

**Eastern Partnership 14th Panel on Transport:
*Electric Vehicles in Ukraine***

Transport Infrastructure Business Climate, EV's and Infrastructure Perspectives in Ukraine

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According to the Sustainable development strategy 2020, the requirements of EU in the frame of Association Agreement, the National Transport Strategy by 2030, the plans of Ministry of Infrastructure for 2018, the Technical Support for the Infrastructure reforms, the TEN- T legal basis, the major priorities in Transport Infrastructure are:

1. Effective public administration in the field of transport
2. High quality of transport service
3. Sustainable financing of Infrastructure, attractive business climate
4. Road safety
5. Mobility and roads integration, EVs and infrastructure development

Business climate monitoring. First three months of 2018

In March, licenses for operations in foreign currency may be canceled, which will make it easier for foreign economic entities to conduct transactions. The new law on currency was submitted to parliament aimed at establishing a lightened regime for currency regulation. Another draft of law, also submitted to parliament, will create the possibility of using international factoring and leasing, which will add attractiveness to the business of Ukraine.

New Law on Privatization is adopted and it allows the payment for state-owned facilities in both Ukrainian and foreign currency, and another advantage - the right to use laws of England and Wales to resolve disputes on privatization issues by 2021. Investors will be offered to privatize 99.99% of "Kyivpasservice" by October 30.

Reduction of raider attacks in Ukraine is possible due to newly adopted law on limited liability companies, which improves the inner regulation system concerning removal of members of such a companies.

New Law on Audit was adopted in February, which would provide transparency of the quality of audit services at enterprises of public interest. In addition, a draft law proposed to the Parliament will reduce the risks of economic activity in the process of transfer for use (lease, concession, management, etc.) of integral property complexes.

New monitoring system of public procurement provides an automatic risk management system that will analyze all purchases according to established criteria.

State Fiscal Service is working on the unification of accounts for payment of taxes and fees, simplification of customs declarations and submission of tax reports, for which strategy has been already developed. During the period from February 1 to March 21, according to the principle of a single window, almost 75% or 216.6 thousand of 356.9 thousand customs declarations were issued.

From the beginning of the year and until 2020, the legally enforceable application of the installment payment of VAT for 24 months, with the import of equipment for each specific production on application.

National electronic registry in automobile transport and its integration into the system EUCARIS is under working out.

The Government has developed a bill "On the National Geospatial Data Infrastructure", which will facilitate the integration of geospatial data into a global information system with free access to them.

The Government has developed and approved the Concept for the creation of a state system for the protection of Ukraine's critical infrastructure, namely the important national interests of Ukraine.

EV's and infrastructure perspectives in Ukraine

Starting from January 1 until December 31, 2018, comes into force the norm of the law on exemption from value added tax and excise tax operations on import into the customs territory of Ukraine and on the supply in the customs territory of Ukraine of vehicles exclusively equipped with electric motors.

There is one more registered Draft Law No. 8160 on stimulating the development of the electric transport sector in Ukraine. It is proposes to exempt from import duties, customs duties on electric vehicles and other goods for their production on the territory of Ukraine until December 31, 2028.

Regarding the stimulating law it is logically increase of the sale of electric cars on the territory of Ukraine and increase their popularity among the Ukrainian population (the amount of sold e-cars last year is the same as amount for first 3 months in 2018), especially considering the growth of the price for classical liquid fuels. Representatives of electrical car manufacturers and dealers have repeatedly stated that for the development of electric transport in Ukraine there should be proper infrastructure, starting with charging stations.

The current state of the infrastructure of electric vehicle charging stations

According to the Schneider Electric in Ukraine, the total number of charging stations for electric vehicles exceeded 1500, and according to the forecast, this number will increase to 4000 by the end of 2018. The number of electric cars in Ukraine is little more than 5000, while the total vehicle fleet is about 9 million cars. According to the Association "Ukravtoprom" in 2017 in Ukraine were sold 2697 passenger electric cars (2.3 times more than in 2016), that is 3.3% of the total car sales in the country.

In Ukraine, there are registered more than 6000 "green" vehicles – electric cars and hybrids. However, the country has not developed the charging stations network. It is possible to recharge on the road only in the direction of Lviv, Odesa and Kharkiv. Sometimes, users may even have to book time to charge their car on some stations. There are not enough charging stations to get from Kharkiv to Lviv.

Specific features of pricing models for commercial EV charging

The most understandable and transparent pricing model for EV owners is by the kilowatt-hour because it provides a way to clearly measure the value of the service purchased by the buyer regardless of the charger and the EV brand. Under the current legal framework in Ukraine, pricing by the kilowatt-hour for commercial EV charging may be treated as a sale of electricity and therefore be subject to state licensing requirements and regulation by the National Energy and Utilities Regulatory Commission. The existing charging-station operators are forced to provide the EV charging service either on a per-minute basis or in *conventional* units.

