



IJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 9 Issue: III Month of publication: March 2021

DOI: <https://doi.org/10.22214/ijraset.2021.33503>

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Evolution in Human Lifestyle due to the Impact of Developments in the Field of Electrical Energy

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Abstract: Last few centuries has witnessed paradigm shift in the human lives, which can be mainly attributed to the great inventions in the field of Energy generation and its utilisation. This paper discusses about the impact of developments in the field of electrical energy and associated evolution of human lifestyle. All this was possible due to the different inventions that happened in the due course of time. The development in electrical field has been a major reason behind the modifications which we see now in the society. With every single discovery, the course of life has been changed and thus we have finally reached the stage where life has become more comfortable and accommodating.

Keywords: Human life, evolution, discovery, invention, electricity, developments, transmission, generation.

I. INTRODUCTION

Human life is affected by almost everything in our surrounding. The happenings, the components, biotic and abiotic features or for that matter of fact, even the inventions. The course of our life changes with the amount of discovery and inventions that ease the lifestyle. The invention of electricity and advancements in this field being a major contributor. This paper has been covers century wise developments in the field of energy and its impact on the human lifestyle, which is discussed in the three sections below.

II. INITIAL DEVELOPMENT ERA

The wheel of revolution in field of electricity started to rotate in 1752 when Benjamin Franklin ran his famous kite experiment that sparked the discovery of electricity and proved that static electricity and lightning were one and the same thing. Thus Franklin laid the stepping stone and to all the scientists around the world and they started to work around the idea to develop electricity. In 1835, the first constant electric light was demonstrated. By October 1879, Thomas Elva Edison finally produced that light bulb for which entire human race was waiting. He also made other improvements to the light bulb, including creating a better vacuum pump to fully remove the air from the bulb and developing the Edison screw. Edison's contribution towards the making of light bulb are and will always remain historic.

Invention of bulb brought drastic behavioural and social changes in the life of people. Earlier the working hours were limited to day time only but now they were extended even after sunset. As a result society started moving on the progressive path. Due to increased work the economy was also strengthen and people had more money to spend. This lead to the development of prosperous society. Hence due to light human perspective towards life completely changed. A new world of night life was opened in front of them.

III. INDUSTRIAL REVOLUTION ERA

Moving towards 19th century generation and transmission of energy was a major problem. In the times before industrial revolution production of electricity even for daily use was a big concern. At that time scientist started searching for the batteries that could provide long lasting power. Samuel Insull consolidated all the smaller generators and chose to generate electricity by bigger and more efficient generators. Generators and motors underwent substantial development in the middle decades of the 19th century. By 1930, AC power systems were evolved up to a large extent. French, German, Belgian, and Swiss engineers evolved the most satisfactory forms of armature and produced the dynamo, which made the large-scale generation of electricity commercially feasible. As soon as the problem of generation was solved another issue arose, the question of electricity transmission. The first high voltage line was built between Lauffen and Frankfurt in Germany. The controversy surrounding the transmission of electricity was finally resolved, this was the stage that decided the future of electricity transmission. With the major problem of transmission solved and the industrial production of electricity became possible, the first technical applications came into being: electric lighting, telegraph and telephone. The second industrial revolution had begun! Electricity moved into many areas such as industry, railway transport, street lighting before it went into homes.

The invention of steam engine had been a milestone that speeded up the transportation. But its inherently low efficiency and high mass/power ratio led to its rapid displacement by the engines that worked on electricity. Thus the development in transmission lines proved to be a boon in many other fields also.

Earlier key problem in the society was communication gap. It took days to travel and also chances of returning safely back from voyage were slim. As a result the community lacked the feeling of security. Many families were up rooted and hence people always lived with fear and tension. But transmission of electricity proved to be a major boon in such situations. With electric engines coming up, not only the traveling time reduced it became extremely safe. With the telegram and telephone services individuals were able to communicate with their near and dear ones. Feeling of love and compassion increased amongst the people. Women and children started feeling safe and secured. Thus the improved bonding and compassion helped to build a new society that was based on trust and sense of belongingness. This kind of evolution was seen in the human mankind with invention of electricity and transmission lines.

People started realising that though coal based electricity generation is beneficial but it has its own disadvantages too. Firstly fossil fuels are limited and they are going to exhaust in years to come. Other than that fossils fuels are one of the major cause of pollution. Hence environmentalist realised that it was high time that an alternative source of energy was needed. This is where renewable energy sources started coming into picture. Electricity can be produced using number of different sources, such as hydraulic energy, wind power, chemical reactions as in batteries or radiation as in solar panels. The need to generate electricity while reducing carbon emissions and promoting renewable energies is now a central concern. Lot of work has been done all round the world for improvements in efficiency of renewable sources. Presently they are used as a subsidiary option to fossils fuels but surely in coming time these sources are going to take front step and entire power grid is going to work on it.

There came a time when people were happy with their personal lives, they had everything they wanted; all thanks to the discoveries in the electrical field. This is when a feeling of taking care of society and environment and giving something back to them arose among individuals. They realised that all of these years while developing themselves they had totally neglected the Mother Nature and its high time they take care of it and nurture it once again. As a result people started looking for ways through which electricity is generated and Nature is also preserved. Hence renewable energy alternatives came ahead. This was the phase when a sense of responsibility was developed within the society and all came together for protection of environment.

IV. MODERNISATION ERA

The 21st century has its own significance and has taken the electrical development to its zenith. From lithium ion batteries to Electrical vehicle (EV) entire human lifestyle is set to change in coming years. With lithium ion batteries in market long lasting power is available. It is a type of rechargeable battery. Lithium-ion batteries are commonly used for portable electronics and electric vehicles and are growing in popularity for military and aerospace applications. These batteries has a wide range of use. They are used for electric tools, medical equipment, and other roles. NMC and its derivatives are widely used in electric vehicles. This versatile usage of the battery is the main reason behind its growing popularity. Also due to the increasing prices of fuels world is turning their attention towards electric vehicles. Many companies are bringing very efficient electrical vehicles in market and they are surely the talk of the town. Worldwide governments are providing funds and giving incentives for promoting production and usage of electric vehicles.

The electric vehicles were introduced into the market with a thought for having a better life style. Cleaner air to breathe, quitter cities to live and reducing carbon emissions are the main thoughts behind promoting these vehicles. People realised that they have to leave behind a safe environment for their kids to grow and as result electric vehicles are growing popularity. In the 21st century again a sense of responsibility and love can be seen growing in the society towards the generations to come.

V. CONCLUSION

The point being we are trying to make here is, Energy use is central to human activity for preparing food, warming homes, powering travel, producing goods, and for many other purposes. "The history of human culture," wrote one historian, "can be viewed as the progressive development of new energy sources and their associated conversion technologies". So, precisely we can conclude that the influence of advancements in technology and electricity came as a by-product contributing human evolution. The progression of our thoughts, decisions, feelings, health, etc. have been always accompanied by the kind of technology we use and will continue to remain so. Ultimately, we can say that evolution of human race and developments in the electrical field have always been the two sides of the same coin and both will forever continue to go hand in hand.



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