

[Download This Paper \(Delivery.cfm/SSRN_ID2148065_code1332876.pdf?abstractid=2148065&mirid=1\)](#)[Open PDF in Browser \(Delivery.cfm/SSRN_ID2148065_code1332876.pdf?abstractid=2148065&mirid=1&type=2\)](#)[Add Paper to My Library](#)Share: [!\[\]\(56549452e01ca28bdf2500ced9653143_img.jpg\)](#) [!\[\]\(235f8f87c36d896db1ddff2848125c86_img.jpg\)](#) [!\[\]\(4c4afa2dcab95991c60f31fce713d641_img.jpg\)](#) [!\[\]\(1205f6f8a2eee5164f325ab7908828d5_img.jpg\)](#)

Economic Assessment of the Use of Solar Energy in Kuwait

Global Journal of Business Research, v. 7 (2) pp. 73-82, 2013

10 Pages

Posted: 29 Jan 2013

Mohamed A. Hadi (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1898174)

Council of Ministers, Kuwait

Refaat Abdel-Razek (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1898177)

University of Sharjah

Walid M. Chakroun (https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1898179)

Department of Communication Disorders Sciences

Date Written: 2013

Abstract

In Kuwait, the current method of generating electricity using conventional power plants cannot provide beneficiaries with adequate service unless more plants are constructed. In addition to their high cost, these plants cause environmental damage, creating the need to investigate sources of clean energy. This study assesses the technical and economic feasibility of implementing Photovoltaic (PV) solar energy in residential houses in Kuwait. Data and information were collected and the appropriate PV system was selected according to cost and PV specifications. Next, the equivalent annual costs of the PV system with various discount rates were estimated together with the cost per kWh both for new and existing houses. Third, the annual reduction of CO2 emissions resulting from implementing grid-tied PV systems was calculated. Taking into consideration the financial savings from CO2 reduction, the cost per kWh was estimated and compared with the current cost. The purported discount rate adopted by the Kuwaiti government's long term plan is 6.7%. However, a range of discount rates from 0% to 20% was applied and results obtained. The results showed that with a 6.7% discount rate the annual savings on energy costs for a new house and a previously constructed hose were KD 745 and KD 653 respectively. The results also revealed the payback periods for the PV system for these houses are 7 and 7.4 years respectively. We concluded that integrated PV (BIPV) solar energy is economical and technically feasible in Kuwait when the discount rate is equal to, or less than, the break-even point of 10.36%.

Keywords: BIPV, Equivalent Annual Cost, Payback Period, Renewable Energy, Solar Energy**JEL Classification:** N7[Suggested Citation](#) >[Show Contact Information](#) >[Download This Paper \(Delivery.cfm/SSRN_ID2148065_code1332876.pdf?abstractid=2148065&mirid=1\)](#)[Open PDF in Browser \(Delivery.cfm/SSRN_ID2148065_code1332876.pdf?abstractid=2148065&mirid=1&type=2\)](#)

0 References

[Fetch References](#)

0 Citations

We use cookies that are necessary to make our site work. We may also use additional cookies to analyze, improve, and personalize our content and your digital experience. For more information, see our [Cookie Policy](#) (<https://www.elsevier.com/legal/cookiepolicy>)

[Policy](#) (<https://www.elsevier.com/legal/cookiepolicy>)

Do you have a job opening that you would like to promote on SSRN?

[Cookie Settings](#)

or

[Accept all cookies](#)

DOWNLOADS	426
ABSTRACT VIEWS	1,999
RANK	131,144

32 References

PlumX Metrics



(https://plu.mx/ssrn/a/?ssrn_id=2148065)
Related eJournals

Microeconomics: Welfare Economics & Collective Decision-Making eJournal (https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=1367770)

Follow



Renewable Energy eJournal (https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=1958976)

Follow



View more >

Feedback

Submit a Paper > (<https://hq.ssrn.com/submission.cfm>)

SSRN Quick Links



SSRN Rankings



About SSRN



(<https://www.facebook.com/SSRNcommunity/>)

([https://www.linkedin.com/company/493409?](https://www.linkedin.com/company/493409?trk=tyah&trkInfo=clickedVertical%3Acompany%2CentityType%3AentityHistoryName%2CclickedEntityId%3Acompany_493409%2Cidx%3A1%2Cstart%3A0%2Cend%3A10%2Curl%3Ahttps%3A%2F%2Fwww.linkedin.com%2Fcompany%2F493409%2F)

[trk=tyah&trkInfo=clickedVertical%3Acompany%2CentityType%3AentityHistoryName%2CclickedEntityId%3Acompany_493409%2Cidx%3A1%2Cstart%3A0%2Cend%3A10%2Curl%3Ahttps%3A%2F%2Fwww.linkedin.com%2Fcompany%2F493409%2F](https://www.linkedin.com/company/493409?trk=tyah&trkInfo=clickedVertical%3Acompany%2CentityType%3AentityHistoryName%2CclickedEntityId%3Acompany_493409%2Cidx%3A1%2Cstart%3A0%2Cend%3A10%2Curl%3Ahttps%3A%2F%2Fwww.linkedin.com%2Fcompany%2F493409%2F)

(<https://twitter.com/SSRN>)

(<http://www.elsevier.com/>)

Copyright (<https://www.ssrn.com/index.cfm/en/dmca-notice-policy/>)

Terms and Conditions (<https://www.ssrn.com/index.cfm/en/terms-of-use/>)

Privacy Policy (<https://www.elsevier.com/legal/privacy-policy>)

All content on this site: Copyright © 2023 Elsevier Inc., its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the Creative Commons licensing terms apply.

We use cookies to help provide and enhance our service and tailor content.

To learn more, visit [Cookie Settings](#).



(<http://www.relx.com/>)

