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Report Name: Ukrainian Governmental Policies on Climate Change

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Report Highlights:

Ukraine has ambitions regarding combating climate change at the level of its laws and regulations. These are fueled by the nation's international commitments (both bilateral and multilateral) as well as economic benefits stemming from participation in international emissions trading schemes. Being both a net agricultural exporter and net importer of fossil fuels, Ukraine will inevitably get more involved in climate change mitigations in the future. Implementation of practical measures aimed at decreased energy consumption, including biofuel production, and more environmentally sustainable production practices are most likely in the near-term.

International Cooperation

Ukraine is a Party to the UN Framework Convention on Climate and the Kyoto Protocol and ratified the Paris Agreement.

The EU-Ukraine Association Agreement, which was signed in 2014, contains the following environmental commitments by Ukraine:

- "*promotion of the Joint Implementation Mechanism under the Kyoto Protocol to the UN Framework Convention on Climate Change of 1997 to reduce emissions of greenhouse gases (GHGs) through energy efficiency and renewable energy projects*" – Article 338 (k);
- "Cooperation shall aim at preserving, protecting, improving, and rehabilitating the quality of the environment, protecting human health, prudent and rational utilization of natural resources and promoting measures at international level to deal with regional or global environmental problems, *inter alia* in the areas of:(a) climate change – Article 361;
- "…the Parties will develop their scientific potential in order to fulfil their global responsibilities and commitments in areas such as health-related issues, environmental protection including climate change and other global challenges." – Article 374;
- "*Implementation by Ukraine of the Kyoto Protocol, including all eligibility criteria for fully using the Kyoto mechanisms. Development of an action plan for long-term (i.e., post-2012) mitigation of and adaptation to climate change. Development and implementation of long-term measures to reduce emissions of GHGs*" – Annex XXXI to Chapter 6.

More specifically, Ukraine has committed to adoption of the following EU regulations on climate change within 2 years of the entry into force of the Agreement:

- Directive 2003/87/EC establishing a scheme for GHG emission allowance trading within the Community and amending Directive 96/61/EC as amended by Directive 2004/101/EC;
- Regulation (EC) 842/2006;
- Regulation (EC) 2037/2000 on substances that deplete the ozone layer as amended by Regulations (EC) 2038/2000, (EC) 2039/2000, (EC) 1804/2003, (EC) 2077/2004, (EC) 29/2006, (EC) 1366/2006, (EC) 1784/2006, (EC) 1791/2006 and (EC) 2007/899 and Decisions 2003/160/EC, 2004/232/EC and 2007/54/EC;

Ukraine's Climate Aspects

The report, Climate Change and Agriculture in Ukraine: what farmers want to know? (in Ukrainian), which was developed by a German assistance project in 2019 and made public on the official web page of the Ministry of Environment, includes the following takeaways about climate change in Ukraine:

- Currently all agricultural lands have climate risk due to the chances of crop loss/decreased yields either due to lack of moisture or excessive moisture;

- The average annual temperature increased by over one degree Celsius over the last 30 years, which leads to the following consequences:
    - increased precipitation in winter and decreased participation in summer;
    - 10 regions (Southern and Central Ukraine) witnessed precipitation that was 7-12 percent below the norm from 2014-18;
    - precipitation patterns feature torrential rains after prolonged periods of drought, which makes soil less susceptible to absorb moisture and damages plants;
    - all Steppe regions require occasional watering of crops to ensure optimum growth conditions;
- Ukrainian agriculture was responsible for 12.1 percent of the country's total GHGs release;
- Some regions in Southern Ukraine are currently capable of production of some thermophilic crops, such as rice and cotton, based on annual sum of temperatures (3400-3700 degrees Celsius). The rest of Ukrainian regions now have no thermal limitations for winter crops;
- Production costs for products of animal origin are rising due to decreased availability, quantity, and quality for both water and feed for agricultural animals;
- Any benefits of climate change might be short-lived as yields might start decreasing 15-20 years from now due to increased frequency and severity of droughts.

