essential part of Ukraine’s economy.** Pre-invasion, the sector was the third most important in terms of GDP, comprising about 20-22% of real GDP, behind only the services and industry sectors. As of 2020, the sector served as a source of livelihood for approximately 20% of the country’s workforce and
generated 41% of total exports.  

Ukraine is one of the world’s largest agricultural producers and importers and has a significant effect on global food price stability. Before the invasion, Ukraine was the single largest exporter of sunflower seeds and second-largest producer of sunflower oil and meal, accounting for more than 27% of global production for all three products. As of 2022, the country was also one of the world’s largest producers of corn, wheat, and barley. Its centrality to the world’s food system is largely why global food prices increased by 12.6% in the first month of the war, with the price of some commodities like cereals still well above historical averages.  

Ukraine Agricultural Production and Exports (2021/2022)

<table>
<thead>
<tr>
<th>Product</th>
<th>Production</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume (1,000 MT)</td>
<td>Rank Among Global Producers</td>
</tr>
<tr>
<td>Corn</td>
<td>41,900</td>
<td>#6</td>
</tr>
<tr>
<td>Wheat</td>
<td>33,000</td>
<td>#7</td>
</tr>
<tr>
<td>Sunflower</td>
<td>17,500</td>
<td>#1</td>
</tr>
<tr>
<td>Barley</td>
<td>9,900</td>
<td>#4</td>
</tr>
<tr>
<td>Sunflower Oil</td>
<td>5,676</td>
<td>#2</td>
</tr>
<tr>
<td>Sunflower Meal</td>
<td>5,452</td>
<td>#2</td>
</tr>
<tr>
<td>Rapeseed</td>
<td>3,016</td>
<td>#6</td>
</tr>
</tbody>
</table>

Source: USDA (World Agricultural Supply and Demand Estimates)

The invasion has had devastating consequences for Ukrainian agriculture production and exports. According to a report from the UN’s Food and Agriculture Organization (FAO), the war has already resulted in damages between $2.2 - $6.6 billion, including widespread damage to irrigation infrastructure, storage, machinery, in-port infrastructure, greenhouses, field crops, livestock, and processing units. More recently, the World Bank’s Updated Needs Assessment estimated the sector’s short-term recovery costs at $10.2 billion, with an additional $19.5 billion in long-term costs. Small-scale rural producers, who account for 32% of total agriculture production and 50% of livestock production, have likely felt the brunt of this damage. 

55 “Ukraine: Export Basket in 2020,” Harvard Center for International Development
“Ukraine Rapid Damage and Needs Assessment,” The World Bank, p.60
56 “Ukraine Agricultural Production and Trade”, U.S. Department of Agriculture
57 “World Cereals Price Index,” Trading Economics
58 “Impact of the War on Agriculture and Rural Livelihoods in Ukraine,” UNFAO, p. 17
59 “Ukraine Rapid Damage and Needs Assessment,” The World Bank, p. 23
60 “Impact of the War on Agriculture and Rural Livelihoods in Ukraine,” UNFAO, p. 29
December FAO survey indicates that access to seeds, fertilizers, animal feed, and electricity is a primary need for small-scale farmers.\textsuperscript{61} By contrast, large agriculture producers (defined as companies with 10-50 hectares) have been less affected, and have greater access to financing and comparatively safe, arable land.\textsuperscript{62} Finally, recent reports indicate that accruing immediate hard currency earnings will be essential to the near-term survival of grain companies.\textsuperscript{63}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{ukraine_grain_production_exports.png}
\caption{Ukraine’s Grain Production & Exports (millions of tons)}
\end{figure}

\textit{Source: Reuters}

3.2.2: State of Standardization in the Sector

\textit{While Ukraine’s adoption of the DCFTA in 2014 has facilitated progress in aligning the country’s agriculture sector with the EU’s common agriculture policy (CAP), significant progress still needs to be made, particularly for small-scale agricultural producers.}

\textit{Per the European Commission’s February 2023 Analytical Report, the agriculture sector is at an “early stage of preparation” for accession.}\textsuperscript{64} Key shortcomings to Ukraine’s full alignment with CAP include the lack of an effective land registry body and the need to fully adopt EU food safety measures.\textsuperscript{65} Moreover, adhering to the EU’s green agriculture production standards will be especially challenging for small, struggling producers. These producers have

\begin{itemize}
\item \textsuperscript{61} Ibid.
\item \textsuperscript{62} Atlantic Council Senior Fellow, Author Interview
\item \textsuperscript{63} Thomas, Patrick, “Ukraine Farms Attract Money and Help From Allies, Top Food Companies”
\item \textsuperscript{64} “Analytical Report on Ukraine’s Alignment with EU Acquis,” \textit{European Commission}, p. 55
\item \textsuperscript{65} Ibid.
\end{itemize}
grown more essential for domestic food security during the war but are facing severe levels of indebtedness and short-term liquidity challenges that current IFI initiatives have not yet addressed.66

Ukraine’s progress in aligning its agricultural producers with EU standards has stalled since February 2022. As a WTO member since 2008, Ukraine has already met some of the WTO-adjacent provisions in the DCFTA, such as the prohibition of import and export restrictions and disciplines on state trading.67 However, Ukraine does not yet comply with many EU food safety, veterinary, and phytosanitary requirements.68 EU-Ukraine agricultural trade also remains hampered by a lack of standardization in rail gauges, rail cars, and grain hoppers, an issue that may be partially resolved in the future thanks to recent EU investments in ‘solidarity lanes.’69 Finally, IFIs including the World Bank have emphasized the need for international donors to support “legislation and policies in line with the EU law, including EU standards and the acquis communautaire.”70

3.2.3: USAID’s Capacity to Support the Sector

USAID has the capacity to act as a key partner for IFIs and donor agencies in reconstructing the agriculture industry, though a variety of adjacent risks stand to hinder meaningful progress.

