

Energy Sources, Part B: Economics, Planning, and Policy >  
Volume 6, 2011 - Issue 1

746 Views | 137 CrossRef citations to date | 3 Altmetric

Original Articles

# On Biomass Energy Consumption and Real Output in the US

J. E. Payne

Pages 47-52 | Received 04 May 2009, Accepted 03 Jul 2009, Published online: 05 Feb 2011

Cite this article <https://doi.org/10.1080/15567240903160906>

Sample our  
Built Environment  
Journals

>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

[Full Article](#) [Figures & data](#) [References](#) [Citations](#) [Metrics](#)  
[Reprints & Permissions](#) [Read this article](#)

## Abstract

This empirical note utilizes US annual data from 1949 to 2007 to examine the causal relationship between biomass energy consumption and real gross domestic product (GDP) within a multivariate framework. Toda-Yamamoto causality tests reveal unidirectional causality from biomass energy consumption to real GDP supportive of the growth hypothesis.

### About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click "Settings". For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All

Essential Only

Settings

<sup>2</sup>National Renewable Energy Laboratory, [www.nrel.gov](http://www.nrel.gov). [Balat and Ayar \(2005\)](#) survey world trends toward biomass energy use while [Kaygusuz \(2009\)](#) provides a review of the production, consumption, and technologies for biofuels in developed and developing countries.

<sup>3</sup>The US Department of Energy (DOE) undertakes a number of programs to facilitate the development of biomass as an energy source: The DOE Biofuels Program develops new technologies to utilize low-cost cellulosic biomass into ethanol; the DOE Biopower Program addresses biomass-based electricity generation systems and the development of sustainable energy crops; and the DOE Regional Biomass Energy Program provides cost-sharing and other support to state and local governments in the production and use of biomass energy.

<sup>4</sup>Much of the discussion of the hypotheses and related literature is drawn from the survey article on the causal relationship between energy consumption and economic growth by [Payne \(2010\)](#).

<sup>5</sup>The following are the dates in which data is reported by the Energy Information Administration ([www.eia.doe.gov](http://www.eia.doe.gov)) for the various subcategories of biomass energy consumption: wood (1949–2007), waste (1970–2007), and biofuels (1981–2007).

<sup>6</sup>The use of real gross fixed capital formation as a proxy for capital follows the work of Soytaş and Sari (2008) and citations therein.

<sup>7</sup>Test statistics for Granger-causality have the standard asymptotic distribution to draw valid inferences.

## Related

Biomass

Mustafa  
Energy S  
Publishe



### About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All

Essential Only

Settings

Taner Güney et al.

International Journal of Sustainable Development & World Ecology

Published online: 20 Apr 2020

## Sectoral Analysis of the Causal Relationship Between Renewable and Non-Renewable Energy Consumption and Real Output in the US >

N. Bowden et al.

Energy Sources, Part B: Economics, Planning, and Policy

Published online: 29 Sep 2010



### About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All 

Essential Only

Settings

## Information for

Authors

R&D professionals

Editors

Librarians

Societies

## Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

## Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

## Help and information

Help and contact

Newsroom

All journals

Books

## Keep up to date

Register to receive personalised research and resources by email



Sign me up



Copyright © 2024 Informa UK Limited [Privacy policy](#) [Cookies](#) [Terms & conditions](#)

[Accessibility](#)



Taylor & Francis Group  
an informa business

Registered in England & Wales No. 3099067  
5 Howick Place | London | SW1P 1WG

### About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All

Essential Only

Settings