Ukraine has committed itself to achieve the target of reducing GHG emissions of 65 percent by 2030, compared to 1990, reaching carbon neutrality until 2060 (more details on NDC Registry). The relevant decision was endorsed (in Ukrainian) by the Ukrainian Government on July 30, 2021. The main deliverables to achieve this aim for the next 10 years, include:

- Modernization of energy and industrial enterprises;
- Development of renewable energy sources;
- Energy efficiency measures in all sectors of the economy from production, transportation, and consumption;
- Modernization of thermal insulation of buildings;
- Increasing the share of organic agriculture and resource-saving agricultural practices;
- Electrification and upgrades of transport;
- Introduction of waste management procedures;
- Forestation and forest management reform.

The National Economic Strategy (NES) until 2030 (in Ukrainian) intends to meet climatic neutrality goals by 2026, including:

- Encouraging sustainable agricultural production, protecting the environment and animals, spreading the use of organic production and biotechnology techniques, using "climate-smart" agriculture and forestry with reducing GHG emissions, adapting to climate change, using sustainable natural resource management, and conserving and increasing biodiversity;
- Decarbonization of transport;
- … improvement of state policy in the field of management and environmental protection, environmental management, adaptation to climate change, and transition to the principles of "green economy";

- Introduction of a forest management system based on a balanced provision of economic, environmental and social functions, taking into account the need to adapt to climate change, preserve biodiversity, and encourage public participation in decision-making and transparency.

Specific NES action points suggest:

- Adoption of the second National-Determined Contribution of Ukraine to the Paris Agreement, taking into account the prospects for the restoration and growth of production volumes for Ukrainian industry;
- Implementation of a system for monitoring, reporting, and verifying GHG emissions;
- Introduction of a national GHG emissions trading system;
- Approval of an integrated plan to combat climate change and energy development by 2030;
- Development and implementation of the Framework Strategy for Adaptation to Climate Change in Ukraine by 2030;
- Development of sectoral climate policies and setting specific goals for each of them;
- Creation of a national climate fund;
- Introduction of "green bonds" to attract investments in eco modernization and environmental projects;
- Implementation of sectoral climate policies for energy, industry, transport, housing and communal services, agricultural, and other sectors.

Ukraine published the Annual National Inventory Report for Submission under the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

Climate-Related Trade Points

GHG emissions: In accordance with the requirements of the Directive 2009/28/EC, Ukraine calculates and reports emissions of GHGs for rapeseed and corn production on annual basis. These are required for the purposes of ensuring corn and rapeseed exports to the EU. According to local experts, the European Green Deal would result in additional restrictions and administrative burden for Ukrainian exporters of agricultural production to the EU. To comply, Ukraine must produce complex environmental reports in a timely manner, putting additional strain on Ukrainian governmental officials.

Organic: Ukraine has established an Organic Law (in Ukrainian) that envisages open and publicly available registries for: organic producers; organic seeds and seedlings; certification authorities; and substances (ingredients, components) allowed in organic production. All organic producers must be certified and undergo an annual audit by certification authorizes to ensure compliance to the rules of organic production (in Ukrainian) established by Government of Ukraine.

Development of organic norms is predominantly fostered by the ability to export products to the EU market. According to the report, EU Imports of Organic Agri-Food Products by the European Commission, Ukraine predominantly exported organic cereals, fruits, and some oilcakes to the EU. Total organic exports from Ukraine to the EU were over 217,000 MT, or around eight percent of EU's total organic imports for calendar year 2020.

Ukrainian farmers also have ambitions to export to U.S. market as well. USDA's Organic INTEGRITY Database contains over 70 Ukrainian operations that are certified to the USDA organic regulations, meaning that their products can be sold as organic in the United States.

