



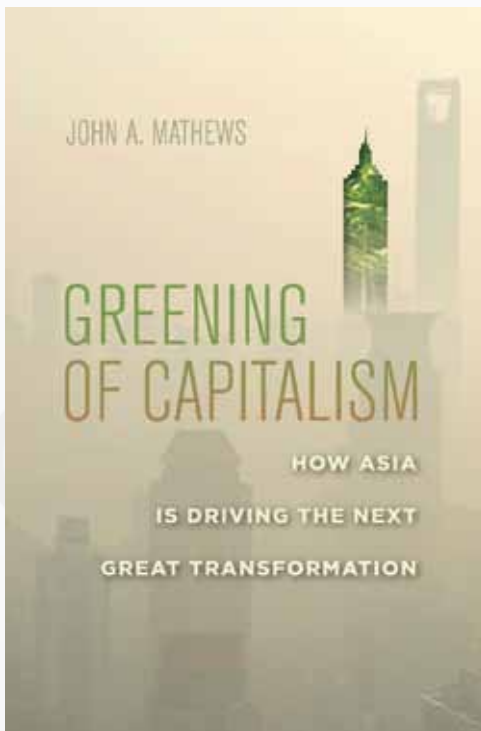
Campus Colloquia series

Mercoledì 15 aprile 2015 Ore 11

Area della Ricerca CNR-INAF - Via Gobetti 101

Greening of the energy system: Is China driving the process?

John A. Mathews, MGSM, Macquarie University, Sydney



Western industrialism has achieved miracles, promoting unprecedented levels of prosperity and raising hundreds of millions out of poverty since the industrial revolution. Industrial capitalism is now diffusing east, where Japan was the first, then the four Tigers (Korea, Taiwan, Singapore and Hong Kong) and now China are all incorporating themselves into the global industrial world. India, Brazil and many others are expecting to follow the same course. But as China, India, and other industrializing giants grow, they are confronted with an inconvenient truth: They cannot rely on the conventions of capitalism (fossil-fueled energy systems; resource throughput rather than circularity; generic finance) as we know them today, for reasons to do with spoliation of their own environment and energy and resource security as much as concerns over global warming.

By necessity, a new approach to environmentally conscious development is already emerging in the East, with China leading the way. As opposed to western zero-growth advocates and free-market environmentalists, it can be argued that a more sustainable capitalism is being developed – as counterpart to the all-too obvious black developmental model based on coal. In Hu

Angang's words, this alternative is the "inevitable choice for China" – and by extension, one might say for other developing countries as well. China is greening as an economic imperative and not as a moral imperative.

The energy industrial revolution that is under way in China has resulted in its creating the largest renewable energy system on the planet, and generating more green power from hydro, wind and solar photovoltaic sources than the US, Germany, India and Italy combined. China is greening its energy system at the margin, as demonstrated by 1) having generated more additional green electrical energy in 2014 than energy from thermal sources (mainly coal); 2) having added more capacity involving green sources than thermal sources; and 3) having invested more in green extensions of the grid than thermal. The cost reductions driven by China as it scales up its production of renewables are now having global impact, not just in trade and in energy concerns but in wider industrial activities.

Falling prices for both oil and coal over recent months have led many to query whether policies supporting renewable energies will be sustained, or – as in the 1980s when oil prices were also plunging – lead to abandonment of renewables projects. This is unlikely to happen, because this time China is the major global investor. And China's reasons for building up its renewable energy industries are strategic in nature, based on the need to enhance energy security and clear polluted skies – strategic goals which are not negated by falling oil or coal prices.



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John Mathews is professor of strategy at Macquarie Graduate School of Management, Macquarie University, Sydney. He has taught at MGSM for the past 15 years, and was from 2009 to 2012 concurrently the Eni Chair of Competitive Dynamics and Global Strategy at LUISS Guido Carli University in Rome. He has specialized in the catch-up strategies of firms and countries in East Asia, publishing widely in this field. He was a Rockefeller Foundation visiting fellow at the Bellagio Study Centre in 2004. For the past several years Professor Mathews has

focused on the greening of business systems. He has published several books based on this research, including *Tiger Technology: The Creation of a Semiconductor Industry in East Asia* (Cambridge UP 2000; co-authored with Cho, Dong-Sung); *Dragon Multinational: A New Model of Global Growth* (Oxford UP, 2002); and *Strategizing, Disequilibrium and Profit* (Stanford University Press 2006) which discusses the theoretical foundations of catch-up strategies. In 2014 his new book, *Greening of Capitalism: How Asia is Driving the Next Great Transformation*, was published by Stanford University Press. His article "Manufacture renewables to build energy security" was published in *Nature* in September 2014.