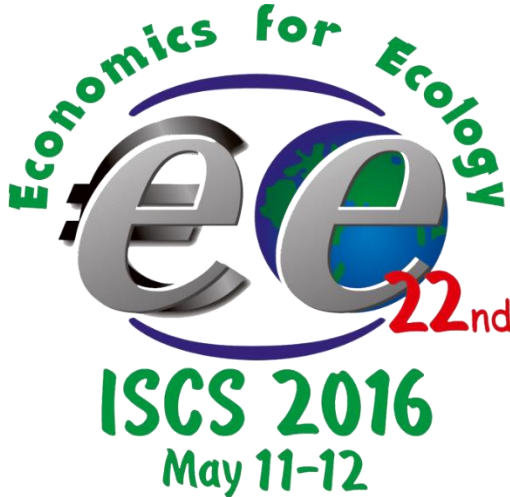


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**"Economics for Ecology"**  
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**Економіка для екології**

Матеріали  
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The network of charging stations is insufficiently developed in Ukraine. This restricts the use of electric vehicles outside the city, creating zones of inaccessibility to their owners. Electric battery replacement is quite a difficult task from organizational and technical point of view and is rather expensive. The recycling of big-sized lithium-ion batteries of electric cars is also a problem from the environmental point of view.

### **THIRD INDUSTRIAL REVOLUTION AS A WAY FOR GREEN ECONOMY FORMING<sup>1</sup>**

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Transition to sustainable economy through the Third Industrial Revolution occurs through a three united system of interaction of material and energy, information and synergistic factors. In its course prerequisites for the formation of green economy - "Economy of spacemen" are formed.

There are several key areas of transformation of material and energy base. One of the essential ones is the transition to renewable resources. First of all we are talking about energy resources. "Green" energy (solar, wind, geothermal heat, tidal energy) allows do without fuel and chemical processes of burning it. It means that from production cycles entire industry links that ensure the extraction of mineral resources, reclamation of disturbed landscapes, transportation of raw materials (cars/dry cargo ships - in the case of charcoal or tanks/pipelines/tankers - in the case of oil and gas), fuel combustion in power plants; production, manufacturing of purification equipment and waste management, as well as the processes of creation of engineering and construction companies, which generated power for the realization of all these processes are eliminated. Although, of course, we must not forget that the creation of own installations for generating renewable energy, also require considerable costs.

Talking about the transformation of the information base, we are referring to changes in the content of information principles of the formation of the productive forces and the production systems of

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consumption. This involves the development of new information algorithms used for new technologies, the construction design of products, the formation of consumer patterns and lifestyles.

In the Third Industrial Revolution synergetic factors took the leadership. They will integrate the individual components (assets, means of production, performers, etc.) in the holistic local economic systems and combine the latest in a single unit system - the global economy "spaceship Earth". This will be another step towards naturalization (approximation to the natural principles) of economic systems. After all, in a similar way in the nature individual biological components are integrated into ecosystems, which unite to form a single biosphere of the planet.

In modern conditions the creation of smart operating systems that will not only take the optimization function of production processes in space and time, but also serve as an integrating principle, unifying activity of many business units is the reality. In particular, the "intelligent" Internet successfully solves the logistic problems of industrial enterprises, including the problem of finding the best suppliers of resources, optimization of delivery routes, etc.

In contrast to the traditional energy, which is based on large-volume processing capacity, "green" energy uses a huge number of small generating plants. This suggests a significant deconcentration of energy sources. These sources of energy can be a real productive force only on condition that they will be combined into a single system and will be in information order. In the EU, such a system already exists - it is EnerNet.

Formation of virtual enterprises allows realizing the principle of concentration in time of the processes decentralized in space. Through the establishment of networks of production plants located in different spatial conditions - often in different parts of the globe - can integrate its activities into a single production cycle.

One of the features of the modern development of the productive forces is the formation of horizontal links that connect directly (i.e., without intermediaries) producers and consumers of goods and services.

"Cloud» technologies allow the use of network technology to implement various manufacturing processes associated with the processing of information, beyond the capacity of a particular company (including a specific computer or IT system).

The third Industrial Revolution is realized in the course of the triune interaction transforms of three key groups of factors: material and energy,

information and synergy (communication). As a result of these processes the basis of a new type of economy is being formed.

## **GREEN ENERGY FOR SUSTAINABLE DEVELOPMENT IN UKRAINE<sup>1</sup>**

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To ensure energy independence of Ukraine on the way to sustainable development one of the priority areas is the implementation of alternative energy projects.

Rising energy demand raise the issues of a gradual shift from traditional technologies that involve the use of mainly energy assets and passive energy networks to fundamentally new solutions, focused on the widespread use of renewable energy sources (RES) and active networks that can provide services for transfer, storage and conversion of electricity.

Such network is EnerNet. EnerNet is an information-energy active system for the collection (from separate sources), transfer, storage, conversion and use of electric energy in the most efficient manner. It performs the following functions: power generation, transmission, collection, storage, rental, control, billing, sales, operations optimization, protection, providing of power quality, power system stability.

The Law of Ukraine "On Electric Power ", dated 01.01.2014 allows domestic private households fixing on theirs roofs photovoltaic panels, which power does not exceed 10 kW and connect them to the local grids.

Ukraine provides economic incentives to private households for green energy production using a Green Tariff for the period up to 01.01.2030. It refers to those economic agents (private households) that produce electricity from RES. Oblenergo will purchase from private households electricity produced from renewable energy sources.

It should be noted that promising and cost-effective energy projects are being realized with the use of a Green Tariff and in accordance with the terms of the Law of Ukraine "On Electric Power". It allows selling energy

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