

## The Journey towards Renewal Energy in India



Let's take a brief look at this journey towards renewal energy.

At the time of independence, India relied heavily on coal to meet its energy demands. However, India has always been committed to looking for more alternative energy sources for sustainable development.

**Nuclear energy** is an important source of clean energy. In India, it started in 1950s when Bhabha Atomic Research Centre (BARC) was founded to secure the country's long-term energy independence. Today, we are the only developing nation with indigenously developed nuclear reactors for electricity generation. This was made possible through several decades of extensive scientific research and technology development. We must be grateful to our scientists who put in their efforts for decades in extensive scientific research and experiments. For India, Nuclear energy is the fifth largest source of electricity in the country.

**Wind energy** infrastructures installation started in India during the 1960s primarily for supplying irrigation water. Wind power in India has significantly increased its generation capacity in recent years. Today, we have the 4th largest wind power capacity in the world, endowed with a constant movement of wind, especially in the Southern, Western and North Western regions.

**Solar energy-** We Indian worship the sun as a life-giver to our planet since ancient times. The research and technology gave us the understanding of sunlight as an energy source. India is endowed with vast solar energy potential. Solar energy based applications have benefited millions of Indians by meeting their cooking, lighting and other energy needs in an environment-friendly manner. Today, India ranks fourth in the world in Renewable Energy Installed Capacity. India has spearheaded the International Solar Alliance (ISA) which is a platform to increase deployment of solar energy technologies. The Alliance aims to efficiently utilise solar energy to reduce fossil fuel dependence, thereby creating a greener world.

**Hydro Power-** It started with major hydroelectric power projects appearing on the scene of India's energy arena. Over the years, many policy and regulatory initiatives have promoted hydropower development and facilitated investments. Today, we are 5th in the world in usable hydropower potential.

**Biomass-** India has a vast availability of biomass resources, making it an attractive option for energy production. It is renewable, widely available, carbon-neutral and has the potential to provide significant employment especially in rural areas. Rapidly evolving technology has enabled thermal power plants to have more economical and energy-efficient operations. India has co-fired Biomass in thermal plants across the country to reduce its CO<sub>2</sub> footprint in thermal power generation. Biomass power/co-generation programme since mid-nineties.

In the Coming decades, India's energy demand is expected to increase more than that of any other country due to its sheer size and enormous potential for growth and development. Therefore, most of this new energy demand must be met by low-carbon, renewable sources.

Also, with the increased support from the Government, this energy sector looks attractive from investor's perspective.

As India looks to meet its energy demand on its own by 2040, renewable energy is set to play an important role.

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