city full of energy and joyful people. With this design solution, we take care of people's psychological perception of the object. On the one hand, it is just a decoration of the station, so as not to depress the daily life of motorists. Funny drawings and lots of bright colors can attract children's attention and teach them from an early age to take care of the world around them, to protect nature and use resources wisely. This project is just an idea, the relevance of which is currently overdue. This solves the problem of getting rid of harmful emissions from vehicles and obtaining environmentally friendly energy.

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RENEWABLE ENERGY SOURCES IN BELARUS AND THEIR ASSESSMENT

ВОЗОБНОВЛЯЕМЫЕ ИСТОЧНИКИ ЭНЕРГИИ БЕЛАРУСИ И ИХ ОЦЕНКА

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Biomass is the most abundant renewable energy resource in the country. Much biomass potential lies in wood resources, including residues, given the vast expanses of forests covering approximately 40% of the country's surface

area. Waste wood resources that can be used for bioenergy production are estimated at 1.5 billion cubic meters (bcm) with an annual growth of 0.03 bcm. According to the National Programm on Local and Renewable Energy Development for 2011-15, solid biomass potential is valued at 2.2 million tonnes of oil equivalent (Mtoe)/year, while a further 1.7 Mtoe/year is estimated from agricultural waste (crop residues and straw). Currently, solid biomass is utilised for heat production in heat and cogeneration power plants and boilers, and 8.9 MW is installed for power production.

The potential for biogas production is significant in Belarus, owing to the large quantities of manure available from cattle and poultry farming, residues from crop farming, waste from the food industry, municipal waste and sewage from treatment facilities. Resource assessment studies for biogas potential from these waste sources have not been extensively undertaken; however, several approximations have been made. Namely, these potentials include 2.3 Mtoe/year of biogas production from animal manure and 0.3 Mtoe/year from municipal solid waste. In 2019, the installed capacity of biogas power plants was 26.8 MW.

Biofuel production in the form of bioethanol and biodiesel is deemed significant, albeit understudied. The potential for biofuel production is due to the significant agricultural activities, sugar production, and starch and cellulose industries in Belarus.

Speaking of hydropower. Given Belarus's relatively flat topography, the country's potential for large hydropower development is insignificant, although the potential for small-scale hydropower (<10MW) production is feasible in the northern and central regions of the country. The potential hydropower capacity of all bodies of water in Belarus is estimated at 850 MW, of which the technical potential is estimated at 520 MW and economic potential is estimated at 250 MW. Historically, Belarus had a large number of very small-scale hydropower plants for electricity production in rural areas and for productive uses, such as sawmills and flourmills. With the expansion of the centralised grid, most of these plants became obsolete and were decommissioned. Currently, the installed hydropower capacity is 95.7 MW, of which 88.1 MW is owned by BelEnergo.

Average annual wind in Belarus speeds are above 6 m/s (at 100 m hub height) in almost all areas of the country. In the north, northwest and -around Minsk, average annual wind speeds can reach up to 8 m/s, signalling high-quality resource potential for wind power development in the country. In 2019, the installed wind power capacity was 106.1 MW, of which 9 MW were owned by BelEnergo.

What about solar? The annual global horizontal irradiation (GHI) in Belarus is between 1000 kWh/m2 and 1170 kWh/m2, with the highest irradiation in the south and southeast of the country, indicating significant potential for solar PV

development. In the highpotential areas, solar PV generation yield can reach over 1100 kWh/kWp annually. In the rest of the country it can reach well above 1020 kWh/kWp. For solar thermal applications, the regions with the highest potential are Brest and Gomel in the south and southeast of the country, which receive on average 60 clear days per year and a direct normal irradiance (DNI) of more than 1050 kWh/m2. In general, the country has potential for solar thermal applications, such as for space and water heating and low-enthalpy process heat in the industry and services sectors.

The potential for geothermal is inadequately assessed to date, with studies carried out on only a few regions. In 2018, the first geothermal atlas of Belarus was published, consisting of around 50 detailed maps of the Pripyat Trough showing the most promising geothermal wells at depths between 100 m and 4 km. The atlas includes geothermal gradients, heat flow density and geothermal resources. Although some estimates show that temperatures of 150°C to 180°C are available within the crystalline basement of up to 6 km depths, they are not economically feasible for exploitation. As such, Belarus's geothermal resources are not deemed significant enough for power generation. In general, geothermal potential is deemed to be most suitable for low-enthalpy heat processes throughout the country. The most promising sites are in the Pripyat Trough in the south of the country and in the Brest region.

As of 2019, Belarus had just under 300 geothermal heat pump installations of under 13 MW of installed capacity, which are mainly used for space heating and hot water supply in cottages and hospitals. The largest geothermal installation (two heat pumps with a collective output of 1010 KW) is located at a greenhouse complex in the Brest region, where the water temperature reaches 24°C and flows at about 42 m3 per hour.

In conclusion. Renewable energy is in a nascent stage in the Belarusian energy sector. The share of primary energy supply from renewables has been steadily increasing over the past decade and in 2019 stood at 7.1%. This share largely comprises biofuels and, to a lesser extent, solar PV and wind. Nonetheless, the country is well endowed with renewable energy resource potential that presents a viable and sustainable pathway for the development of the energy sector.

It is time to seize the opportunity and accelerate the spread of renewable energy sources to achieve our common goals of safe, reliable, inexpensive and environmentally sustainable energy. Now it can be done cheaper than ever, and this option will increasingly prove to be the most economical for consumers today and in the long term.

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FOOD WASTE AS A RENEWABLE ENERGY SOURCE

ПИЩЕВЫЕ ОТХОДЫ КАК ВОЗОБНОВЛЯЕМЫЙ ИСТОЧНИК ЭНЕРГИИ

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Globally, most greenhouse gas (GHG) emissions come from the use of energy derived from fossil raw material, so in recent years more and more attention has been paid to the search for alternative energy sources that can worthy replace hydrocarbon fuels. Commercial aviation alone accounts for about 3% of total global carbon emissions. It is one of the main contributors to climate change and one of the sectors that is most difficult to move away from fossil fuels. However, the industry is actively seeking eco-friendly solutions in the form of clean jet fuel.

Renewable energy has offered great promise for energy production worldwide; however, cost and accessibility to the general population remains a problem. As one of the most popular clean energy sources using natural resources such as sunlight, wind, rain, tides, waves and heat, renewable energy accounted for only 13.7% of the world's total major energy consumption in 2016. As the demand for energy increases significantly year by year, it is clear that the search for other sources of clean energy has not even begun. In this regard, there is a