

THE EDUCATION UNIVERSITY OF HONG KONG
FACULTY OF LIBERAL ARTS AND SOCIAL SCIENCES

Research Output/Impact/Knowledge Transfer Prize
for the Dean's Research Fund 2018-19

Brief Introduction of Awardee's
Research/KT Publication/Study/Output and Future Research/KT Development

Awardee (Dept): Prof. Woo Chi Keung, Professor (APS)
Publication Title/KT project: Price elasticities of retail energy demands in the United States:
New evidence from a panel of monthly data for 2001-2016

A. *Briefly introduce your research/KT publication/study/output for which you have received the prize.*

Price elasticities play an important role in energy demand forecasting, which in turn shapes energy policy and investment decisions. However, there is still considerable debate around how responsive customers are to energy prices, and whether investments in metering and consumer education have made them more responsive in recent decades.

Using a Generalized Leontief (GL) demand system and a rich panel of monthly data covering 2001 to 2016 for the lower 48 United States, this paper estimates own- and cross-price elasticities of retail demand for electricity, natural gas and fuel oil for the three major customer classes: residential, commercial and industrial.

The price elasticity estimates thus obtained indicate that retail energy demand in the United States was highly price-inelastic over 2001 to 2016, consistent with historical and current estimates used by many utility planners. They suggest that, with current technologies and behavior, higher energy prices will not induce significant reductions in demand. Hence, energy efficiency standards and utility demand-side programs are still an important strategy for managing energy demand growth, mitigating energy price risk, and reducing the environmental impacts associated with energy use. Finally, while the paper uses data from the United States, its approach is general and can be readily extended to other countries that have similar data available.

B. *How you used/will use your prize and perhaps its usefulness to your research/KT development?*

The prize funds my ongoing research on energy policy for a bright electricity future. Its usefulness is underscored by my publications on renewable energy development.

C. Expected research/KT outcomes/outputs/impacts arising from this prize.

My expected output is one paper in an A* journal on renewable energy development.