Organic production in Ukraine might get a boost from the kick-off of a functioning land market. On April 30, 2020, the Ukrainian Parliament adopted the Land Law 2178-10 (in Ukrainian), paving the way for the buying and selling of agricultural lands in Ukraine, although with some limitations at the initial stage. The Land Market has become functional since July 1, 2021 solely for private individuals. Currently, the maximum ownership is limited at 100 hectares (ha) per person. Legal entities will be allowed to purchase land in 2024 and the ownership limit for legal entities is set at 10 thousand ha.

Ability to freely buy and sell agricultural lands would secure long-term property rights, which are important for an organic producer to obtain and retain its certification. It would also put a price tag on every plot of land, forcing some farmers to switch to organics to retain their profit margins.

Biotechnology: The biotechnology regulatory system in Ukraine is still not fully developed, but the country has committed to shape its policy in line with European Union's regulations. Political debate over agricultural biotechnology is active in Ukraine. In August 2021, the Government of Ukraine approved two draft laws:

1. "Amendments to the Code of Ukraine on Administrative Offenses to Strengthen Responsibility in the Field of Circulation of Genetically Modified Organisms" (in Ukrainian) that intends to bring illegal genetic engineering (GE) crop production under control;

2. "State Regulation of Genetic Engineering Activities and State Control over the Circulation of Genetically Modified Organisms and Genetically Modified Products to Ensure Food Security" (in Ukrainian) that improves procedures of state control over GE circulation as well as ensuring compliance of national laws in line with Ukraine's obligations taken in accordance with Article 64 of EU-Ukraine Association agreement, including:

    a. Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed;
    b. Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms;
    c. Commission Regulation (EC) No 641/2004 of 6 April 2004 on detailed rules for the implementation of Regulation (EC) No 1829/2003 of the European Parliament and of the Council as regards the application for the authorization of new genetically modified food and feed, the notification of existing products and adventitious or technically unavoidable presence of genetically modified material which has benefited from a favorable risk evaluation;
    d. Regulation (EC) No 1946/2003 of the European Parliament and of the Council of 15 July 2003 on transboundary movements of genetically modified organisms;
    e. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms;

f. Directive 2009/41/EC of the European Parliament and of the Council of 6 May 2009 on the contained use of genetically modified micro-organisms;
g. 2009/770/EC: Commission Decision of 13 October 2009 establishing standard reporting formats for presenting the monitoring results of the deliberate release into the environment of genetically modified organisms, as or in products, for the purpose of placing on the market;
h. Commission Recommendation of 13 July 2010 on guidelines for the development of national co-existence measures to avoid the unintended presence of GEs in conventional and organic crops.

Currently, there are no GE events officially approved for agricultural and food production and therefore no GE products can be legally imported into Ukraine. The Government of Ukraine does not permit cultivation of GE crops, however there are reports of illegal GE production for certain crops, predominantly soybeans with the share of GE soybean allegedly varying between 50-60 percent of total output. For more information about biotechnology in Ukraine, please refer to our latest Biotechnology and Other New Production Technologies Report.

