

Are ready-made technology transfer solutions suitable for developing the renewable energy sector in Sri Lanka?

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Abstract- As per the International Energy Agency, the unprecedented levels of economic growth emerging in the developing nations will make them responsible for future growth in energy demand and greenhouse gas emissions. Based on the International Energy Agency 2009 report, rapidly growing energy demand in developing countries is projected to double by 2030. The development, transfer and use of renewable energy technologies are promising ways towards low-carbon development in these countries. Recognizing the importance of sustainable energy for sustainable development, the origin of transferring sustainable energy technologies in the context of the international climate cooperation and in particular from developed countries to developing countries, lies in the United Nations Framework Convention on Climate Change (UNFCCC).

However, developed nation's homogeneous approaches for all developing countries and their disconnection with developing countries' national enabling factors have resulted with a limited success in promoting them. This paper is a theoretical overview of the current literature, and the paper attempts to answer the research question "Are readymade technology transfer solutions suitable for developing the renewable energy sector in Sri Lanka?" The theoretical overview discusses the current renewable energy sector of the country, followed by theoretical overview of technology transfer process, UNFCCC framework in facilitating the renewable energy technology transfer, and finally the key factors that need to be considered when tailoring the green technology transfer to Sri Lanka

Index Terms— CDM, Renewable Energy, Sri Lanka, Technology Transfer, UNFCCC

INTRODUCTION

Among the primary needs of humanity, access to clean and reliable sources of energy undoubtedly plays a prominent role in economic development and human welfare. Although many of the developing nations were being identified as fastest growing economies, most of these countries are still struggling to combat the issues associated with poverty. The region as a whole is experiencing a vibrant economic growth with a high rate of energy consumption fuelled by population growth, economic development, an energy intensive industrial base and urbanization [1]. As per the International Energy Agency, the unprecedented levels of economic growth emerging in the developing nations will make them responsible for future growth in energy demand and greenhouse gas (GHG) emissions [2]. Based on the International Energy Agency 2009

report, rapidly growing energy demand in developing countries is projected to double by 2030 [3].

Catering to the expanding energy services, while tackling the environmental impacts associated with energy use, represents a critical challenge in the 21st century. Recent developments in countries like China and India, where energy production has increased significantly, demonstrate how difficult it is. Carbon emissions from these countries are rising rapidly. Renewable energies have the important potential to provide sustainable solutions in addressing the concerns of both economic developments and environmental challenges. In recent years there has been a significant development of alternative energy technologies, both in terms of performance and cost reduction. Moreover, many developing countries are particularly well positioned when it comes to developing a new generation of energy technologies [4]. Recognizing the importance of sustainable energy for sustainable development, the United Nations General Assembly has designated the year 2012 as the international year of sustainable energy for all [5]. Therefore, renewable energy is emerging as the energy supply solution for the 21st century.

SIGNIFICANCE OF THE STUDY

The origin of transferring sustainable energy technologies in the context of the international climate cooperation and in particular from developed countries to developing countries lies in the United Nations Framework Convention on Climate Change (UNFCCC). Literature reveals that the UNFCCC has attempted to promote technology through several means: an Expert Group on Technology Transfers (EGTT), Technology Needs Assessments (TNA), and two financial mechanisms: the Clean Development Mechanism (CDM) and the Global Environment Facility (GEF) [6]. Out of these different mechanisms, Sri Lanka has adopted the CDM and the mechanism for trading "Certified Emissions Reductions" (CER) and "Removal Units" (RMU).

Apart from UNFCCC attempts, many other international frameworks have also supported developing nations with technology cooperation and transfer in the renewable energy sector. However, although many programs are functioning to strengthen the international cooperation, such programs have failed to attain the expected goals for a rapid global clean energy transformation [3]. Many developing countries are affected by lack of resources, particularly for commercial energies in general and electricity in particular, which occur due primarily to wrong policies and investment decisions and