USAID has the ability to serve as one of the most important actors in the reconstruction of Ukraine’s agriculture industry. Since February 2022, USAID has provided over $800 million in development assistance to Ukraine, including over $100 million to agricultural stakeholders.71 This makes USAID the largest national donor to Ukraine’s agriculture sector to date.72

Specifically, USAID has established an institutional mechanism to shape the revival of Ukraine’s agricultural sector: the Agriculture Resilience Initiative (AGRI-Ukraine). As the primary vehicle for USAID’s engagement with small and medium-sized farmers, AGRI-Ukraine has provided critical inputs, access to financing, drying, storing, and processing support to over 13,600 farmers (or about 30% of all registered farmers in Ukraine) since February 2022.73

Though AGRI-Ukraine is the linchpin for USAID support to agricultural producers, various adjacent challenges stand to hinder Ukrainian agricultural production and exports. The most important adjacent challenges to the agriculture sector include:

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66 “Impact of the War on Agriculture and Rural Livelihoods in Ukraine,” UNFAO, p. 21
67 “Description of Policy Developments,” OECD
68 Kyiv School of Economics Program Director, Author Interview
69 Caitlin Welsh, “Rebuilding Ukraine’s Agriculture Sector: Emerging Priorities”
70 Ukraine Rapid Damage and Needs Assesessment,” The World Bank, p. 14
71 “Agri-Ukraine Update,” USAID
72 “Ukraine Support Tracker,” Kiel Institute for the World Economy
73 “One Year Later: Helping Ukraine Win the War and Build Lasting Peace,” USAID
1. Inefficient implementation of the Black Sea Grain Initiative, with a current decline in agricultural exports of 16% year-over-year\textsuperscript{74}
2. The prevalence of landmines in about 5% of all arable land\textsuperscript{75}
3. Transportation costs that are 6x higher than before the war\textsuperscript{76}
4. The possibility of quick and ungoverned privatization of agricultural land

\textbf{3.2.4: Advantages and Disadvantages of Aligning with EU Standards}

\textit{Funding and assistance related to bringing Ukrainian agricultural stakeholders into alignment with the EU’s CAP could enhance annual output and marginally expedite the accession process. However, explicitly standards-oriented programming has several potential disadvantages, such as delaying the sector’s revival and misusing USAID’s in-house expertise.}

\textbf{Advantages}

\textbf{Potentially Speedier EU Accession:} The agricultural sector could become a hindrance to Ukraine’s EU accession beyond the current 10-20-year accession process consensus. Moreover, USAID has experience on some of the sticking points to standards alignment: namely, providing capital and technical assistance to (1) develop more robust land registry structures; (2) improve production and processing regulatory bodies; and (3) help small-scale farmers transition to greener production standards. USAID programming that seeks to resolve these issues via partnership with Ukrainian agricultural authorities, producers, and other relevant stakeholders may advance Ukraine’s EU’s accession prospects, timeline, and long-term economic prosperity.

\textbf{Increased Agricultural Output:} Most agricultural experts focused on Eastern Europe agree that deeper EU integration and eventual EU accession stands to increase Ukrainian producers’ output across key sub-sectors, including wheat, barley, and sunflower oil.\textsuperscript{77} While enhanced output estimates range widely by expert (and by sub-sector), there is consensus that the net output increase would be of meaningful benefit to the Ukrainian economy and European food prices. Deeper European integration would also facilitate Ukraine’s capacity to become a net exporter of more complex, value-added products including poultry, soybeans, and soybean oil, which would make a moderate contribution to Ukraine’s macroeconomic complexity and resiliency.\textsuperscript{78}

\textbf{Improved Business Environment:} Regardless of their current extent of involvement in Ukraine, U.S. agri-businesses of varying sizes agree on three primary concerns vis-à-vis agricultural investments in Ukraine: (1) corruption in judicial and procurement processes; (2) farmers’ lack

\textsuperscript{74} “Ukraine Rapid Damage and Needs Assessment,” \textit{The World Bank}, p. 30
\textsuperscript{75} Gorodnichenko et al., “Rebuilding Ukraine: Principles and Policies, Paris Report 1”
\textsuperscript{76} Kyiv School of Economics Program Director, Author Interview
\textsuperscript{77} Executive at Agriculture Business, Author Interview
\textsuperscript{78} Expert at German Institute for International and Security Affairs, Author Interview
\textsuperscript{79} “New Products Exported, 2005 - 2020,” \textit{Harvard Center for International Development}
of access to financing; and (3) political risk. The business and financial experts interviewed for this PAE expressed general support for USAID assistance to Ukraine that seeks to resolve these three issues because of how it would enhance the domestic investment climate.

Disadvantages

Misguided Priorities: There is significant risk that standards-oriented programming may fail to support producers and stakeholders in line with their short and long-term needs given the extent of damage to Ukraine’s agricultural land, machinery, and adjacent industries. Potential short-term needs – including access to financing, excessive insurance costs, mined land, and the lack of compatibility between European railway systems – may realistically be medium to long-term challenges, as well. If so, then these issues – not the degree of alignment with EU standards – constitute the main threats to sustainable growth for the Ukrainian agricultural sector.

European Railway Gauge Systems

Lack of Technical Expertise: It is important USAID adapt its long-term reconstruction initiatives to fit its institutional strengths and to contextualize its programs within the broader international reconstruction effort. EBRD has already expressed a commitment to prioritizing

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79 Executive at Agriculture Business, Author Interview  
Senior Manager at Agriculture Business, Author Interview  
U.S.-Ukraine Business Council Membership Survey Responses, Author Survey  
80 Ibid.  
81 Kyiv School of Economics Program Director, Author Interview  
Caitlin Welsh, “Russia, Ukraine, and Global Food Security: A One Year Assessment”
long-term assistance to Ukrainian agricultural producers, with an emphasis on EU alignment. Without clear coordination with IFIs and national donors, USAID’s standards-oriented programs may duplicate these efforts while failing to support other key barriers to agricultural productivity, such as restoring transportation infrastructure. In this vein, USAID likely lacks the institutional know-how to fund and develop effective programming focused on EU agricultural standards and may benefit from European donors taking the lead on EU standardization in the sector.

**U.S. Agribusiness Interests:** Misalignment between U.S. and EU agricultural standards has often led to trade disputes in recent years, especially over non-tariff barriers to agricultural trade involving Sanitary and Phytosanitary (SPS) measures. A recent study from the USDA’s Economic Research Service found that SPS regulations have a significant impact on U.S. firms’ ability to export to EU member states. According to the study, the tariff equivalent of these measures ranges from 23% to 102% depending on the product, with poultry, pork, and corn as the most impacted products. Explicitly facilitating Ukraine’s adherence to the EU’s regulatory regime vis-à-vis SPS measures would therefore harm U.S. agribusinesses’ combined $129 million in exports to Ukraine (as of 2019) and cause some frustration among exporters.

**Food Export Ambiguity:** It remains unclear how expediting Ukraine’s EU integration and eventual EU accession might impact the export market destinations of Ukrainian agricultural products. The longer businesses in Ukraine are unable to seamlessly export agricultural products around the world via the country’s Black Sea ports, the more robust overland rail infrastructure for food transportation will become. The EU accession process is forecast to continue expanding cross-border trade of agricultural goods that was commenced with the signing of the DCFTA. This will likely increase the share of Ukrainian agricultural exports to Europe (rather than elsewhere). As a result, an overly speedy EU accession process may cement sustained higher-than-average food prices in food insecure regions that were dependent upon Ukrainian agricultural exports before the war. Nevertheless, it is difficult to predict how Ukraine’s overall agricultural exports to food insecure regions may change. Such predictions involve significant uncertainty, are dependent upon the war’s outcome, and pose less of a risk if EU integration boosts annual output as well as total exports of wheat and cereals.

