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GREEN ENERGY

OLTEANU VICTOR¹

Summary: *Strategic plans in the energy sector have the overall objective of the use of renewable energy, especially wind power, hydroelectricity, biomass intending a considerable increase in the share it has in total energy production. Thus, chase is moving towards an economy based on low carbon consumption and improve performance standards for the production, distribution and use of energy, helping to reduce greenhouse gas emissions, increase the use of renewable resources for energy production, to lower consumutilor. The aim of the study is to describe a few of production and technologies to reduce the consumption of energy in classical sources other than wind power and photovoltaic's.*

Keywords: *renewable energy, pollution, ecological technologies.*

INTRODUCTION

This article attempts to describe in a few words the concept of green energy. "Green energy" is a concept that refers to renewable energy sources and environmentally sound, but most importantly is how effective enforcement. I'll try to describe some of the production technologies and the reduction in the consumption of energy in classical sources other than wind energy and photovoltaic and in so doing, achieve the most important goal of the concept of ' pollution '.

Taking into account the European directive in 2005, known as the phrase "20/20/20" which establishes that by 2020, the EU must reduce by 20% the emissions of particulate matter and produce 20% of total energy from renewable sources. Also, the European Union States must gradually blend traditional fuel used in transport bio fuels, so that, by 2020, bio diesel to represent 5.75% of the diesel market, although, in 2020, the share increased to 20%.

Global Indicators Of Energy From Renewable Sources

	2008	2009	2010	2011	2012	2013
Investment in new capacity of renewable resources (annual; \$ mil.)	130	160	211	257	244	214
Energy power capacity from renewable resources (GWe)	1,140	1,23	1,32	1,36	1,40	1,56
Hydro-power capacity (GWe)	885	915	945	970	990	1,00
Wind power capacity (GWe)	121	159	198	238	283	318
Solar/photovoltaic capacity (GWe)	16	23	40	70	100	139
Solar hot water capacity (GWth)	130	160	185	232	255	326
Countries with policy objectives for the use of energy from renewable sources	79	89	98	118	138	144

At a first glance I be tempted to believe that investments in renewable energy have begun to decline starting in 2011, actually decreasing the amounts invested are due to lowering prices of equipment, a fact which demonstrates that green energy can be profitable in the not so distant future.

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MATERIALS AND METHOD

Green technologies

Tubular Skylight (solar Tubes) with embedded LEDs

Tubular Skylight allows you to bring natural light into the interior space and allows control over the amount of light that it distributes. The skylight can be closed if you want to rest during the day or to watch your favorite shows on television. Built-in illuminator with LED technology gives night-time up to 4 hours of warm light, subtle while the sun sets. Captured light in the room is enough to light an area up to 150 sqm.



Advantages:

- Tubular illuminator brings natural light into the interior space and reduces energy costs;
- Acrylic diffuser can be removed for easy cleaning;
- Illuminates an area of up to 150 sqm.
- Feature LED watch is designed for intermittent use and provides up to 4 hours of warm light;
- Easy to install, maintain;
- Technology incorporated with LEDs comes with a solar panel and 4 debate League with an autonomy of up to 4 hours of warm light.
- The total length of the plant can be up to 40 m.

This technology can be used easily in animal stables, warehouses, halls, access staircases, etc.

Replacing conventional lighting with LED



Benefits of using LED lighting vs. conventional lighting

Surely you have heard of the benefits of led lighting as compared to traditional lighting. When compared to traditional methods of lighting you'll notice that the LED illumination is the most intelligent and efficient in economically and environmentally, coming up with lots of benefits.

Benefits:

Long service life

The life of the LED backlighting is a major benefit. LED light bulbs with an average lifespan of up to 100,000 hours, meaning about 11 years of continuous operation.

Increased energy efficiency

LED lighting is currently has an 80% efficient compared with conventional lighting, that means that 80% of the electricity used is converted into light, and only 20% of the energy is lost through transformation in heat.

Environmentally Sound

The materials used for LED lighting are non toxic and are 100% recyclable.

Durability in use

The materials used gives an increased resistance to shock and vibration, this making it ideal for outdoor lighting, operating conditions, such as: moisture, heavy dust, very low temperatures.

Design Flexible

Thanks to material and manufacturing technology of LED lighting bodies can take a variety of forms, from the classic form of the incandescent light bulb up to flexible tapes.

Low power consumption

LED lighting technology requires little energy consumption, the use of ideal lighting with solar panels.

THERMAL INSULATION FOR WALLS AND WINDOWS

As the energy is becoming more expensive, makes us more careful with the way in which we consume. The materials and techniques of thermal isolation had not received a very great attention until recently, due to the increase in cost per meter built. But the increase in the prices of energy, put an increasing pressure on the adoption and implementation of such solutions. The most important reason for improving heat of a building, is to reduce the exchange of heat between the inside and outside, thus reducing the cost of heating and cooling that building.

Windows with insulating glass Lowe

Insulating glass or glazing in the popular name is a sandwich consisting of two sheets of glass bonded through a perimeter aluminum rods and rubbery membrane-type sealant. The result is a lens with high thermal insulation features that keep the transparent windowed spaces required.

Lowe glass is a special case of heat-what is joinery requires increasingly more on the market thanks to the excellent thermal insulation qualities. The name of Lowe, translates into reduced emission, i.e. the transfer of heat through a glazed surface greatly reduced, and is produced by treating a sheet of glass with a special silver solution.

