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## Recent strategies and trends in implanting of renewable energy sources for sustainability – A review

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### ABSTRACT

Advancements in technology, industrial revolution and growth of world's population push for energy demand. In order to overcome energy demand, reducing the import cost and environmental protection developed countries and developing countries are concentrating towards the non-conventional and renewable sources of energy. For replacing the fossil fuels with renewable sources most of the countries has been move on to the cost effective techniques, technological requirements, geographical constraints etc. Most of the countries are in process of promoting the renewable sources for overcoming the hurdles. This paper focus on the assessment of renewable energy sources in various countries by highlighting their performance towards the implementation of the new strategies and their performance towards energy sustainability.

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### 1. Introduction

Energy can be defined as ability of a system to cause an external work or motion. It is important to have sources energy to be identified and procured optimally. According to law of conservation of energy, energy neither can be created nor destroyed, however it can be transferred from one form to another. Hence it is necessary to transform the unexplored energy for sustainability. Energy based on its exhaustibility can be categorized into renewable and non renewable energy sources. Renewable energy sources like wind, tidal, solar, biomass etc prospects the strategies for a viable development.

The strategies involve (i) energy savings on demand side, (ii) efficiency improvement and (iii) replacement of fossil fuel. Sustainable energy should be capable of meeting the energy crisis for increasing demand. Environmental issues like global warming and climatic change posses consequences which was created turmoil among developed countries [1]. Renewable energy plays a crucial role in the energy sector notably wind and solar energy.

The call of the oil industry all over the world expanded. The investment of hydrocarbon extraction is not affordable. Because of more production, the amount of oil is getting reduced day by day and the pollution such as emission of carbon contributing to global warming. 170 countries work to reduce global warming so they call for a carbonless energy source. Thailand oil and gas companies attempt the deal and conclude that renewable energy sources helps, and this increases the importance of wind and solar energy becomes an emerging sector and turn into a big investment in oil industries. World industries are investing more on renewable energy industries hence by the year of 2040 it may become one of the fastest-growing and major money-making business providing industries a private firm has invested a huge amount of renewable energy source. Oil majors such as Exxon Mobil, Royal Dutch Shell, Total, Eni, Petro bras, Statoil/ Equinor, and chevron started the expedition towards brief analysis of their conversion and convention of the energy capitals. Based on the result, the oil majors make a change towards energies and renewable sectors. In that, all oil majors have established solar and wind resources. Energy storage becomes a progressively active sector in energy vehicles. Oil majors divided into two groups namely renewable energy laggards/ hydrocarbons focused companies and renewable leaders / energy transition com-

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