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82 Anastasia Dolmatova, “EBRD Launches Digital Education Platform for Agribusinesses in Ukraine”
83 Anonymous, Author Interview
84 Anonymous, “Ukraine,” United States Trade Representative
85 Executive at Agriculture Business, Author Interview
86 Tamar Ostashko et al., “Evaluation of the Results and Analysis of the Impact of the DCFTA with the EU on Agricultural Trade in Ukraine,” p. 86
87 World Bank Economists, Author Interview
3.3: U.S. Assistance to Ukraine’s Energy Sector

3.3.1: Context

The modernization of Ukraine’s energy sector will be integral to reconstruction. A more stable and diversified grid would enhance domestic prosperity and security, while Ukraine’s deeper EU integration would bolster EU member states’ access to affordable energy. U.S. interests are largely aligned with deeper EU-Ukraine energy integration.

Before the 2022 invasion, Ukraine’s economy was highly energy intensive and dependent upon hydrocarbons, yet there were signs of change. As of 2019, coal comprised Ukraine’s largest energy consumption source (32%), followed by natural gas (26%) and nuclear (25%).

Natural gas has historically been the largest energy source in Ukraine, which still had ~10 billion cubic meters in gas storage as of November 2022. In line with its Euro-Atlantic aspirations, Ukraine adopted a new energy strategy in 2017 that resulted in a five-fold increase in wind and solar energy production (as of 2022), deepened interconnectivity with the European Network of Transmission System Operators for Electricity (ENTSO-E), and continued its transition away from Russian gas and oil imports.


![Energy Consumption Chart]

Source: Centre for Economic Policy Research

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89 “Statement by Prime Minister of Ukraine Denys Shmyhal at a Government Session,” Ukraine Government
Since February 2022, Russia has caused significant damage to Ukraine’s energy infrastructure by targeting key assets. Though it appears that Ukraine’s coal industry has been largely destroyed, precise damage estimates are challenging to determine because most mines are in territories not under government control.¹¹ Gas production and transmission infrastructure as well as oil refineries and fuel depots have sustained over $3 billion in damage to date, with hydrocarbon imports from Hungary, Slovakia, and Poland surging since early 2022.²² Though gas demand for heating and electricity has fallen by nearly 40% since the start of the war, at least 12 million Ukrainians experienced prolonged periods with no or limited electricity this past winter due to widespread transmission network damage.³³

Most experts interviewed for this PAE expressed skepticism about Ukraine’s ability to meet its target of having 25% of its energy mix come from renewables by 2035.⁴⁴ In 2018, Ukraine’s renewables (mainly wind and solar power) made up just 2% of the total energy mix.⁵⁵ The country made some progress in the following years, with wind and solar power accounting for 5% of the total energy mix in late 2021.⁶⁶ However, renewable sources’ contributions to the overall energy mix have diminished significantly due to the widespread destruction of infrastructure in the south, though concrete estimates are difficult to establish.⁷⁷

Nuclear energy production and hydropower expansion will be key challenges for modernizing the energy sector; they should not be seen as competing energy sources.⁸⁸ The June 2022 nuclear fuel agreement between Ukraine and Westinghouse will play an important role for the country’s post-war energy mix as Ukraine further reduces its dependence on Russian energy supplies. Moreover, Ukraine’s hydropower plants totaled roughly 5.8% of all electricity production in 2021.⁹⁹ Expanding hydropower capacity will be an important part of the country’s national reconstruction blueprint, though there is debate over the extent to which it can contribute to the overall energy mix by 2035.¹⁰⁰ The most recent hydropower capacity estimates suggest that hydropower could contribute up to 13% of Ukraine’s overall energy mix, though the EU is seen as perhaps overly optimistic about its future potential.¹⁰¹

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¹¹ Timothy Fadek, “How War Has Devastated Ukraine’s Coal Industry”
³³ Ben Cahill and Leslie Palti-Guzman, “The Role of Gas in Ukraine’s Energy Future”
“Ukraine Rapid Damage and Needs Assessment,” The World Bank, p. 79
⁴⁴ “Renewable Energy Generation Is a Key Priority for the Ukrainian Energy Sector,” U.S. Trade Association
“Ukraine 2050 Low Emission Development Strategy,” UNFCCC
⁵⁵ Igor Kossov, “Ukraine’s Renewable Potential and Competition
⁶⁶ “Share of Electricity Production from Wind, 2022,” Our World in Data
⁷⁷ Ben Cahill and Leslie Palti-Guzman, “The Role of Gas in Ukraine’s Energy Future”
⁸⁸ DiXi Group Executive, Author Interview
⁹⁹ “Ukrainian Energy Sector Evaluation and Damage Assessment – IV,” Energy Charter
¹⁰⁰ Ibid.
¹⁰¹ “Ukraine – Big Plans for Hydro,” Andritz
Kyiv School of Economics Program Manager, Author Interview
### 3.3.2: State of Standardization in the Sector

The 2011 Energy Community Treaty between Ukraine and the EU provides a sturdy foundation for Ukraine’s alignment with EU energy standards. However, outstanding issues remain, especially over regulators’ independence and the lack of emergency oil stocks.

**Per the European Commission’s February 2023 Analytical Report, Ukraine’s energy sector is at “a good level of preparation” for accession.** When Ukraine signed the Energy Community Treaty with the EU in 2011, it committed to abide by EU energy laws and regulations. The Energy Community Treaty also dictated that Ukraine would engage in energy market liberalization in line with the EU acquis governing energy production, network infrastructure, and efficiency. Ukraine’s delays in aligning with the EU acquis primarily relate to the independence of its National Energy and Utilities Regulatory Commission, which has been criticized for its non-transparent appointment process.

Beyond regulatory independence, several other issues currently restrict Ukraine’s full alignment with EU energy standards. First, the country has yet to establish a legal framework for compulsory emergency oil stocks, as required by the Oil Stocks Directive. It remains unclear whether or how the post-invasion transition to oil imports will affect Ukraine’s position with regard to the Directive. Second, cross-border electricity trade has been impeded during the war, with uncertainty about the timeline for Ukraine’s further integration into the ENTSO-E. Finally, Ukrainian authorities must strengthen state capacity to conduct energy audits of large companies, adopt proposed energy efficiency legislation, and implement Euratom Directives on nuclear safety before EU accession would be possible.

### 3.3.3: USAID’s Capacity to Support the Sector

Though European development institutions will likely take the lead in the reconstruction and modernization of the energy sector, USAID may be able to play an influential role by focusing on select issues that will expedite Ukraine’s energy resilience and EU integration.

**Given the size, complexity, and importance of the energy sector, international donors such as USAID will have some flexibility in how they support the sector.**

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102 “Analytical Report on Ukraine’s Alignment with EU Acquis,” *European Commission*
103 Ibid., p. 46
104 Ibid. p. 46-47
105 Ibid. p. 47
106 Ibid. p. 49
107 “Ukraine Overview,” *EBRD*
billion in revenues from energy sales to the European Union.\textsuperscript{108} This would also provide clear benefits to the EU member states’ access to affordable energy. To this end, it is highly likely that European and Ukrainian reconstruction stakeholders will take a leading role in the revival of the energy sector, with USAID taking a secondary (but potentially influential) role in the sector.

