

Conventional energy sources, demand, consumption sector, efficiencies, losses

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Abstract — this report will outline the primary energy resources around the globe with its uses and importance in different fields along with a presenting image of the energy shifts in the modern world focusing mainly on the conventional energy sources or fossil fuels, how well it works in today's available technologies and a key factor of losses along with a touch to the list and dangers that are associated with these fixed energy resources. Moreover, it will also highlight the risk and factors affecting these resources.

Key words – *Conventional, Fossil fuels, Energy, efficiencies, demand and supply.*

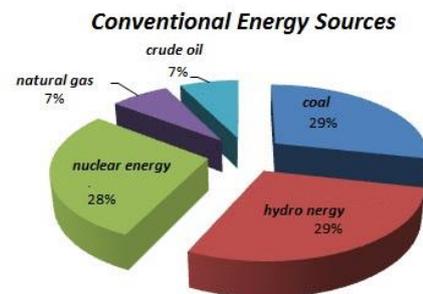
I. BACKGROUND KNOWLEDGE

Energy is the essential part of our daily life. Starting from the dawn of the evolution of man to the industrialization in the 19th century these sources are being used and are on depletion. The growth in energy sector is directly in proportional to the success, development and prosperity of a nation. The energy demand is increasing day by day with the increase in needs of mankind and we know that these will limits once. To cope this key challenge efforts are being taken by the entrepreneurs, engineers, experts and scientist considering operating as safe environment across the globe. Sources of primary energy (natural gas, coal, petroleum) would last for no great time as with its fastest usage in the homes, industrial and manufacturing purposes by the distinct areas in life. Great efforts to obtain a numerous amount of energy from these resources have been experimented and applied despite of these losses are still present in this energy sector that further needs to address and work on. Different energy saving measures and previewed. Energy shift from the past few decades have been observed once the scientist predicted the numerical growth in energy consumption due to the industrialization and with the increase in population as frequent around the globe. In the next three to four decades crisis in energy sector is at high risk and eventually there would be at last a energy war countries will start. Petroleum products will be extremely scarce and the danger of climatic change with the use of these conventional energy resources will becoming high with pace. A change in thought for diversifying the utilization from the conventional energy resources to the creation of renewable energy resources has been applied and the results were found satisfactory. On the other hand the all the environmental, technological, and

political dangers of using these conventional energy resources are not left a part from the discussion, the reduction in the consumption of power and energy along with methods of developing new energy resources. Many of the energy is wasted as loss or power dissipation in operating of machineries in the friction, transmission of energy from one form to another and while doing work.

II. Discussion

The energies which are obtained from the fixed energy resources in the nature like natural gas, petroleum, coal and wood in other term they are also known as the fossil fuels. The energy produced by the process in hydropower can also be called as conventional since all natural resources are used for power generation with technology. In order to differentiate between the conventional and non-conventional energy resource one key point should be kept in mind that all those sources of energies that are not able to reuse after taking its energy once should fall into the circle of conventional energy resources. There are certain advantages of these sources that includes the ease to access, it is much more easier to use, the availability of these abundant resources mostly everywhere, this is known as the free gift of nature to fewer countries with much mature results when subjected to given requirements it can reliably produce the energy which can be dependably predicted. The following pie chart shows the conventional energy resources along with its percentages:



A study have been predicted that the world energy consumption is been increasing day by day to reach the level

of 778 Etta Joule by 2035 [1] that is critically impacting the global economics and the topic of discussion. Countries with faster in economic growth are much in need of such resources which are vital and a measure of competitiveness for providing needs. World energy consumption is increasing from a 33% from back in 2010 to 2030. The total energy consumption from conventional sources was 82,919 ZW in and then is expected to reach 198,654 ZW in 2030.

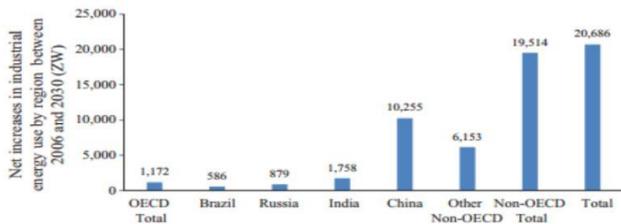


FIGURE 1: Net increases in industrial energy use by region between 2006 and 2030 (ZW) [8] [9]

Therefore, a strategy to meet energy demands is of great intentions. An efficient energy management system would lead the path paved for a developing nation. The use of such resources should be optimized with better technologies that can take the crux out of it with a greater efficiency and not to waste much of its energy since it is stated as these resources cannot be reused. Adjusting the system of energies that use conventional resources as input for a greater output [10] nowadays the role of energy management has been greatly raised in each sector starting from the household to the industrial larger sector. Top management personals in every manufacturing and construction field are striving hard on daily basis to overcome and deploy methods to reduce ways of less power or energy dissipation. Annual reports of energy reduction is continuously monitored and evaluated that leads to more of energy used as work instead of losses. Historical data is taken; analytics are being done along with the engineering investments to improve it to significant figures with training workshops. Usually eQuest which is known as simulation software is mainly used to analyze the many effects of energy savings in industrial, building, malls and equipment's. sun based vitality is increasingly plentiful, however has the issue of scattering examined previously. Eventually sooner rather than later, it should turn into the prevailing and really monstrous, reasonable and boundless sustainable power source. That will require the arrangement of innovative issues that limit its spread and influence its present significant expense, and will need unequivocal open help.

The conventional energy consumption at the household around the globe is total of 15 to 30 percent the more increase in standard base living the energy consumption in this sector will leads total about 35% in future by 2030 [4] below figure gives

a sum of data around the subcontinents for household energy consumption.

