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## **ЭКО-ГОРОД ИЛИ УСТОЙЧИВОЕ РАЗВИТИЕ ГОРОДА ECO-CITIES OR SUSTAINABLE CITY DEVELOPMENT**

*АННОТАЦИЯ: Целью данной статьи является изучение устойчивого развития города в достижении эко-города. Большое внимание уделяется ключевым вопросам транспорта современных городов и экологичным технологиям для воды, энергии и отходов.*

*ABSTRACT: The purpose of this paper is to study sustainable city development or an eco-city. Much attention is paid to the key transport issues of modern cities and environmental technologies for water, energy and waste management.*

*КЛЮЧЕВЫЕ СЛОВА: эко-город, устойчивое развитие города, транспортная инфраструктура, устойчивая транспортная модель, экологичные технологии, возобновляемая энергия, очистка сточных вод, переработка и повторное использование отходов.*

*KEY WORDS: eco-city, sustainable city development, transport infrastructure, sustainable transport model, environmental technologies, renewable energy, wastewater treatment, recycling and reuse of wastes.*

This paper investigates sustainable city development or the eco-city as well as key transport issues of current cities and environmental technologies for water, energy and waste management.

Changing urban development is a very challenging process. We need to change an urban form, transportation systems and water, waste and energy technologies to reflect the idea of sustainability.

In sustainable cities freeway and road infrastructure is weakened. On the other hand, transit, walking, cycling and rail infrastructure is strengthening. Car and motorcycle uses are minimized. Fig.1 compares key transport problems in current and sustainable cities.

**Fig.1. Key transport issues**

<b>Current cities</b>	<b>Sustainable cities</b>
<ul style="list-style-type: none"><li>• Cities are dominated by cars and motorcycles on the volume of traffic.</li><li>• Cars and motorcycles are a major cause of air pollution, noise and transport deaths in the cities.</li></ul>	<ul style="list-style-type: none"><li>• Walking, cycling and railway are the most popular transport means.</li><li>• High conditions for walkers and cyclists.</li><li>• High quality of public transport.</li></ul>

Now, in poor Asian cities motorcycles account for one quarter of the total volume of motorized traffic. Motorcycles are the cheapest form of transport for the poor cities with high population density. However, motorcycles are a major cause of air pollution, noise and transport deaths in these cities. Cities in the United States,

Australia, New Zealand and Canada greatly depend on cars, because they have the freeway and parking.

The most sustainable modes of transport are walking and cycling, but only rail systems are able to compete with cars in terms of speed. Therefore, this type of transport can be considered the most promising.

To achieve the sustainable city the quality of public transport, especially the railway, must be improved as well as conditions for walkers and cyclists, otherwise sustainable development concept will not be realized.

Current cities are “parasitic organisms”, because they are consumers of natural capital, e.g. water, energy and other resources, and producers of large quantities of wastes. Fig. 2 depicts the difference between cities nowadays and sustainable ones.

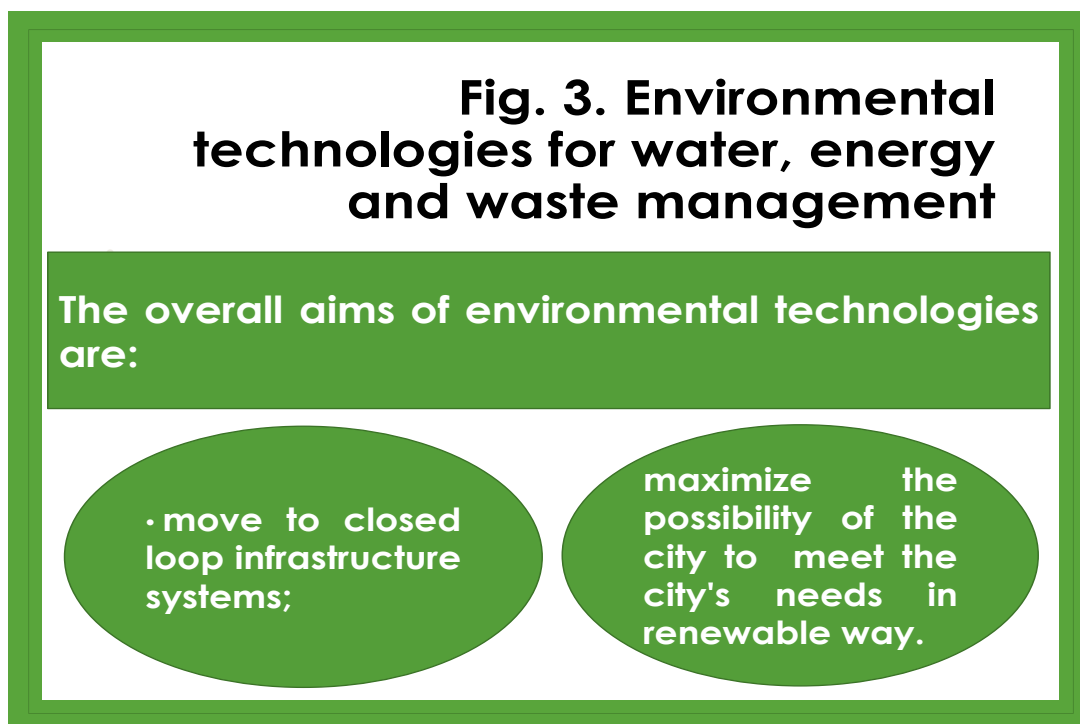
<b>Current cities</b>	<b>Sustainable cities</b>
<ul style="list-style-type: none"><li>• “parasitic organisms”.</li></ul>	<ul style="list-style-type: none"><li>• put in use environmental technology for water, energy and waste management;</li><li>• minimize waste;</li><li>• reduce the use of all resources.</li></ul>

If cities become sustainable, they must reduce the use of all resources, minimize waste and put to good use environmental technologies for water, energy and waste management.

Renewable energy can be supplied through solar hot water technologies and photovoltaics, wind energy systems and methane, etc. But for transport it is using electrically powered vehicles. Water can be collected and stored locally for its own use. Wastewater can be cleaned by using a local biological treatment system.

At the same time, cities must increase their standard of living.

There are two overall aims of environmental technologies as in Fig.3. The first target is maximizing the possibility of cities to meet their needs from the natural capital in a renewable way. The second one is moving to closed loop infrastructure systems that recycle and re-use wastes.



Therefore, the absorptive capacities of natural systems are not overwhelmed with the waste loads from urban areas.

Thus, these ideas conclude the points about the eco-city. We have examined key transport issues of modern cities and talked about environmental technologies.

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