

Chapter 5

Renewable Energy Scenario of Pakistan for Sustainable Development

Asif A. Shah

*Mehran University Institute of Science &
Technology Development (MUISTD), Pakistan*

Arabella Bhutto

*Mehran University Institute of Science &
Technology Development (MUISTD), Pakistan*

S. M. Qureshi

*Mehran University Institute of Science &
Technology Development (MUISTD), Pakistan*

Ambreen Shah

University of Sindh, Pakistan

A. A. Shah

*Mehran University of Engineering and
Technology (MUET), Pakistan*

Wajiha Shah

*Mehran University of Engineering and
Technology (MUET), Pakistan*

ABSTRACT

In Pakistan, sustainable development through Renewable Energy (RE) is considered an unrealistic idea. This chapter sheds light on this scenario by finding the root causes responsible for creating such assumptions. Therefore, in order to identify the root causes, the emphasis has been given to analyzing Pakistan's current status of sustainable development through RE on theoretical as well as on practical grounds. For achieving the said task, a framework was developed in which the theoretical background covered on the basis of policy documents was integrated with the real life scenario responsible for the diffusion of Renewable Energy Technologies (RETs) in Pakistan. This integration was performed on the basis of a pilot field study conducted in a local community. Further, a survey has been performed to identify the major groups of stakeholders and their corresponding awareness level towards simple RETs. Throughout this chapter, attempts have been made to provide a mirror view for Pakistan in achieving sustainable development through RE.

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INTRODUCTION

In Pakistan, it is quite unfortunate that less work has been done to investigate the hurdles for achieving the cause of sustainable development through RE. No work, which investigated the real life scenario regarding the application and usage of RE among general public¹, has been reported as yet. Therefore, when not much literature is available for Pakistan, which can describe its approach towards RE on both theoretical and practical grounds, it results in the absence of any sketch, which can provide Pakistan's RE status for sustainable development. However, the available literature only provides glimpses for the entire picture. This chapter tries to bridge this gap. It is based upon the fragmented work done earlier by the researcher, now merged for readers, in order to become fully aware of Pakistan's standing towards sustainable development through RE.

In this manner, the contribution of this chapter is important in two ways:

Contribution to the literature: This research provides adequate information for policy makers to emphasize RE technology utilization for sustainable development, as it establishes the linkages between S&T, education, and RE policies.

Contribution to the industry: This research establishes/investigates existing scenarios of linkages among institutes/industries working in the field of RE, poverty, and the economic up-gradation.

This research, however, has a limitation, as it is conducted on the basis of single RE technology. This limitation is due to the innovative nature of the research, as it tries to establish linkages between various factors such as technology, economic up-gradation, poverty alleviation, and sustainable development. However, while perusing this research, the single RE technology was selected carefully² in order to remain focused on meeting available resources of time and money, etc.

Therefore the objectives of this chapter are:

1. **Identification of appropriate technology:** RE consists of many technologies; hence, the most suitable and appropriate technologies will be identified on the basis of which scenario for sustainable development through RE will be investigated.
2. **Identification and adoption of research model:** Which can provide basic concepts on both the theoretical and practical grounds for understanding the RE scenarios of Pakistan for sustainable development.
3. **Pilot field study:** Will help in identifying the adoption (diffusion), economic up-gradation, and poverty alleviation capabilities of selected RETs.
4. **Survey:** This objective is further divided into two sub objectives:
 - **Identification of major groups:** Consisting of various stakeholders shaping RE scenario for sustainable development in Pakistan.
 - **Stakeholders awareness level:** The identified stakeholders awareness level will be judged regarding simple RETs, which were selected as a basis to pursue this research.
5. **To set future research directions:** In order to deeply understand RE scenarios for sustainable development in Pakistan, future research directions will be devised on the basis of what has been learned.

To achieve the above objectives the chapter is structured as follows. The next section is background, which provides an overview for the motivation of this research. It is followed by highlighting the reasons for selection of base technologies to pursue this research. Then it provides the introduction to the basic framework on which this research is based and further provides the integration of this selected framework in Pakistan's context by conducting a pilot field study and a

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