

Switching from High-carbon to Sustainable Electricity: Consumer, Entrepreneur and Industry Imperatives and Interactions

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Sustainable electricity production, being dependent on solar and wind generation, is intrinsically intermittent and decentralized. Electricity supplied from fossil fuels is continuously flexible and centralized. Unsurprisingly, high-carbon electricity supply has shaped today's patterns of electricity demand, patterns that are incompatible with sustainable but more intermittent electricity supply. Switching from today's flexible high-carbon electricity to less flexible sustainable generation needs not just supply-side technological advance but demand-side transformation ensuring electricity consumption patterns shift to more closely synchronize with sustainable electricity production patterns.

An iterative process of converging, on one hand, sustainable electricity technology developments and, on the other, electricity consumption habits across both domestic and non-domestic users is needed to ensure that electricity demand more closely fits sustainable electricity supply. But how can householders, businesses and other consumers make changes in their current electricity use patterns? What psychological, business and public policy changes are required? How can these be operationalized and through what mechanisms? How can these questions be made analytically tractable? How should they be hypothesised and empirically tested to shed light on how real-world electricity demand can be revolutionized to match more closely with intrinsically intermittent sustainable electricity supplies?

If you would like to develop a PhD project to shed light on any aspect of the transformation of, and interrelationships between, sustainable electricity demand and supply, then do please get in touch. If your interest is strong and you have an appropriate blend of qualifications, aptitudes and motivations, you will join a supervisory team lead by Professor Edmund Thompson and Professor Furong Li to develop a specific avenue of research relating to a facet of sustainable electricity demand and supply interrelationships that both interests you and that the team finds both compelling and worthwhile. Your PhD training, supervision and research will be directed to ensure that an original contribution to knowledge is made through the production of professional scholarly papers.

In the first instance, please send the lead supervisor the following:

1. An original, non-generic proposal of the kind of research you would like to pursue in terms of topic areas relating to the above, drawing as necessary on extant literature.
2. An explicit indication of the theoretical and empirical approaches you think might be appropriate (and that you'd personally like to deploy), drawing on extant literature.
3. A statement of the kinds of scholarly training, practical research and ethical issues you think you'd need to consider in order to succeed in completing your PhD effectively.
4. An explanation of (i) why you want to pursue a PhD in the first place; (ii) why you are interested in the particular topic area you propose researching; and (iii) what career you plan to develop, and how, after completion.
5. A full CV.