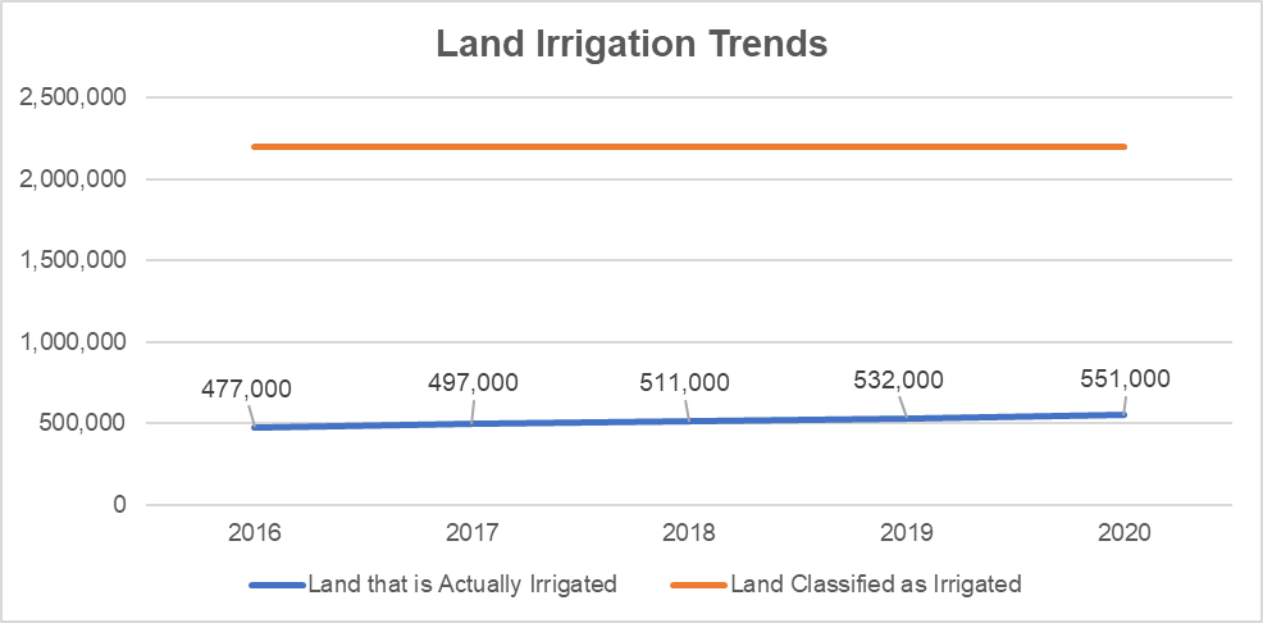
Other industries: In addition, some traditional industries like auto manufacturers, steelmakers, chemical industry etc. might implicitly or explicitly not support tougher environmental norms due to concerns with rising costs. This could impact Ukraine's ability to timely meet its international obligations and eventually result in additional trade barriers for Ukrainian agricultural exporters.

FAS Kyiv does not have information about climate-specific import barriers in place by Ukraine.

Other Climate Challenges

Irrigation: Given the arguments outlined in report, "Report Climate Change and Agriculture in Ukraine: what farmers want to know?" (see Ukraine's Climate Aspects section above), Ukrainian officials are looking for ways to mitigate drought conditions for Ukrainian farmers. The Minister of Agrarian Policy and Food, Mr. Roman Leshchenko, is actively seeking to ensure the efficient functioning of existing irrigation systems as well as developing new ones, especially in southern Ukraine. Most land in northern Ukraine, including major corn producing regions, are not currently irrigated since they received sufficient rainfall until recently.

According to official data, Ukraine has about 40.5 million ha of agricultural land. The Reform Support Office at the Ministry of Agrarian Policy and Food reports that 18.7 million ha of arable land in Ukraine require permanent irrigation/drainage and 4.8 million ha require occasional irrigation/drainage. Currently, only 2.2 million ha are formally classified as irrigated, which is very similar to the area of irrigated lands (2.29 million ha) reported back in 1990. While the area of land that is actually irrigated decreased by more than 70 percent since the 1990s, according to the State Agency of Water Resources of Ukraine, the amount of land that is actually irrigated has increased annually from 2016 – 2020 (see chart below).



Ukrainian farmers use a variety of irrigation systems. Drip irrigation, pictured below, is the most affordable solution in terms of the initial costs and does not require a lot of maintenance. On the flip side, it has to be scrapped at the end of every growing season, which creates future environmental problems if not disposed of properly. It also must be bought and installed annually once the planting season starts. Another drawback is it cannot cool down plants during heat waves, which might result in yield losses.

Complex irrigation systems are more expensive, but are a more permanent and efficient solution when it comes to growing crops in drought conditions like the ones currently prevailing in southern Ukraine. A perk of irrigation is that it allows farmers to mix fertilizer in its liquid form into the irrigation water, a practice that is increasingly being used in Ukraine.