**Donor Country Funds Allocation by Sector (in millions of €)**

![Donor Country Funds Allocation by Sector](image)

Source: EBRD (December 2022)

There are several energy-related issues where USAID may be able to wield outsized influence in the recovery and reconstruction of Ukraine’s energy sector:

1. Assistance to state-owned energy enterprises such as Energoatom, Ukrenergo, or Ukrhydroenergo, with an emphasis on modernization and educating young engineers to replenish the country’s highly educated stock of aging engineers.
2. Collaboration with IFIs and other donors on alignment with the Oil Stocks Directive.
3. Coordination with international partners on reforms related to judicial corruption and a lack of public access to information, which enable overstated losses, kickbacks, and thwart competition in the sector.\textsuperscript{109}

\textsuperscript{108} Tom Balmforth, “Ukraine Eyes Billions in Euros from Europe Electricity Exports”

\textsuperscript{109} “Country Development Cooperation Strategy, 2019 - 2014,” USAID
4. Utilization of Ukraine’s vast natural gas reserves, which would require reviving gas production and ensuring equal access to extraction licenses and post-war geological data.\textsuperscript{110}

3.3.4: Advantages and Disadvantages of Aligning with EU Standards

Deepening Ukraine’s integration with the EU’s energy grid and its alignment with EU energy standards offers several advantages, including greater domestic prosperity, renewables sector growth, and progress toward the EU’s goal of energy independence.

Advantages

**Economic and Security Benefits:** Further integrating Ukraine’s grid with the EU’s would have major benefits for the U.S. By continuing to reroute Ukraine from Russia’s system to the EU’s, the U.S. would increase regional security and Ukrainian sovereignty. It would also increase domestic production capacity in the EU, decrease oligarchic influence, and enhance transparency, stability, and competition in the sector. For instance, a legal environment that facilitates greater competition would lessen the influence of DTEK, which is owned by Ukraine’s richest oligarch, Rinat Akhmetov, and which generated roughly 20% of Ukrainian electricity in 2019.\textsuperscript{111}

**Increased Renewables Output:** As the largest country in Europe in terms of land area, Ukraine has a range of terrains and substantial renewable potential. The experts interviewed for this PAE largely agree that Ukraine could eventually become a noteworthy producer of green energy with export potential to the EU.\textsuperscript{112} However, there was substantial disagreement about realistic timelines for renewables to comprise 25% of Ukraine’s energy mix, with predictions varying between 15-40 years.\textsuperscript{113} Nonetheless, there was consensus that deeper EU integration and eventual EU accession would catalyze renewable energy production and increase the odds of Ukraine becoming a net energy exporter to the EU. This would in turn strengthen Ukraine’s economy and energy independence while expanding EU production capacity.

**Diversified Energy Mix and Decentralized System:** Ukraine’s energy mix will become more diverse as the country aligns with EU standards, driven in large part by the eventual growth of renewables.\textsuperscript{114} Furthermore, by making the energy market more transparent, hydrocarbon-heavy

\textsuperscript{110} Atlantic Council Senior Director, Author Interview
\textsuperscript{111} Igor Kossov, “New Energy Market Brings Controversy”
\textsuperscript{112} EBRD Program Manager, Author Interview, 20 Jan 2023, Cambridge, MA.
\textsuperscript{113} AmCham Ukraine President, Author Interview
\textsuperscript{114} Atlantic Council Senior Director, Author Interview
\textsuperscript{115} Atlantic Council Senior Fellow, Author Interview
\textsuperscript{116} World Bank Economists, Author Interview
\textsuperscript{117} “Ukrainian Energy Sector Evaluation and Damage Assessment – IV,” Energy Charter
\textsuperscript{118} “Ukraine 2050 Low Emission Development Strategy,” UNFCCC
firms will wield less influence, which will increase the decentralization and resiliency of the grid. Finally, interviewees suggested a decentralized approach would also be more efficient because local governments have a more nuanced understanding of their energy needs. A decentralized energy system would make Ukraine’s energy system more resistant to future Russian attacks. Ukraine’s current regional transmission systems are opaque and prone to corruption. A more transparent and decentralized system would also enable Ukraine to better save energy by decreasing demand and increasing efficiency.

Disadvantages

**Misaligned Nuclear Energy Priorities**: Traditionally, the EU and U.S. have disagreed over the use of Ukraine’s nuclear energy production, due to some EU member states’ environmental concerns. This misalignment could inhibit Ukraine from developing a realistic, clear, and long-term strategy for achieving energy independence due to nuclear energy’s importance to its energy mix. However, due to Russia’s full-scale invasion, EU countries, including Germany, have at least temporarily become more lenient towards the use of nuclear energy production in the EU and Ukraine.

3.4: U.S. Assistance to Ukraine’s Tech Sector

### 3.4.1: Context

*Given the importance of Ukraine’s tech sector to (1) future economic growth, (2) key domestic industries, and (3) national security objectives, supporting the repatriation and education of tech workers will be a priority for the Ukrainian government as it coordinates national reconstruction.*

**Prior to the full-scale invasion, the tech industry in Ukraine experienced significant development and was recognized as a crucial sector for Ukraine’s future growth.** Although the tech industry represented only a small component of Ukraine’s total GDP in 2022 at around 4%, IT wages were nearly five to six times the national average and software exports comprised roughly 10% of the country’s total exports. The more than 200,000 highly educated software engineers and 5,000 tech companies largely perform outsourcing for small and large businesses

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115 DiXi Group, Executive, Author Interview
Ukrainian Member of Parliament, Author Interview
117 Stanley Reed and Melissa Eddy, “Europe Has Weathered an Energy Crisis, for Now”
118 “How Is Ukraine’s Software Industry Weathering the War?” The Economist
“Digitalisation for recovery in Ukraine,” OECD
abroad, including for Microsoft, Google, and Samsung.\textsuperscript{119}

The EU has considerably more stringent tech regulations than the U.S. In recent years, Europe has “managed to establish itself as the de facto global regulator for the internet.”\textsuperscript{120} Despite its regulatory prominence, the EU continues to be dependent on U.S. tech firms’ outsourcing needs and Chinese firms’ hardware, placing the EU and Ukraine in precarious positions.\textsuperscript{121} While large U.S. tech firms have successfully adapted to meet EU standards and have continued their operations in Europe, it is less obvious whether Ukrainian firms will be able to meet all EU tech standards without impeding the sector’s growth, at least in the short term.

