

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

Research Output/Impact Prize for the Dean's Research Fund 2017-18

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

Awardee (Dept): Prof. Woo Chi Keung, Professor (APS)
Publication Title: Does California's CO₂ Price Affect Wholesale Electricity Prices in the Western U.S.A.?

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

Energy policy initiatives can have a significant impact on electricity market prices. For example, programs for renewable energy development and demand-side-manage tend to reduce electricity prices, whereas CO₂'s cap and trade, retirement of nuclear power and coal generation tend to increase them.

Recognizing the information needs of private companies and government agencies, I have been working with researchers in the U.S. on the price effect of carbon trading, leading to the following A* publication: Woo, C.K., A. Olson, Y. Chen, J. Moore, N. Schlag, A. Ong, T. Ho (2017) "Does California's CO₂ price affect wholesale electricity prices in the Western U.S.A.?" Energy Policy [4.6], 110, 9-19.

The key finding of this paper is that while California's carbon trading program is effective in internalizing the marginal CO₂ emissions cost of natural-gas-fired generation, it has a limited geographic scope, causing it to be ineffective in reducing the overall CO₂ emissions in the Western U.S.A.

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

I will use the prize money to augment the funding from other sources (e.g., TDG and private donation) for my on-going projects:

- (1) An online assessment system for individual scores (OASIS) that now has 10+ committed users in Hong Kong, China and India.
- (2) Public transportation demand analysis for Hong Kong.
- (3) Demand side management of vehicular fuel consumption in Hong Kong.

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

Based on the three projects listed above, I plan to submit three papers to A* (SSCI) journals with impact factors > 2 . If or when these papers will be accepted, however, is presently unknown.