

margins and make customers adopt a particular view of how they should live and what they should buy. Most companies care about environment not because of their sincere motives or because of the detrimental consequences of their activities, but because they want to cash in on those who are willing to help the Earth.

Is green economy a possibility?

These days we live in the world of consumerism. It means that increasing consumption of goods and services purchased in the market is always a desirable goal. People always had unlimited demands, but we can't meet today's requirements without sacrificing way more natural, economic and human resources than we used to. Whether we like it or not we can't completely refuse from industries that harm environment. At the same time we shouldn't turn the blind eye on the Earth, as it is a delicate thing and it cannot last forever. It becomes obvious that green economy is here to help us. What are the main steps in green economy that every person can do on a daily basis to help the environment?

1. "Conscious consuming". The main aim is to make people more mindful in what they buy.

2. Renewable sources of energy: wind power, solar power.

3. Be more economical with natural resources.

4. Protection of the "Green zones" around cities.

Conclusion: Green economy is a new alternative way of living in harmony with nature during digital and industrial era. Green economy is a possibility for further human economic and social development.

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PERSPECTIVE TYPES OF ENERGY STORAGE

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This paper focuses on perspective types of energy storage. Due to growing concerns about the environmental impacts of fossil fuels and the capacity and resilience of energy grids around the world, engineers and policymakers are increasingly turning their attention to energy storage solutions.

The goal of the survey was to analyze current and perspective types of energy storage: their main features, principle of work, advantages and disadvantages in comparison with traditional ones. This survey is based on the number of articles

and documents, with some data on the topic of energy storing. There are three points under consideration:

- Why is energy storage so important?
- Problems with using traditional energy storage in electric vehicles. Solid-state batteries. Niobium batteries.
- Technologies that are utilized for the large-scale storage of electricity. Pumped-storage hydroelectricity. Liquid air energy storage.

According to the official statistics data, electricity is one of the most predominant forms of energy that has direct importance to lives of people since 19th century. However, the demand for electrical energy is constantly increasing and varies considerably daily and seasonally. Energy storage technologies are essential to balance the supply and demand of electricity generation, distribution, and usage.

Nowadays liquid chemical batteries are the most widely and commonly used rechargeable type of energy storage. They power the vast majority of things people use at this point from mobile devices and domestic appliances, to electric vehicles and medicine. Nevertheless, the liquid chemical batteries have some huge problems such as a low capacity of batteries, a short life cycle, and environmental pollution.

Traditional lithium ion batteries are great, but they still have several drawbacks that have been limiting wider electric car adoption. Lithium-ion batteries require protection and management circuits to prevent them from being overcharged and discharged, which increases costs and complexity. They suffer from aging whether they are in use or not. They also weigh a lot (accounting for about 1/3 of an electric vehicle's weight).

Solid-state batteries can provide potential solutions for many problems of liquid Li-ion batteries. Currently, lithium batteries use a liquid electrolyte but this raises problems regarding flammability, risk of leakage, and electrolytic decomposition at high voltages. Solid-state batteries contain solid electrodes and a solid electrolyte instead of liquid, thus battery can still safely operate while punctured, without leaking or exploding unlike liquid lithium ion batteries. Another advantage of solid-state batteries is their energy densities, that is 2,5 times higher than current lithium-ion batteries (currently 250–270 Wh/kg), which means that the battery could be lighter while storing the same amount of energy.

On top of that, according to researchers, solid-state batteries will be able to recharge 4–6 times faster than current lithium technologies without compromising safety. That factor could be a game-changer in marking electric vehicles as charging time is one of the biggest reasons consumers are electric vehicle hesitant. However, a big problem with lithium solid-state batteries is cost (it is still early days), which is projected to be around \$200/kWh (the price of liquid Li-on batteries is about \$101/kWh).

Another technology that offers fast charging, great energy retention after thousands of cycles and lower heat generation than conventional lithium-ion batteries

is the niobium battery, manufactured by Battery Streak. This battery is capable of charging up to 80 % in only 10 minutes with a 6C rate while generating a small quantity of heat. In addition, it can retain 90 % of its capacity after 3,000 cycles.

Pumped-storage hydroelectricity is one of the most cost effective methods to store electricity nowadays. The way it works is to take excess electricity and pump water from a lower reservoir to an elevated reservoir. When electricity is necessary, the elevated reservoir water is released through turbines to produce electric power as it flows back down to the lower reservoir. The round-trip energy efficiency of PSH varies between 70–80 % that is much lower than its of lithium ion battery (typical efficiency of 90 %), but in contrast to Li-ion batteries, pumped-storage hydroelectricity has significantly more long life cycle with fewer pollution.

Liquid air energy storage, or cryogenic energy storage, is another way to accumulate large amounts of electricity. The basic principle is simple. Use energy to compress air down into a small space. When you need energy, you release that air, letting it expand and turn a turbine to generate electricity on the way back out. The big difference from pumped hydro storage is that you are not limited by geography.

In addition, liquid air energy storage has less round-trip efficiency (no more of 70 %), but considerable cheaper (\$100/MWh). By comparison, a new pumped-hydro plant would have a levelized cost of storage of \$152–198/MWh, with a comparable lithium-ion system costing \$285–581/MWh, according to analyst Lazard.

Therefore, it is possible to conclude, that industry of energy storage is finding the ways to solve deficiencies of conventional energy storages. There is no a magic bullet yet. Companies experiment with using more efficient materials and designs.

Thus, we have a variety of batteries and energy storage options today, and humanity will need an array of choices for the future too. Nevertheless, our cars, smartphones and drones will have to wait a little longer before being supercharged to the next level.

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GREEN LIFESTYLE AND WAYS TO ENCOURAGE IT IN BELARUS FROM STUDENTS' PERSPECTIVE

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The topic under consideration is life of the society in terms of green economy and governmental encouragement of green policies. Since sustainable development embraces three areas – economy, society and environment – green economy is inseparable from green lifestyle and turning all citizens into green advocates.

The object of the research is green lifestyle. The subjects are Belarusian students' behavior towards green issues and their awareness about governmental green economy policies. The aims are to find out the students' attitude to green tendencies and their expectations from the government in order to popularize “green” responsibility in the country; the task is to find ways via which the government can engage people in participation of green economy.

The work is relevant as the issue of social responsibility and governmental engagement in social life is vital for understanding how people act in the time of the increasing gap between our development and safety of the environment. Nowadays environmental issues are becoming more popular and discussed, and the phrase “green lifestyle” appears almost everywhere in our life.

To achieve the aims, we have used the following methods of study: the analysis of secondary sources, the analysis of empirical data collected via distributing a questionnaire.

The research question is to figure out by which means the government stimulate people to follow “green” rules, to analyses the attitude of students to this encouragement and to find out if they are aware of the actions provided by the