To improve thermal insulation but especially for the noise between the glass sheets can be inserted an inert gas, such as argon, low mobility of the molecules that compose this gas provides a special noise reduction taken into the House through the Windows.

Advantages:

- conserve the warmth in the House in winter and keep cool, summer;
- provides good sound insulation;
- the glass is treated, so that filter the heat and allow the passage of light inside, without producing "greenhouse effect".
- are resistant to tampering and there is a risk of accidents;
- cold air that penetrates from the outside, through the holes in the lower part of the window heat in rooms inside carpentry, climbing up to the top, so that it enters the room warm;

The walls and roof

Insulate the walls and roof are times what material or technique used to reduce the exchange of heat between the inside-outside. In 2008, a year in which he started the great process of the thermal rehabilitation of housing blocks, Romania has developed an affinity for thermal insulation-based foam plates, maybe also because of the lowest price per sqm built surface. At its core is not a bad thing, because something is done in terms of thermal insulation of the walls. But long-term polystyrene has a lifespan shorter than other materials I used in thermal insulation, does not allow the wall to breathe which helps in the formation of condensation and mildew, thickness of plates in order to reach the same yield as a result of other materials for thermal insulation.



In recent years the materials for thermal insulation industry has developed new techniques and materials with more performance and a longer service life than having so a report much better cost-efficiency. We can mention: mineral wool, metal or PVC panels sandwich filled with mineral wool or polyurethane rigid foam, rigid polyurethane foam applied directly to registered buildings and with many curved surfaces where installing the plates is impossible or very costly, Multipor plates being rigid mineral products, which enable the transfer of vapors and which can be used both on the exterior and heat insulation to the inside. But the essential criterion in Romania is the lowest price regardless of quality or performance, so remains and will remain classic plating polystyrene plates.

UNDERFLOOR HEATING AND COOLING

The energy exchange between the man and a cold surface is done through the exchange of energy. In this sense, the cooling systems and floor heating ensures optimum comfort. Air-conditioning systems of floor surfaces, heated or cooled using low amounts of energy due to uniform distribution over the whole surface.



Benefits of under floor heating

- The heat is evenly distributed on the entire surface of the floor, causing a high thermal comfort and, most importantly, constant.
- The heat travels from the bottom up, first by heating your feet, which are the parts most exposed to the heat sensitive;
- Low power consumption-thus, because the air in the room to reach the 20-23 c, the floor must be heated to 25 c, which is more than enough (because of cold or warm feeling comes primarily from the extremities);
- Flexibility in the arrangement of spaces-by eliminating radiators is a more efficient allocation of storage space of a room.

GENERATORS WITH PERMANENT MAGNETS

Presents the following advantages:

- Reduction of torque (cogging) starting (breaking) to values below 0.8 Nm which means that it can generate current to the weakest waft (at under 2 m/s);
- The electrical power generated grows exponentially with speed, increasing the ratio feature

power generated/outline;

- Drive torque (resistant) to the shaft has a Gaussian evolution in relation to the growth of electric charge and is lower for the same power charged, compared to other synchronous generators with excitation by permanent magnets; In the short and in the minimum values;
- Generator shortage to overload and short current due to elastic deflection;

Which it recommends for:

- Battery charging the rechargeable batteries in the systems of autonomous RENEWABLE in any configuration of voltage (up to 90% of the U_0) without further limitation devices and adaptation;
- Vertical shaft wind turbines or Hydro turbine-horizontal or without the use of reducers or speed hub;

HYDRO GENERATORS

Have the highest efficiency in the production of alternative energy because it theoretically works round-the-clock. If you have a small Brook, or a bad, around the farm, which can provide at least 5 liters/sec at an elevation of at least 3 m. You will have free and eco-friendly energy unlimited.



A Creek behind the farm and several thousand euro is pretty much everything you need to make your own electricity provider. In this situation, the cheapest and effective it is to produce electricity using a power small hydroelectric power plants. The energy produced from such a hydroelectric generator, beyond the fact that it can be free, if you



don't buy from the neighbor who rushed to secure energy independence, has the great advantage of not polluting.

- Permanent magnets turbine 3000w (3 kwh)/220V-500 euro
- Turbine 55 kwh/380V-14,300 euro

Investment can vary between 3000-40000 euro.

CONCLUSIONS

Changing the current mentality of the green energy: green energy is not a trendy concept with which you can brag about social networks or between friends at a party. The main purpose of the use of renewable energy is to reduce the extent of pollution by reducing energy consumption in the classical sources. As an example: it is not enough to mount a solar heating plant to produce hot water and heat, if the premises where it is used is not properly insulated. Unfortunately the examples of this kind may continue.

The granting of subsidies for the implementation of ecological solutions for the production and conservation of energy, on the basis of sustainable projects. For example: wouldn't it be appropriate to install on home photovoltaic panels to produce electricity, but to destroy the trees around the House that you may not make shade panels. Can these examples are pushed to the extreme, but the little that I want to emphasize that although the concept of green energy is not something new, however are applied in a fairly chaotic.

In addition to the current legislation and trends in the European Union on the concept of green energy should be developed in Romania and an infrastructure to support and develop the concept of green energy. For example: the ability to resend in the network the amount of energy produced by the ecological methods when it is not used to use it when needed; the granting of tax cuts for companies that implement buildings, sustainable green energy concepts;

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