For corn, proper irrigation with a fertilizer added to the irrigation water could more than double one's yields (13-15 MT/ha on irrigation vs 5-6 MT/ha without irrigation). This yield increase more than makes up for the additional costs associated with maintenance of the irrigation machinery, including water, manpower, security, depreciation, maintenance, etc.

Lateral move irrigation machines, pictured below, are very reliable, and some farmers noted that these could run for over 10 years without major issues. However, these systems are slowly falling out of grace by Ukrainian farmers since they tend to be labor-intensive. An endemic Ukrainian problem is that one needs to keep security personal to safeguard equipment and a lateral move irrigation is said to require more security personnel on the ground compared to a pivot system.

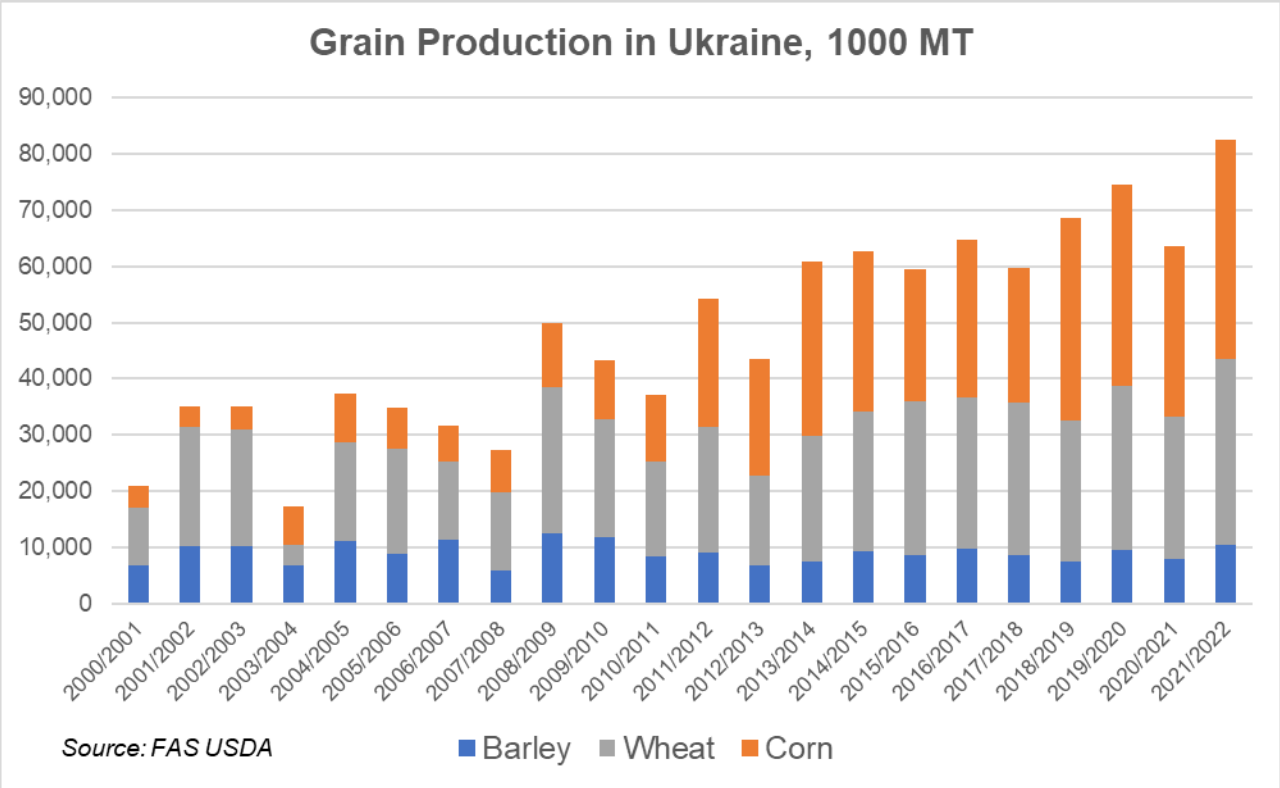
Some farmers prefer pivot irrigation systems, pictured below. They are seen as low maintenance and one needs less individuals to operate and secure them. Usually, one operator and security staff member can manage several pivots. On the flip side, the system does not cover the whole field and non-irrigated corners of a field need to be planted and harvested separately.