Pricing by the minute for charging, as viewed by many EV owners, is non-transparent and often unfair because the EV charging rate is highly dependent upon the technical condition of the battery, and it is widely different at different stages of the charging process, i.e. the rate depends on the current battery charge level. Besides, the minute-based pricing model does not account for the actual charger capacity (oftentimes deviating from the declared values) and the capacity of the on-board inverter in the EV, which act as limiting factors during the charging process, but the cost of one minute of charging would still be the same for everybody.

Pricing model based on nominal units, which are essentially equal to kilowatt-hours, is applied by some operators only not to formally mention the kilowatt-hours and thus stay outside the regulator's radar. This fact is another confirmation that the pricing by the kilowatt-hour is attractive to both charging station operators and EV owners.

This situation does not promote open business practices and is an obstacle to having new players on the market because they are not willing to use ambiguous pricing models and risk of being accused of avoiding licensing and regulation.

The increase of charging stations on the base of petrol stations

Today the network of chargers in Ukraine consists of little more than 400 charging stations. Mainly, charging stations are installed at existing petrol stations. The largest petrol companies are going to continue this practice – intensively increasing the number of charging stations for electric vehicles at their petrol stations:

- a) The company "WOG" intends to increase the number of charging modules for electric vehicles from 102 (by the end of 2017) to 300. Including about 30 devices for fast recharging (supercharge). It is planned that standard charging modules will be free, while users would have to pay for the faster ones. However, the price will be at the level of the first cost.
- b) Another major network "OKKO", which started installing chargers for electric vehicles in 2012, now has 45 charging points at their petrol stations.
- c) The network of petrol stations "KLO" still uses charging stations only for internal purposes - charging of corporate electric vehicles. The reason for this is the high cost of supercharge stations (of the direct current, which charge electric vehicle in 30 - 40 minutes) for the Ukrainian market. At the same time, the company by itself is trying to create a few high-speed chargers using Ukrainian transformers (with direct current 50 kW -100 kW). The company is also planning to install 5-7 charging stations on motor roads.
- d) The representatives of the network of petrol stations "SOCAR" (Ukraine) note that they have launched negotiations with several companies about installing fast charge equipment, which can charge a Tesla in 30 minutes.
- e) The representatives of the European office "Renault" surveyed 63 stations in Kyiv, 17 in Odessa and 22 in Lviv in 2017.

The future development of the charging stations infrastructure

A landmark for the Ukrainian market will be the emergence of official Tesla superchargers. At the beginning of November 2017 Tesla continues to declare that its two stations will be soon opened on the highway Kyiv–Lviv.

In addition, during the preparation for the launch of official sales of electric cars in Ukraine, the company "Renault" began to install free charging stations. The Ministry of Infrastructure of Ukraine plans to hold a tender for the purchase of 50 charging stations for electric vehicles worth UAH 4.5 million. It is planned to buy charges from

domestic manufacturers. These measures are aimed at developing electric vehicles market in Ukraine and stimulate national manufacturing.

On 5 January, 2018, the Lviv City Council approved the Concept of Electric Mobility, which envisages an increase in the number of electric vehicles to 20% by 2025, public electric transport in general - up to 40%, and municipal transport - up to 50%. In public access in the city there are 16 electric vehicles charging stations, another 23 charging stations are commercial. Based on this concept, targeted programs will be created for the development of key areas: the program for the development of the network of electric charging stations, the program of measures to popularize vehicles with electric motors, the program for the development of urban public electric transport.

In order to ensure high quality fulfilling market demand and business development opportunities in the sphere of development the infrastructure of electric-charging stations Ukraine should:

- a. Arrange the full cycle of electric transport in Ukraine, the creation of an opportunity to buy electric transport inexpensively and support business development.
- b. Increase the share of electric cars in total car sales by at least 15% by 2020.
- c. Prolong until the 31th of December, 2022 exemption from value added tax and excise tax operations on import into the customs territory of Ukraine and on the supply in the customs territory of Ukraine of vehicles exclusively equipped with electric motors, as well as charging stations.
- d. Within the second, ten-year period, to attract strategic investors to the production of electric transport and charging stations.
- e. Among other incentives for switching to electric transport:
 - free parking on public and communal parking for 15 years;
 - 0% first registration of e-transport in the pension fund;
 - for business: zero VAT rate for the provision of transportation services on e-transport, zero VAT rate for the provision of electronic transport for rent, leasing.

In order to avoid any harmful regulation of the relationship between owners of charging stations (or charging service providers) and electric vehicles' owners, EV charging should be interpreted as a service, and not as a supply of electricity. In logic of the Electricity Market Law, owners of charging stations (or charging service providers) must have free access to the choice of the electricity supplier. EV owners must have access to charging stations without an obligatory entering into a contractual relationship with any electricity suppliers.