Ukraine’s IT Services Market (Export Volume and Talent Pool)

\begin{figure}
\centering
\includegraphics[width=\textwidth]{chart}
\caption{Ukraine’s IT Services Market (Export Volume and Talent Pool)}
\end{figure}

\textit{Source: Intetics}

The ongoing invasion continues to accelerate the brain drain of tech workers and to limit investment in the sector. While the tech sector has remained quite resilient amid the full-scale invasion, tech workers have been able to more easily relocate than many other workers. Rolling blackouts coupled with physical threats have forced approximately 20\% of the total IT workforce to emigrate.\textsuperscript{122} About 64\% of the IT workers who have emigrated are women, due to foreign travel restrictions for men.\textsuperscript{123} Tech investment has also diminished and venture capital investment in 2022 decreased by 25\% to $22.2 million, which is small compared to Poland and Lithuania at $408 million and $238 million, respectively.\textsuperscript{124}

\begin{itemize}
\item \textsuperscript{119} David Segal, “Inside Ukraine’s Thriving Tech Sector”
\item \textsuperscript{120} Konstantinos Komaitis and Justin Sherman, “US and EU Tech Strategy Aren’t as Aligned as You Think”
\item \textsuperscript{121} Ibid.
\item \textsuperscript{122} Sophia Waterfield, “Ukraine’s Plans for its Digital Recovery May Be too Bold”
\item \textsuperscript{123} “War’s Impact on Ukraine’s IT Industry,” \textit{Lviv IT Cluster}
\item \textsuperscript{124} “Locations Fundings Heatmap,” \textit{Dealroom.co}
\end{itemize}
3.4.2: State of Standardization in the Sector

While Ukraine’s deliberate focus on the IT sector has enabled significant growth and integration with EU and U.S. markets, much progress still needs to be made in data protection, intellectual property, and legislative consistency.

Per the European Commission’s February 2023 Analytical Report, the digital transformation and media sector is “moderately prepared” for accession. Key shortcomings to Ukraine’s full alignment include insufficient regulatory independence and the need to fully adhere to EU GDPR requirements. The tech sector in Ukraine has historically benefited from limited government regulation and an advantageous tax policy, but the government has recently increased emphasis on legal frameworks, data and IP protection by establishing the Ukrainian Intellectual Property Institute, National Intellectual Property Authority, and IT Law Committee. These measures stand to further align Ukrainian tech firms with EU digital regulations in the short to medium term.

The draft Privacy Bill (No. 2911-IX) would bring Ukraine closer to GDPR requirements. In October 2022, Ukrainian legislators submitted this bill to parliament that would, if adopted, take effect in early 2024 and create a strong basis for full alignment with GDPR requirements.

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125 “Analytical Report on Ukraine’s Alignment with EU Acquis,” European Commission, p. 33
127 “Coming Soon: GDPR-like Privacy Regulation in Ukraine,” Ius Laboris
USAID has the capacity to accelerate digital transformation and enhance sectoral growth, but broader recovery progress is needed to address emigrated workers’ standard of living concerns.

USAID can support the expansion of Ukraine’s e-government via its partnership with Ukraine’s Ministry of Digital Transformation that began in 2019. In January 2023, USAID announced its intent to provide $650K in funding to Diia, Ukraine’s flagship e-government app and digital platform. Diia has already improved government digital service delivery, transparency, and citizen engagement. Continued support will further improve the service and assist Ukraine in exporting tech services to partner countries, including the U.S. and EU member states. To protect these services and Ukraine’s lucrative tech sector more broadly, USAID has also established Ukraine-related partnerships with international cybersecurity actors and plans to provide an additional $60 million to bolster Ukraine’s cybersecurity.

USAID also has expertise in administering educational programming related to technology and digital services. For example, USAID has partnered with private sector companies to improve educational outcomes and recently leveraged donations to provide over 1,000 laptops, 857 tablet notebooks, and backpacks to Ukrainian students whose school was destroyed following Russian attacks.

Though support to Ukraine’s tech sector is crucial for the sector’s future growth, greater tech modernization cannot precede broader successful reconstruction efforts. The most important adjacent risks to the tech sector include:

1. Insufficient electricity and power generation capabilities
2. Inadequate understanding of tech regulation and cybersecurity among policymakers

3.4.4: Advantages and Disadvantages of Aligning with EU Standards

Advantages

Increased Legal Certainty: Greater alignment with EU standards, particularly in the areas of intellectual property rights and copyright disputes, would improve the business climate in Ukraine by strengthening the rule of law. In turn, this will help attract greater foreign investment, which will be conducive to entrepreneurial ventures. Both U.S. and European interviewees highlighted the need to improve overall business sector transparency before Ukraine’s tech sector can achieve its full potential.

128 “USAID Administrator Announces Intent to Provide $650,000 in Assistance for Digital Transformation,” USAID
129 “USAID Announces Up to $60 Million to Bolster Ukraine’s Cybersecurity,” USAID
130 “USAID and jp.ik Deliver a Pop-Up Classroom, Laptops, and Tablets to Ukrainian Students,” USAID
131 Cybersecurity for Critical Infrastructure of Ukraine Employee, Author Interview
132 European Union Diplomat, Author Interview
Senior Vice President at CSIS, Author Interview
**Improved Competitiveness:** Ukraine’s tech sector offers higher wages relative to other professions, but most tech professionals perform outsourcing for large foreign companies. As a result, Ukrainian tech workers are mainly constrained to lower-paying tech jobs because the value-added to outsourcing is limited. By contrast, Poland and Estonia have developed more value-added tech sectors, capitalizing on product development and catalyzing domestic business growth. Greater alignment with EU standards may enable Ukraine to shift from outsourcing to higher value-added functions, thereby positioning software firms to maximize growth potential and create better paying positions.

**Advancing National Security Interests:** Greater adherence to EU standards could accelerate Ukraine’s transition away from digital infrastructure provided by non-U.S. or EU competitors such as Huawei and thereby enhance the U.S. and allies’ national security postures. Ukraine hopes to join the EU and NATO and has the potential to develop a strong defense industrial base and thriving tech sector in the future. Given Europe’s national security concerns vis-à-vis Huawei and Germany’s recent move to explore greater restrictions on Huawei equipment, Ukraine’s alignment with EU tech standards may benefit common national security objectives, especially if the EU continues to shift away from Chinese-made critical infrastructure.

**Disadvantages**

**Stifled Innovation:** Although further legislative and judicial reforms can promote Ukraine’s tech sector, unnecessary or overly additional regulation stands to harm the industry. Given the significant emigration and wartime uncertainty, Ukraine must be cognizant of the risk of imposing stringent tech standards on businesses or individuals in the early phases of reconstruction. To this end, seeking to expedite tech firms’ alignment with EU standards may impose additional costs via changes to the beneficial tax policy and limit innovation.

**Arbitrary Reliance on EU Standards:** Despite Europe’s position as the world’s de-facto tech regulator, the U.S. and other international actors still wield significant market power and expertise. Given their expected role in the future recovery process, U.S. tech firms will likely expect U.S. agencies to facilitate their ability to seamlessly invest in Ukraine’s reconstruction. Further, promoting alignment with international standards rather than EU standards would likely maximize investment and expedite the sector’s modernization.