The functioning of all irrigation systems depends on state-owned canal systems sustained by a network of pumping stations: some of them are used to fill in the main body of the canal, while others are delivering water into pipeline networks branching out to farmer's fields. Most systems in use are Soviet era and were built in 1960s and 1970s. Often, pipes and pumping equipment have not been replaced or upgraded for the last 30 to 40 years and show a lot of wear and tear (see image below). This creates occasional incidents with burst pipes and the need to urgently fix them. Individual farmers are ready to team up and replace old iron pipes with plastic ones now that the land market is open.

The Ukrainian Parliament passed Draft Law #5205 (in Ukrainian) in the first reading. This Draft Law envisages the development of unions of water users that would be allowed to manage part of the irrigation infrastructure, the simplification of administrative procedures for the construction of new irrigation systems, and the maintenance of the existing ones, allowing farmers to cooperate.

Even without the relevant law in place, farmers in southern Ukraine are more practical in their ambitions and are investing in equipment featuring some variety of mini-till technology. These allow savings on costs as well as retaining as much precious moisture as possible in the soil. Farmers that have a sustainable water source in the proximity are investing in irrigation using a range of methods as described below.

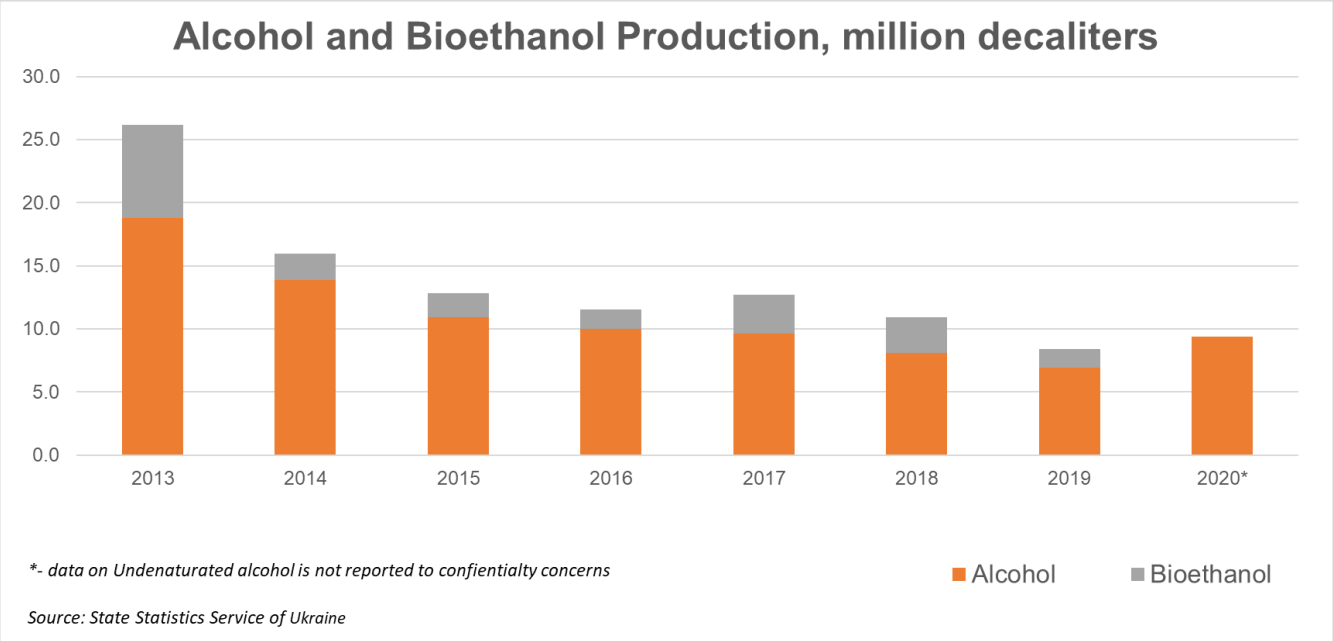
Biofuels: Biofuel production in Ukraine is still in its infancy. The graph below, Grain Production in Ukraine, indicates that grain production has increased almost four-fold for marketing year (MY)2020/21 against MY2000/01. Thus, the Ukrainian agricultural sector has a vested interest in establishment of a biofuels market in the country. Biofuel production would boost domestic demand for grains (predominantly corn) and local distilleries would compete with grain exporters, making prices more favorable for farmers. In addition, production of distiller's dried grains with solubles, a co-product of the ethanol process, would also be consumed domestically and exported as livestock feed.



