CLIMATE CHANGE RISK ASSESSMENT FOR GRID CONNECTED PHOTOVOLTAIC POWER PLANTS

By

Ban Mahmood Yaseen

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Risk Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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Under the Supervision of

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Title of Thesis:

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Key Words:
Risk Assessment; Solar Photovoltaic; Climate change; Renewable Resources

Summary:
The goal of this thesis is to assess the possible risks of climate change for grid connected photovoltaic power systems in Egypt for the next forty years. The Preliminary Risk Assessment and data of the Intergovernmental Panel on Climate Change. Siwa Solar Power Plant was used to apply interpreted data and the results showed that the biggest risk is increased frequency of soiling which increase both electrical and physical degradation. There was no significant impact from temperature rise as well as change of solar irradiance or cloud cover.

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Dedication

I would like to dedicate this thesis to my husband, Ashraf, for his constant support during my study and thesis preparation. I also dedicate it to my family for their sincere love and encouragement.

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