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133 IMF Official, Author Interview  
134 Ibid.  
135 Senior Vice President at CSIS, Author Interview  
136 Rob Schmitz, “Germany Moves toward Restrictions on Huawei, as Europe Sours on China”  
137 AmCham Ukraine President, Author Interview  
138 Atlantic Council Senior Fellow, Author Interview  
139 Senior Vice President at CSIS, Author Interview  
140 Anonymous, Author Interview
SECTION 4: RECOMMENDATIONS

It is clear Ukraine’s future prosperity and security is best attained through its continued Euro-Atlantic integration and eventual EU accession. In addition to strengthening Ukraine’s security environment and implementing anti-corruption reforms, furthering Ukrainian firms’ alignment with EU standards in key sectors is a necessary condition to commencing accession negotiations.

Despite Ukraine’s clear Euro-Atlantic trajectory, USAID should not exclusively prioritize programming that seeks to facilitate Ukrainian firms’ alignment with EU standards because of the scale of the reconstruction and the lack of political consensus in the U.S. Our findings indicate that the best course of action for USAID is to strike a balance between some initiatives that promote alignment with international standards and additional secondary initiatives that explicitly focus on EU standards alignment. This middle path would promote the short and long-term growth of key sectors, mitigate the risk of future U.S. political opposition to USAID’s role in reconstruction, and capitalize on USAID’s technical expertise.

To this end, we offer three overarching recommendations to build upon USAID’s plans for its medium to long-term engagement in Ukraine’s reconstruction process:

1. Prioritize non-EU standards programming that enhances Ukraine’s alignment with global economic standards, European integration, and domestic absorption capacity.
2. Incorporate limited EU standards-focused programming via established partnerships.
3. Create a framework for supporting post-war decentralization that features significant grant-based and municipal-level initiatives.

Recommendation #1: Prioritize Programming based on International Standards

USAID should provide non-EU standards-related support to Ukraine that catalyzes the country’s recovery and deeper economic integration with the EU but does not explicitly address standards-related issues. We recommend that USAID take the following steps:

1. Establish a short-term training program for English-speaking Ukrainians with backgrounds in economics, finance, or project management in cooperation with the World Bank and/or EBRD. This program should seek to increase the number of Ukrainian project managers who can serve as liaisons between international donors, Ukrainian federal officials, and local organizations during the reconstruction process.
2. Arrange frequent meetings between front-office representatives from USAID, USTR, and the International Trade Administration to improve communication, information-sharing, and interagency cohesion.
3. Adhere to a coalition-based strategy with IFIs, European aid agencies, and Ukrainian
civil society organizations at a subordinate level to the G7 framework. This should involve demanding the same realistic domestic reforms to increase accountability, combat judicial and legislative corruption, and enhance the transparency of the public contract procurement process.

4. Support small and medium-sized enterprises in the agriculture and tech sectors by providing affordable financing, with an emphasis on grants, through top-performing banks in collaboration with the World Bank and other IFIs.

5. Work through the State Department’s Office of Weapons Removal and Abatement to prioritize immediate de-mining efforts on most arable land following the de-escalation of hostilities by serving as an intermediary between international donors, the Ukrainian Ministry of Agrarian Policy and Food, and small-scale farmers.

**Recommendation #2: Incorporate Limited EU Standards-Focused Programming**

USAID should implement the following initiatives to support firms in Ukraine’s agriculture, energy, and tech sectors in adhering to the EU’s *acquis* pertaining to Agriculture and Rural Development, Energy, and Digital Transformation and Media (Chapters 10, 11, 15, and 21 of the EU’s framework for accession negotiations).

Developing programming that explicitly facilitates Ukrainian firms’ alignment to EU standards would limit the risk of fragmentation among international donors, expedite Ukraine’s EU accession, and provide a more predictable financial environment for investors. To this end, USAID should target the following sub-sector issues:

1. **Agriculture**
   a. Allocate funding and provide technical assistance to bring Ukraine’s railway, road, and port systems into alignment with EU transportation specifications.
   b. Provide cash and educational assistance for the 13,600 small-scale farmers in the AGRI-Ukraine Project aimed at converting their production facilities to adhere to the EU's green agriculture production standards. Explore incorporating and/or expanding risk insurance and debt buydowns into the AGRI-Ukraine initiative.
   c. Assist in the development of federal regulatory bodies capable of monitoring producers’ alignment with EU standards, especially the CAP’s SPS regulations.
   d. Advocate for a deliberate and sustainable approach to the continuation of land privatization within the framework of phasing out the land moratorium.
   e. Communicate publicly that USAID’s agriculture programming is intended to align Ukrainian firms with *international standards* to enable Ukraine’s access to global markets and to help generate U.S. domestic political and agribusiness support.
2. **Energy**
   a. Expand funding for critical transmission and distribution equipment and fund additional training initiatives for personnel at state-owned energy enterprises on EU accession (i.e., catalyze ENTSO-E synchronization).
   b. Promote corporate governance of transmission system operators as well as the financial and political independence of energy regulators to improve transparency.
   c. Finance post-war programs that enhance access to geological data and strengthen competition in natural gas production to create a more level playing field for natural gas extraction licenses.
   d. Support Ukraine’s full transition to a market pricing system for the gas and electricity sectors, while providing subsidies to the most vulnerable populations.
   e. Seek to improve district-level heat distribution networks and the national-level building inspection system to enhance overall energy efficiency.

3. **Tech**
   a. Assist Ukraine’s Ministry of Digital Transformation in adhering to EU data protection and privacy requirements (e.g., in revising proposed Bill No. 2911-IX).
   b. Prioritize intellectual property and judicial reforms in partnership with IFIs to incentivize innovation and foreign and domestic investment in the tech sector.
   c. Collaborate with U.S. tech firms (e.g., Microsoft, HP) that have operations in Ukraine to enhance tech educational programs for students and young adults.
   d. Encourage the continuation of advantageous tax benefits to combat brain drain exacerbated by EU integration and accession.
   e. Establish educational programming for mid-level to senior officials in Ukraine’s federal government to enhance their cybersecurity and digital literacy.

**Recommendation #3: Supporting Post-War Decentralization**

USAID should monitor and encourage the progress of Ukraine’s decentralization in an iterative manner by taking the following steps:

1. Expand grant-based funding for Ukraine’s regional and municipal government bodies as well as civil society organizations to enhance transparency and counter corruption risks.
2. Develop a tier-based framework to respond to the needs of local communities based on the extent of devastation (e.g., significant vs. moderate vs. minor destruction) and the size of community (large vs. medium vs. small) to ensure a targeted response that prioritizes the most vulnerable communities and maximizes the impact of available resources.
3. Remain sensitive in terms of how USAID support for post-war decentralization is communicated with Ukrainian federal officials to avoid creating tensions and to foster cooperation between federal and local authorities.
SECTION 5: CONCLUSION

Thousands of articles and reports have already been written on the issue of Ukraine’s recovery and reconstruction since the February 2022 full-fledged invasion. Authored by some of the world’s leading development experts, these reports vary widely in their focus, level of specificity, and degree of actionability. However, the specific question of what role, if any, USAID should play in expediting Ukraine’s EU accession in a post-war environment has remained largely absent from the literature to date.

