MAHATMA GANDHI MISSION

Assignment - 1.

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Energy is lifeblood of modern civilization. Energy independence is a very critical goal for our nation, ensuring sovereignty, economic stability, and environmental sustainability. By implementing this strategy, we can reduce reliance on energy imports and transition toward a resilient, diversified, and environmentally friendly energy system.

1) Renewable Energy Development.

a) Solar energy :- ~~With average~~ Solar radiation our country holds significant potential for solar energy generation. Therefore, major emphasis will be placed on expanding solar infrastructure, including rooftop installation and utility-scale solar farms. By leveraging advancements in solar technology and implementing supportive policies such as feed in Tariffs and tax incentives.

b) Wind energy :- ~~Our~~ Certain regions in our country experience favorable wind conditions. These areas will be targeted for development of

wind farms, contributing to our renewable energy portfolio. Investment in wind energy infrastructure, coupled with grid integration improvements, will enhance reliability and efficiency of wind power generation.

c) Hydroelectric Power :- our country possesses significant hydroelectric potential. By optimizing existing hydroelectric facilities and exploring opportunities for small-scale hydro project, we can capitalize on this renewable energy source to meet our electricity demand. Additionally, pumped-storage hydroelectricity can be employed to store excess energy during period of low demand for later use.

d) Geothermal energy :- It can provide reliable baseload electricity, complementing intermittent renewable source like solar, wind. Through targeted exploration and investment, we can unlock the full potential of geothermal energy.

2) Energy efficiency Measures.

Encouraging adoption of energy-efficient technologies through incentives and public awareness campaigns. Investing in research and development to enhance energy efficiency in transportation,

manufacturing and other energy - intensive sectors. Implementing demand - side management program to optimize energy consumption and reduce peak demand on grid. Setting stringent energy efficiency standards for building, appliances and industrial processes.

3) Infrastructure Upgrade.

- Modernizing transmission and distribution network to accomodate distributed generation and facilitate seamless flow of electricity.
- Investing in smart grid technologies to improve grid reliability, enable demand response capabilities, and enhance energy efficiency.
- Deploying energy storage solution such as batteries and pumped - storage hydroelectricity to store surplus energy and mitigate intermittency issues.

4) Diversification and Innovation.

- Harnessing biomass and biogass for electricity generation and heat production, utilizing organic waste streams as ~~feedbad~~ feedstock.
- Investing in research and development of emerging techologies such as hydrogen fuel cells and advanced biofuels to diversify our energy

portfolio and foster innovation.

- Exploring tidal and wave energy as potential source of renewable power, particularly in coastal regions with strong tidal currents.

5) Education and Capacity Building.

- Supporting research and development initiative to address key challeges and advance renewable energy technologies.
- Developing circulum and training program tailored to needs of renewable energy industry in collaboration with educational institutions and vocional training centre.
- Supporting ~~research~~ scholarship and internship to student pursuing carrer in renewable energy - related field.