The interest in development of functional biofuels policy is also shared by the Government of Ukraine since it would potentially allow Ukraine to reduce energy imports from Russia and export excess bioethanol to the EU. Additionally, this would give impetus for the development of local distilleries that are currently facing issues with the drop of molasses supply stemming from decreased sugar beet production in Ukraine (please refer to our GAIN Report UP2021-0015 for more details).

Ethanol production has been liberalized since 2019. According to the graph Alcohol and Bioethanol Production below**,** this move eventually tilted the balance towards alcohol production versus bioethanol production, since alcohol producers started actively privatizing formerly state-owned distilleries and implanting them in their production chains. Absence of statistical data on bioethanol production in 2020 might be explained by only one distillery left producing this type of product, since official statistics are legally prohibited from disclosing its annual production data that could be deduced to a specific company.

Posts' note: Ukrainian legislation distinguishes between two major types for ethyl spirit or ethanol by its use: food grade for human consumption and medical purposes (we use term "alcohol" for this group) and denaturized alcohol for industrial purposes and fuel blending (term "bioethanol" is used), that is produced by mixing ethanol with additives making it unfit for the human consumption.



Ukrainian lawmakers have developed a Draft Law on mandatory biofuel blending requirements (in Ukrainian) that plans to introduce 5 percent biofuel blending requirements into the gasoline starting on May 1, 2022. According to the press release (in Ukrainian) by the Government of Ukraine, Ukraine is currently importing 55,000 MT of bioethanol mixed with gasoline, while it has the potential ability to produce around 110,000 MT of bioethanol itself. The Draft Law has passed the first reading in June 2021 and is pending the second reading. Post expects some level of opposition, both by domestic fuel producers and fuel importers as they might reasonably expect a 5 percent decrease in production/trade of their products as well as need to invest in compliance for the new blending requirements. In addition, some older vehicles operating in Ukraine may not tolerate ethanol blends.

However, after considering the EU as a single market, Ukraine is the 42nd largest gasoline market in the world. Therefore, incorporating biofuels could be effective in reducing GHG emissions and reducing future, long-term climate warming. While Post does not have information about biodiesel production in

Ukraine, replacing fossil diesel with biodiesel could similarly provide substantial climate benefits. In addition, biomass-based jet fuel is increasingly in-demand in western markets.

Ukraine has removed excise duties on all ethyl alcohol produced for fuel and industrial use since 2018. If accompanied by an effective mandate system, this could lead to an increase in fuel ethanol production in Ukraine.

Ukraine is already providing stimulus for imported electric vehicles: zero import duty and Value Added Tax (regular rate – 20 percent) alongside preferential excise for imports. Ukrainian lawmakers have adopted the law (in Ukrainian) to provide tax benefits for domestic producers of electric vehicles as well as components for electric vehicles since beginning of 2022. Both of these initiatives are aimed at gradual decrease of fossil fuels consumption in the transport sector, i.e. decarbonization.

Attachments:

No Attachments.