In this report, we have sought to analyze the benefits and drawbacks of using future U.S. development assistance to Ukraine to explicitly facilitate Ukrainian firms’ alignment with EU standards in the agriculture, energy, and tech sectors. The report contextualizes the question of U.S. support within the international framework for reconstruction and the domestic U.S. political climate, while also framing its analysis within the dynamic and uncertain wartime environment. We have synthesized takeaways from dozens of interviews with policymakers, civil society actors, and private sector representatives in Ukraine, Europe, and the U.S.

We opted to analyze the question of U.S. assistance to Ukrainian firms specifically in the agriculture, energy, and tech sectors for several reasons. First, each of these sectors was crucial to the pre-war Ukrainian economy and integrated within the global economy, as evidenced by the immediate and significant increases in energy and food costs following the full-scale invasion. Moreover, these sectors’ prospects for speedy rejuvenation in peacetime are better than more physically intensive sectors like manufacturing. This makes them potential lower-cost, higher-impact targets for future USAID investment. And finally, the EU standards that govern each of these sectors depart to varying degrees from more international standards, such as the core standards to which WTO members commit.

In the end, we conclude that expanded USAID programming in Ukraine over the medium to long-term should prioritize non-EU standards initiatives that enhance (1) Ukraine’s alignment with global economic standards, (2) its European integration, and (3) its domestic absorption capacity. We also conclude that USAID should incorporate limited EU standards-focused programming into some of its existing programs (e.g., its AGRI-Ukraine program) and create a framework for supporting post-war decentralization via municipal-level initiatives.

We are confident that these recommendations strike a healthy balance between contributing to the short-term revival of Ukrainian firms’ production capacity in critical sectors while also contributing to Ukraine’s longer term economic integration with European markets. Critically, our recommendations also account for the likelihood that U.S. assistance to Ukraine will remain politicized domestically and perceived in the U.S. as worthwhile insofar as it advances U.S. security and/or economic interests. It is therefore important for USAID, in collaboration with its
private sector partners, to articulate clearly and regularly about how all of its programming in Ukraine – standards-related or not – meaningfully contributes to Western security interests and enhances U.S. firms’ ability to invest in Ukraine.

Nonetheless, readers should remain mindful of a few issues that exceeded the scope of this report. First, we have largely assumed that Russia will not achieve its military aim of initiating regime change in Ukraine. It perhaps goes without saying that the question of Ukraine’s EU accession timeline would be irrelevant in such a world. Second, we have mostly side-stepped the critical question of conditionality. While we recognize this is a vital issue, it currently seems premature to take a stance on when and to what extent future U.S. development assistance should be tied to the Ukrainian government implementing good governance reforms to its judicial and legislative systems. Nevertheless, we believe that any future conditioning of U.S. development assistance should be coordinated closely with IFIs and USAID’s partner agencies in Europe to maximize leverage.

Moreover, there are several further considerations that USAID staff and other policymakers working on reconstruction efforts must bear in mind that are under-addressed in this paper. Among others, these will likely include: a) how to foster the G-7-international partnership with Ukraine and its developing institutions of governance; b) consideration of establishing a model, similar to the Western NIS Fund at the end of the Cold War, to assist private investment; c) the need to utilize comparative advantages of USAID versus other development partners; d) specific steps to boost fast recovery (shelter, schools, medical facilities, some businesses) during the ongoing conflict; e) close cooperation with U.S. agencies to assess the pros and cons of coordinating with Chinese firms in Ukraine’s reconstruction efforts; f) complex and interrelated threats to Ukrainians’ fundamental human rights, especially in the form of human trafficking; and g) the potential to use digital platforms to monitor and evaluate countrywide reconstruction efforts in real time.

We hope this report has provided useful insights to USAID staff and other policymakers in the U.S., EU, and Ukraine as they plan to make future assistance to Ukraine as impactful as possible.
APPENDIX A: METHODS

We utilized three techniques to collect data from various stakeholders who have a range of perspectives on Ukraine’s medium to long-term economic recovery. We primarily relied upon qualitative data from semi-structured interviews and supplemented our findings through secondary research and a survey of 25 businesses with operations in Ukraine.

Interviews

As detailed in Appendix B: Interview List, we spoke with stakeholders in one of four broad categories: (1) international financial institutions, (2) U.S. stakeholders, (3) EU stakeholders, and (4) Ukrainian stakeholders. Core to our analysis was speaking with individuals who will be involved in planning and implementing future reconstruction efforts, including policymakers, academics, private sector representatives, and civil society actors. We conducted several in-person interviews in Kyiv and Washington DC and other interviews via Zoom. Several of our interviews were on the record, but a few interviewees requested to be on background or off the record.

Secondary Research

Given the amount of literature available on the war in Ukraine and future reconstruction, we leveraged a range of secondary data sources, including reports from IFIs and thinktanks, academic papers, and news articles. While a large portion of the existing literature focuses on Ukraine’s short-term needs, our research prioritized USAID’s engagement with medium to long-term needs in an attempt to fill a gap in the current literature on Ukraine’s reconstruction.

Survey

We also developed an online survey for businesses that are members of USUBC to collect additional qualitative and quantitative data about firms’ opinions of the current and future business environment in Ukraine. The survey, which was prepared and distributed via Harvard University’s Qualtrics platform, contained ten questions about firms’ appetite for future investment in Ukraine. It specifically inquired about firms’ investment appetite depending upon (1) the future development of the conflict, (2) reforms to Ukraine’s legislative and judicial systems, and (3) Ukraine’s gradual EU integration and accession. We received 25 full-length survey responses from USUBC members.
## Appendix B: Interview List

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<th>Functional Area</th>
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<tr>
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<td>Legislative Member of Parliament</td>
<td>Ukrainian Parliament</td>
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## APPENDIX C: DAMAGE AND LOSS BY REGION

