Choosing the best systems based on Renewable Energy in Energy Transition process

Introduction

The Energy Transition that began in the world is replacing the energy system based on fossil fuels with a system based on **R**enewable **En**ergy (**REn**). Director-General of the International Renewable Energy Agency, Adnan Z. Amin said transition's main goal greenhouse gas emissions and avoid the most serious impacts of a changing climate. A report commissioned by the German government concluded that the size of the global market for environmentally-friendly power generation and storage was approximately €313 billion in 2011 and would exceed €1 trillion by 2025.

However, existing Energy Transition process has several problems that do not allow to fully using all the potential opportunities of **REn**. Moreover, these problems can lead to global environmental degradation instead of improving it. Choosing the best system based on **REn** is one such problem.

We were the first in the world to offer the technology of choosing the best system based on **REn** for Energy Transition process. We called it the **N**oologistic **C**hoice a **R**enewable **E**nergy (NCRE). The word "Noologistic" is derived from the ancient Greek words **νόος** – noo (reasonable) and λογιτσιχη – logistics (art of counting). NCRE provides the choice of a Renewable Energy System which has the highest possible environmental cleanliness in existing operating conditions.

Noologistic Choosing a Renewable Energy

Brief description of the main idea

Modern energetic uses many types of **REn**. They are called "carbon-free" because there is practically no CO_2 emission at the place of their generation. Thus, it is impossible to choose the most "clean" the best system based on **REn** by the CO_2 emission volume at the place of their generation, because they all equal zero. This CO_2 emission is further categorized as **L**ocal CO_2 **Em**ission (**LEm**).

The obvious fact is the need to prepare and to support the technical ability to generate any **REn**. Equipment is manufactured, delivered to the place of work, installed, adjusted, maintained, repaired, disposed of, and also built buildings, facilities, serviced, etc. for this. The obvious fact is also that many CO_2 emissions may occur when prepare to generate any **REn** when performing the listed works. These CO_2 emissions are further categorized as due **P**reparation CO_2 **Em**ission (**PEm**).

It is also obvious that with the above preparatory work a large amount of energy may be expended. This energy is further classified as **P**reparatory **En**ergy (**PEn**).

To choose the best system based on REn, we propose to calculate for each of them the self-reproduction coefficient (K_{sr}) according to the formula 1.

$$\mathbf{K_{sr}} = \Sigma\mathbf{REn} / (\Sigma\mathbf{PEn_1} + \Sigma\mathbf{PEn_2} + \Sigma\mathbf{PEn_3} + \ldots + \Sigma\mathbf{PEn_j} + \ldots + \Sigma\mathbf{PEn_J}) \quad \text{- formula 1}$$

Symbols in the formula 1

$\Sigma\mathbf{REn}$ – the total amount of energy that is generated or will be generated by the system based on REn for the entire time of its operation;

j – type designation of preparatory work: j = 1, 2, 3, …, j, …, J.

$\Sigma\mathbf{PEn_1}$, $\Sigma\mathbf{PEn_2}$, $\Sigma\mathbf{PEn_3}$, …, $\Sigma\mathbf{PEn_j}$, …, $\Sigma\mathbf{PEn_J}$ – the total amounts of energy that were spent or shall be spent on a system based on REn, for the entire time of its operation to carry out preparatory works.

The best system based on REn has the largest K_{sr} value !!!

Attention!!!

If K_{sr} <1, then the use of such a system based on REn will degrade the environment and, moreover, it will never be able to replace systems based on fossil fuels;

If K_{sr} = 1, then the application of such a system based on REn will not improve the environment and, moreover, it will also never be able to replace systems based on fossil fuels;

If K_{sr}> 1, then the application of such a system based on REn will improve the environment and it will be able to replace systems based on fossil fuels.

Obviously, the decision to start Energy Transition was made without the above our estimates. Therefore, there is a high probability that the money allocated to it will be spent to the detriment of the environment.

Recommendations for overcoming the current situation will be published here later.

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