Sustainable energy in the future – designing smart, green city models

SUSTAINABILITY

What is sustainability?

The word ‘sustainability’ includes concepts such as ‘I maintain, I support, I last’. There is no single definition of sustainability. There are many different views on what it means and how it can be achieved. The idea of sustainability stems from the concept of sustainable development introduced at the first Earth Summit in Rio in 1992.

SUSTAINABILITY, DEFINITIONS

Definition 1: It means responding to the needs of today without compromising the ability of future generations to meet their own needs (Brundtland Report for the World Committee on Environment and Development).

Definition 2: A process of change in which the utilization of resources, the direction of investment, the orientation of technological developments and institutional change are all in harmony and enhance both the existing and the future ability to meet human needs and expectations .

SUSTAINABILITY

For a better understanding of sustainability, let's look at some of its individual concepts.

SOCIAL SUSTAINABILITY

It is the ability of a social system, such as the state, the family or the organization, to function indefinitely at a certain level of prosperity and harmony. Problems such as war, endemic poverty, widespread injustice and low education are signs that the system is socially unsustainable.

ENVIRONMENTAL SUSTAINABILITY

It is the ability of the environment to support a certain level of environmental quality and a rate of natural resources extraction indefinitely. This is the biggest real problem in the world and, although the consequences of not solving the problem are now urgent, the problem is low on priority.

ECONOMIC SUSTAINABILITY

It is the ability of an economy to sustain a certain level of economic production indefinitely. This is the biggest obvious problem in the world since the Great Recession of 2008, which endangers the progress of solving the problem of environmental sustainability.

SUSTAINABILITY

Considering all the above, one could say that:

Sustainability is a model of production that aims at the best economic result for both man and the natural environment, both in the present and in the indefinite future. Its key element is the balance between the production of goods and raw materials (which were required to achieve production).

SUSTAINABILITY

The goal of sustainable processes is to achieve more production with lower raw material costs, which is why sustainability is mentioned along with recycling, renewable energy sources and bioclimatic design. Sustainability implies that natural resources are being exploited at a slower rate than the rate at which they are being renewed, otherwise environmental degradation will take place. Theoretically, the long-term effect of environmental degradation is the inability of the earth's ecosystem to support human life (ecological crisis).

SUSTAINABLE CITY

Before we talk about the sustainable city we should point out that in 2015, the world leaders, the UN, unanimously approved the 2030 Agenda for Sustainable Development. The Sustainable Development Goals are the path that leads us to a fairer, more peaceful and prosperous world and to a healthier planet. It is also a call for solidarity between generations.

SUSTAINABLE CITY

A sustainable, ecological city or green city is a city designed with social, economic, environmental impacts in mind and is a sustainable habitat for existing populations, without compromising the ability of future generations to experience it as well. From climate neutrality to circular economy, from cleaner air to cleaner transport, Europe has set ambitious environmental and climate targets.

The question is: how can cities become sustainable?

SUSTAINABLE CITY

Cities host about three out of four Europeans. They are complex systems, in which the inhabitants and the environment coexist in constantly evolving conditions. Despite their commonalities, every city and town in Europe is unique. They have unique characteristics that have developed throughout their history and are shaped by their geographical location, their inhabitants and their socio-political systems. As a result, the challenges facing cities vary considerably.

SUSTAINABLE CITY

Some cities are experiencing an aging or shrinking population, while others are constantly evolving. The decline of an economic sector, such as heavy industry, tourism or fisheries, can seriously affect the economies of some cities, while some cities can act as magnets for economic innovation, attracting new talents from across the EU. Similarly, the environmental impact may differ significantly.

SUSTAINABLE CITY

At the same time, despite their unique characteristics and the particular challenges they face, all cities must take steps to prepare for the effects of climate change. All cities should contribute to achieving the goals of climate neutrality, cyclical economy and biodiversity, ensuring a cleaner and healthier environment and providing better social and economic opportunities for their residents.

SUSTAINABLE CITY

The ultimate goal may be the same, but the path to sustainability must undoubtedly meet all the unique characteristics of each city, as well as the challenges. The European Environment Agency seeks to assist city authorities and policy makers in planning their transition to sustainability by examining urban sustainability from six different perspectives: **the circular city, the resilient city, the low carbon city, the green city, the inclusive city and the healthy city.**

SUSTAINABLE CITY

From creating green and blue areas within the city center to integrating public transportation with active mobility systems, such as cycling and walking, or developing more efficient recycling systems, there are many things cities can do to make the transition to urban sustainability. Wider adoption of technological developments, such as electric vehicles or teleworking, can speed up this process.

SUSTAINABLE CITY

Of course one will wonder: how can we achieve what is described above?

It is difficult to give a clear answer to such a complex question.

So what do we do?

Our answer will be based on a Chinese proverb which says: **‘the greatest journey in the world begins with a step, the first one’**.

We will mention two steps below.

SUSTAINABLE CITY, Step 1

"The city of 15 minutes": This is the model that promises to change our lives.

A new urban planning model promises to reshape the largest urban centers while improving the quality of life of citizens. **According to Carlos Moreno, the French-Colombian academic behind the idea of the 15-minute city**, the goal is to upgrade living standards by creating smart cities. In these cities, residents will be able to meet any one of their needs within a distance of - at most - 15 minutes on foot or by bike from their house.

SUSTAINABLE CITY, Step 1

The city of 15 minutes requires the minimum possible travel time between home, office, restaurants, parks, hospitals and cultural events. Each neighborhood should meet six social functions: **housing, work, supplies, care, learning, and entertainment**. Moreno argues that **15-minute cities** will be the answer to tackling climate change, by strengthening green neighborhood initiatives, by reducing mobility and by continuously expanding urban centers, which was the case in the past before the onset of the pandemic.

SUSTAINABLE CITY, Step 1

According to **Politico**, the mayor of Paris, **Ann Indalgo**, is considered one of the first ardent supporters of this idea. In fact, she based her campaign on the creation of 15-minute cities, which led to her re-election in 2020.

SUSTAINABLE CITY, Step 2

Sustainability in combination with education.

When in 1987 the former Norwegian Prime Minister and chairman of the **Brundtland Report Commission (UN)** spoke of sustainable development in **"Our Common Future"**, she did not know how important the term would be and how wide the phrase '**Sustainable Development Goals'** would be today. These goals are a historic milestone, highlighting the state of our planet, due to the overexploitation of natural resources, social inequalities and the loss of biodiversity.

SUSTAINABLE CITY, Step 2

But what does all this have to do with education?

Let us consider for a moment that our students, in a few years, will be citizens with responsibilities and that countless decisions will depend on them. The training and skills they have acquired during their basic training period will be crucial for their actions, so that they can take into account universal principles of sustainability, such as social equality, imitation, prevention, participation and access to information, shared liability and damage control.

SUSTAINABLE CITY, Step 2

Why not cultivate **sustainable capacity** alongside other basic competencies?

This new approach of all sectors is the backbone of their programs, and it would enable the development of active and participatory methodologies and consequently, the essential, contemplative and critical learning, benefiting and motivating the educational community and society.

SUSTAINABLE CITY

Closing our presentation, we would like to show two videos which are related to the topic because they refer to the **Sustainable Development Goals**.

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THANK YOU !!!