<table>
<thead>
<tr>
<th>Oblast</th>
<th>Damage</th>
<th>Loss</th>
<th>Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frontline regions, subtotal</strong></td>
<td>103.5</td>
<td>133.2</td>
<td>231.8</td>
</tr>
<tr>
<td>Donetsk</td>
<td>35.2</td>
<td>43.1</td>
<td>67.4</td>
</tr>
<tr>
<td>Zaporizka</td>
<td>9.7</td>
<td>15.7</td>
<td>29.0</td>
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<tr>
<td>Luhanska</td>
<td>18.1</td>
<td>17.9</td>
<td>41.6</td>
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<tr>
<td>Mykolaivska</td>
<td>5.6</td>
<td>7.6</td>
<td>13.7</td>
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<tr>
<td>Kharkivska</td>
<td>25.8</td>
<td>36.5</td>
<td>50.2</td>
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<tr>
<td>Khersonska</td>
<td>9.1</td>
<td>12.4</td>
<td>29.8</td>
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<tr>
<td><strong>Support regions, subtotal</strong></td>
<td>2.7</td>
<td>22.3</td>
<td>15.9</td>
</tr>
<tr>
<td>Vinnytska</td>
<td>0.2</td>
<td>3.8</td>
<td>2.6</td>
</tr>
<tr>
<td>Dnipropetrovska</td>
<td>1.7</td>
<td>7.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Kirovohradska</td>
<td>0.1</td>
<td>2.5</td>
<td>1.6</td>
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<td>Odeska</td>
<td>0.6</td>
<td>4.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Poltavska</td>
<td>0.1</td>
<td>4.1</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Backline regions, subtotal</strong></td>
<td>0.4</td>
<td>16.8</td>
<td>11.4</td>
</tr>
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<td>1.4</td>
<td>1.2</td>
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<td>Zakarpatska</td>
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<td>1.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Ivano-Frankivska</td>
<td>0.0</td>
<td>1.3</td>
<td>0.9</td>
</tr>
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<td>3.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Rivnenska</td>
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<td>1.3</td>
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<td>Ternopilska</td>
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<td>Khmelnytska</td>
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<td>2.2</td>
<td>1.7</td>
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<tr>
<td>Chernivetska</td>
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<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Cherkaska</td>
<td>0.1</td>
<td>3.1</td>
<td>1.7</td>
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<tr>
<td><strong>Regions where government has regained control, subtotal</strong></td>
<td>19.8</td>
<td>60.4</td>
<td>56.4</td>
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<tr>
<td>Kyiv City</td>
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<td>15.8</td>
<td>6.1</td>
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<tr>
<td>Zhytomyrsksa</td>
<td>0.8</td>
<td>2.9</td>
<td>3.7</td>
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<tr>
<td>Kyivska</td>
<td>9.2</td>
<td>19.8</td>
<td>20.4</td>
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<td>Sumska</td>
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<td>7.5</td>
<td>9.3</td>
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<tr>
<td>Chernihivska</td>
<td>5.7</td>
<td>14.5</td>
<td>16.8</td>
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<tr>
<td><strong>Not specified—nationwide, subtotal</strong></td>
<td>8.3</td>
<td>56.5</td>
<td>95.1</td>
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</table>

APPENDIX D: BIBLIOGRAPHY


Anonymous, Author Interview, 8 Feb 2023, Cambridge, MA

Anonymous, Author Interview, 21 Feb 2023, Cambridge, MA

Anonymous at U.S. State Department, Author Interview, 28 Feb 2023, Cambridge, MA

ANTS Technical Expert, Author Interview, 13 Jan 2023, Kyiv, Ukraine


“Assessed Control of Terrain in Ukraine and Main Russian Maneuver Axes as of April 1, 2023,” Institute for the Study of War, April 2023: https://www.understandingwar.org/sites/default/files/Russian%20Offensive%20Campaign%20Assessment%2C%20April%202023.pdf


Atlantic Council Senior Director, Author Interview, 14 Feb 2023, Cambridge, MA

Atlantic Council Senior Fellow, Author Interview, 3 Feb 2023, Cambridge, MA


Cybersecurity for Critical Infrastructure of Ukraine Employee, Author Interview, 12 Jan 2023, Kyiv, Ukraine


“Description of Policy Developments,” OECD: https://www.oecd-ilibrary.org/sites/ee86a0b9-en/index.html?itemId=/content/component/ee86a0b9-en#section-d1e114668


“Direct Budget Support: Ukraine Supplemental Appropriations Act, 2023, Mandated Assessment”

DiXi Group Vice President, Author Interview, 13 Jan 2023, Kyiv, Ukraine


EBRD Program Manager, Author Interview, 20 Jan 2023, Cambridge, MA.


European Union Diplomat, Author Interview, 3 Feb 2022, Cambridge, MA

Fadek, Timothy, “How war has devastated Ukraine’s coal industry,” CNN, 6 Feb 2022: https://www.cnn.com/2022/02/05/europe/gallery/ukraine-coal-miners/index.html


Harris, Michael, “Ukrainian PM wants to double country’s hydroelectric power within 10 years,” Hydro Review, 14 June 2016: https://www.hydroreview.com/world-regions/ukrainian-pm-wants-to-double-country-s-hydroelectric-power-within-10-years/#gref

“How is Ukraine’s software industry weathering the war?,” The Economist, 21 Nov 2022: https://www.economist.com/the-economist explains/2022/11/21/how-is-ukraines-software-industry-weathering-the-war


International Finance Corporation Program Manager, Author Interview, 20 Jan 2023, Cambridge, MA.

International Monetary Fund Program Manager, Author Interview, 20 Jan 2023, Cambridge, MA.

Jankowicz, Mia, “Russia can keep up this level of fighting intensity in Ukraine for 2 more years, NATO country intel says,” Business Insider, 10 Mar 2023: https://www.yahoo.com/news/russia-keep-level-fighting-intensity-114532168.html


Kyiv School of Economics Program Director, Author Interview, 8 Feb 2023, Cambridge, MA

Kyiv School of Economics Program Manager, Author Interview 21 Jan 2023, Kyiv, Ukraine.


“Locations Fundings Heatmap,” Dealroom.co: https://app.dealroom.co/curated-heatmaps/funding/location

Manager at Agriculture Business, Author Interview, 17 March 2023, Cambridge, MA


Member of Parliament, Author Interview, 17 Jan 2023, Kyiv, Ukraine


Program Manager at the Centre for European Policy Studies, Author Interview, 9 Feb 2022, Cambridge, MA


“Renewable energy generation is a key priority for the Ukrainian energy sector,” U.S. International Trade Association, 26 April 2021: https://www.trade.gov/market-intelligence/ukraine-renewable-energy-market

Schmitz, Rob, “Germany Moves toward Restrictions on Huawei, as Europe Sours on China,” NPR, 8 March 2023: https://www.npr.org/2023/03/08/1154315168/germany-china-huawei-restrictions


Senior Manager at Agriculture Business, Author Interview, 10 March 2023, Cambridge, MA

“Share of Electricity Production from Wind, 2022,” Our World in Data, 2023: https://ourworldindata.org/grapher/share-electricity-wind


“Ukrainian IT Sector: Prospering Against the Odds,” Intetics, 21 Sep 2022: https://intetics.com/blog/ukrainian-it-sector-prospering-against-the-odds/


World Bank Economists, Author Interview, 17 Jan 2023, Cambridge, MA.
