Study suggests choice between green energy or economic growth

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Poverty, unemployment and zero economic growth are the likely outcome for countries which choose renewable energy sources over fossil fuels, according to a study.

Energy from fossil fuels appears to ignite economies into greater and more sustained growth, whereas energy from wind and solar power not only fails to enhance or promote economic growth, it actually causes economies to flat-line.

The results, from an in-depth study of more than 100 countries over 40 years, pose a serious ethical dilemma, according to the lead author, economist Dr Nikolaos Antonakakis, Visiting Fellow at the University of Portsmouth Business School and Associate Professor at Webster Vienna University.

Dr Antonakakis said: "Put simply, the more energy a country consumes, the more it pollutes the environment, the more its economy grows. And the more the economy grows, the more energy consumption it needs, and so on.

"This poses big questions. Should we choose high economic growth, which brings lower unemployment and wealth for many, but which is unsustainable for the environment?

"Or should we choose low or zero economic growth, which includes high unemployment and a greater degree of poverty, and save our

environment?"

Dr Antonakakis and co-authors, Dr Ioannis Chatziantoniou, at the University of Portsmouth, and Dr George Filis, at Bournemouth University, set out to study whether environmentally friendly forms of energy consumption were more likely to enhance economic growth.

In the light of recent policies designed to promote the use of green energy, including tax credits for the production of renewable energy and reimbursements for the installation of renewable energy systems, the authors predicted that environmentally friendly forms of energy consumption would enhance economic growth.

Dr Antonakakis said: "It turned out not to be the case."

They argue that societies now need to rethink their approach toward environmental sustainability, and strongly question the efficacy of the recent trend in many countries to promote renewable energy resources as a reliable alternative for helping achieve and maintain good economic growth.

The researchers gathered data on gross domestic product (GDP), CO2 emissions and total and disaggregated energy consumption for 106 countries from 1971-2011.

The results were the same across all countries, from rich to poor.

Dr Chatziantoniou said: "It's a very thought-provoking result and could, in a roundabout way, help explain why no country or state has yet managed to fully convert to renewable energy.

"It could also be that we have not yet learned how to fully exploit the benefits of renewable energy – we don't yet have the level of know-

how."

Of the countries studied, not one showed good economic growth while promoting and investing in renewable energy.

The authors say the question now needs to be how should countries, especially rich ones which produce and therefore pollute a lot, protect the environment and create well balanced, sustainable societies.

Dr Filis said: "We should probably start considering different economic growth paradigms, such as those of de-growth or a-growth, which could lead to a sustainable future without sacrificing economic resources and increasing unemployment.

"Countries need to also invest in education and strengthen the quality of their institutions – including promoting law and accountability and fighting corruption and the rise of autocracies.

"The realisation that GDP isn't a successful measure of well-being, should be a turning point for societies."

Although gloomy for the environment and those fighting to protect it, the findings did include a small measure of hope.

Dr Antonakakis said: "The findings suggest we should wean ourselves off using GDP as an important measure of success and wealth.

"GDP measures standard of living but doesn't take into account environmental pollution, the hours of unpaid work people do in their households and communities, the underground economy, the quality of goods and services, to name just a handful of factors not measured but which are vital to our wellbeing.

"What you measure affects what you do, and if you don't measure the right thing, you don't do the right thing. This has substantial implications for economic policy makers who base their decisions solely on GDP terms."

Economists have been working for some time, he said, on alternative ways of measuring success, including the Genuine Progress Indicator and the Human Development Index.

The research is published in *Renewable and Sustainable Energy Reviews*.

More information: Nikolaos Antonakakis et al. Oil shocks and stock markets: Dynamic connectedness under the prism of recent geopolitical and economic unrest, *International Review of Financial Analysis* (2017). DOI: 10.1016/j.irfa.2017.01.004

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