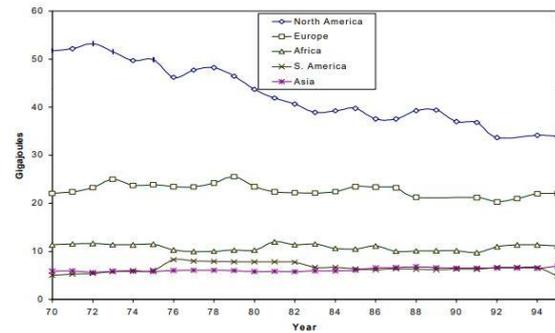


FIGURE 2: Per capita household energy consumption in world regions SOURCES: United Nation Statistical Division.

Let's us take a look onto the figure given below where it highlight how is the conventional energy resources are being used around the globe. The following figure gives a data back of 100 years from 1918 to 2018 [3]

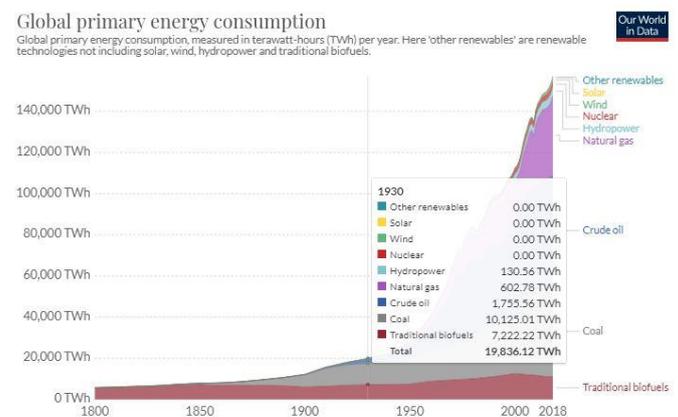


FIGURE 3: Global Primary Energy Consumption. SOURCE: Vaclav Smil (2017)

Around the globe the consumption of crude oil is about 32 percent out of which roughly of 63% from the 32% is used by the transport. Similarly, 22 per cent from the conventional energy sources are comprised that of natural gas with a share of around 40 percent from the coal all of them are continuously used by the sectors of transportation, industrial , steel manufacturing , road construction , cement manufacturing and for the generation of liquid fuels. China, around the globe is the topmost consumer of conventional energy source that of coal lacing behind USA. Besides these natural and prominent the other forms of conventional energy sources such as Geothermal also plays a vital role and round to 75 TWh for heat and power the energy is taken out from this source. At a current consumption rate it is predicted that these petrol resources will last for more of the two upcoming decades.

Conventional energy resources are limited and a great caer should be followed in term of using these energy resources. The efficiency of conventional energy sources are termed as the rate of the output energy / power given to the ration of the

input energy time and cost consumed in the extraction of these resources. In a general, they are recorded as efficient. Mainly source of energy that is generated worldwide from the conventional energy resources is that of electricity and heat. District heating and the thermal power plants along with coal power plants and industries technologies have shown these energy resources to be the most efficient and reliable as compared to other energy resources. On a direct sight in different energy sectors we see that a larger amount of these energies are also wasted in different forms daily. There still remains a large potential further to save the energy across all sectors despite of the great work that had been done. Upon best practiced if followed for normal operating procedures in industrial sector can sum to save between 18% to 26% of current primary sources of energy in the industrial sector especially in the iron and steel, cement, chemical and petrochemical structure. In the domain of the electric power generation if all the bodies involved around the globe start to produce electricity at current best level of efficiency by deploying new updated processing and technologies can reduce the consumption of fossil fuels ranging from 23% to 32% around the globe. Beside energy saving the largest reduction in the emission of Co₂ and other harmful materials can be achieved by the improving the processing of coal fired power plants. Focusing on the energy efficiency is a vital challenge for both of the climate and energy sectors. The rate of efficient energy production needed to be sustainably increased to the extent to achieve a more good energy future. It would be the catch phrase in the domain of economic, social, environmental, and further educational activities.

III CONCLUSION

To sum up all the above discussion in a brief passage we came to state that all the governmental and energy sector related bodies have still many things to perform in order to produce and launch an appropriate and proper policy with much excellent result. The benefits of updated energy policy are useful which would reduce investments in energy infrastructure, lesser dependency of fossil fuels, and increasing the competitiveness along with the consumer welfare improvement. We must find alternatives and options to reduce the use of these conventional energy resources and develop proper optimistic and optimize plan for the usage of these resources in more and more reliable way to achieve the more out of it for an efficient and safe usage and a prolong period of time.

Balancing of both the supply and demand and taking out the most of all opportunities and options available in correlation with taking benefits from the renewable energy resources that are present can be followed for usage. Furthermore, the improvement are still needed for the improving the availability, quality, and other parameters that are directly associated with these resources. The local societies should also play their important role e.g. by using the utensil that consumer lesser amount of energy and change the use of energy. Nonetheless, a private car with 0.25 efficient if can be used by one person

instead to be deployed for four people could save the energy consumption for total of three cars at the same time can also aid in the reduction of consumption of these fossil fuels. Two most of the crucial elements that will be enhanced are the 1) carbon footprint 2) economic justification. Conventional energy source though having both the elements of producing carbon emission and the impact of global warming with its pace of usage is increasing but the economic consideration for a developing nation is merely affected. The optimization would lead both in reduction of the emission of the greenhouse gases to the upper atmosphere along with a more sustainable way for achieving the goal in an appropriate way.

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