Energy and Natural Resources Conservation – Benefitted Goal for organization

With view of today's energy crisis it becomes inevitable for facilities to be energy independent in near future for their operations. Facilities which use the energy on large scale need to think about same and plan their upcoming construction / retrofitting project in such way that it will use maximum renewable energy and use fewer natural resources. Even the existing facilities can incorporate these solutions by undertaking renovation of their facilities as it will profitable in long term

As per Wikipedia, in 2016 the total world energy came from 80% fossil fuels, 10% biofuels, 5% nuclear and 5% renewable (hydro, wind, solar, geothermal). Only 18% of that total world energy was in the form of electricity. Most of the other 82% was used for heat and transportation.

Following are some simple ways which will helpful to facilities for energy and natural resources conservation:-

1. Open to sky architecture: Facilities can be design with more transparent domes, heighted and broader window etc. through which we can use maximum sun light in building during day time and it will help to save more energy which is used for interior lighting. To eliminate heat we can use heat protective glare/films on domes and windows.

2. Renewable energy taping solutions: Renewable energy sources like solar and wind is available in abundance and supply free of cost by nature. So facilities can use these resources to produce the electricity at site and use for their consumption. Any excess production can back feed in grid and facilities can avail the credits to get discount in their electricity bills. These energy production model require large CAPX initially but its benefit will be more in long term as well as there are few players in market which help to get these solution in OPEX model too so it will help organization who don't want to do CAPEX.

   In near future Zero Energy Building will be in demand as it will not only help the facilities to save large cost on purchase of electricity but also help environment by less carbon emission indirectly. Following are current solutions which is easily available in market to produce electricity at site

   a. Solar rooftop: Solar rooftop is easy to installed and maintain structure through which we can cater the building energy requirement by catching solar energy through solar panels This source is abundance in supply and help to save the large money outflow in terms of energy bills.

   b. Wind Turbines: A small wind turbines produce approx. 10932 KW of electricity annually with average wind speeds which is enough for a house which used approx. 909 KW per month. So in this sense the organization can do the technical survey of their facilities and can use this source for their energy needs.

3. Proper ventilation for HVAC System: Ventilation system used in HVAC to provide high indoor air quality which involves temperature control, oxygen replenishment, and removal of moisture, odors, smoke, heat, dust, airborne bacteria, carbon dioxide, and other gases. A proper ventilation help HVAC System to use natural air efficiently and maintain the requisite temperature. It will further help HVAC system to work less by improving airflow, recycle outgoing energy, lowering humidity levels etc. which result in energy saving.

4. More greenery inside: By keeping more indoor plants, vertical gardens etc. help for freshening indoor air. A comfortable indoor air will help HVAC system to work more efficiently and economically.

5. Gravity water pumping system: Hydro pneumatic system looks neat and sophisticated but when there is water outflow the pumps gets ON to maintain the pressure but in traditional Gravity water pumping system the tank is installed at top of the building and water is filled from ground by operating pump for few hours as per requirement. Hence, it helps to save a good amount of electricity.

6. Rain water harvesting: Buildings can make provision to store and filter rain water in underground tanks and used for the various facilities requirements. In said plant the water is collected from terrace and routed to storage tank through down take pipes hence no single unit is used to collect the water as gravity will do all the work as well as excess water after filling the storage tank can routed to bore well/ ring well which help to increase the ground water level in nearby area and help community to extract these water through their bore wells/ring wells to use.

7. Use reusable building material: Using reusable building material made from fly ash, granulated blast furnace slag, recycled concrete, demolition waste, reclaimed asphalt pavement, used tires, micro silica, glass beads, electrical and electronic industry waste, plastic waste etc. instead of conventional building material is ecofriendly as well as approx. 50% to 75% cheaper too.

8. Carpooling: Large facilities can create platform where the employee can get update of sharing same route and accordingly connect with each other and pool vehicles which will save the money, reduce carbon emission, easing load on public transport, less traffics etc.

9. Use biodegradable garbage bags: Using biodegradable garbage bag which is made from natural materials like corn starch will get degraded easily and do not create the serious impact like plastic, which get in to soil and realse toxic chemical slowly and impact environment.

These are the few steps which facilities can take for their energy and natural resources conservation goal and help for more breathable earth. Energy and natural resources

conservation will help the societies on large but also organization get some benefit by saving considerable amount of operational expenses. Organization those take this kind of initiative will get benefit to have green building certification and ESG ratings for their facilities.

The ratings received from IGBC *(The Indian Green Building Council (IGBC), is part of the Confederation of Indian Industry (CII)* was formed in the year 2001.) will help to get 25% subsidy on total fixed capital investment of the project (*excluding cost of land, land development, preliminary and preoperative expenses and consultancy fees)*. This incentive is applicable for MSME and large industries.

ESG is stand for Environmental, social and governance and there are three leading international agencies like Bloomberg, MSCI and Thomson Reuters who publish the ratings for the ESG initiatives taken by registered organisation in year. These rating will help organisation for better operational performance, Positive Stock price performance, lowered the cost of capital etc. So it is highly recommended for organisation to make the vision for energy and natural resource conservation to avail the lot of direct and indirect benefits and serves societies with responsibility.