



First Name: **Klaus** Last Name: **Hubacek**

Title: **Professor**

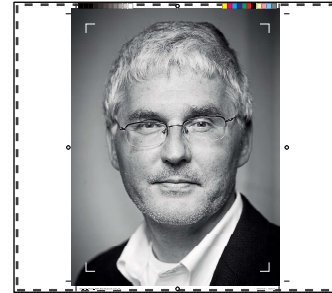
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Education:

PhD: **Ecological Economics**

MS:

BS:

General Areas of Expertise:

ecological economics, environmental input-output analysis

Short Bio:

Dr Klaus Hubacek is an ecological economist with a research focus on conceptualizing and modeling the interaction between human and environmental systems and developing and modeling scenarios of future change. Klaus has worked extensively with stakeholders in participatory research projects and led large interdisciplinary research teams. He has published about 200 research articles on topics such as climate change adaptation and mitigation, participatory modeling, management of ecosystems services, land use change and governance. Klaus has conducted studies for a number of national agencies in Austria, the Czech Republic, China, Japan, Spain, the UK, and the U.S. and international institutions such as the European Commission, the Inter-American Development Bank and the World Bank.

Five Representative Publications:

Munoz Castillo, R., K. Feng, K. Hubacek, L. Sun, J. Guilloto, F. Miralles-Wilhelm (2017). "Uncovering the Green, Blue and Grey Water Footprint and Virtual Water of Biofuel Production in Brazil, a Nexus perspective." *Sustainability*, 9, 2049; doi:10.3390/su9112049
White, D., K. Hubacek, K. Feng, L. Sun, B. Meng (In Press). The Water-Energy-Food Nexus in East Asia: A Tele-connected Value Chain Analysis Using Inter-Regional Input-Output Analysis. *Applied Energy*
Yu, Y., Hubacek, K., Feng, K., (2013). Tele-connecting local consumption to global land use. *Global Environmental Change*, Volume 23, Issue 5, Pages 1178-1186.
Feng, K., X. Li, Y. L. Siu), K. Hubacek (2014). "The energy and water nexus in Chinese electricity production: A hybrid life cycle analysis." *Renewable & Sustainable Energy Reviews*. Volume 39, Pages 342-355.
Motesharrei, S., Rivas, J., Kalnay, E., Asrar, G., Busalacchi, A., Cahalan, R., Cane, M., Colwell, R., Feng, K., Franklin, R., Hubacek, K., Miralles-Wilhelm, F., Miyoshi, T., Ruth, M., Sagdeev, R., Shirmohammadi, A., Shukla, J., Srebric, J., Yakovenko, V., Zeng, N., (2017). "Modeling Sustainability: Population, Inequality, Consumption, and Bidirectional Coupling of the Earth and Human Systems." *National Science Review*. 3, 470-494.

FEWSTERN Symposium 2017 Presentation Title and Abstract:

Local to Global: Economic and Environmental Trade-offs of the Food-Energy-Water-Ecosystem Nexus

The concept of the food-energy-water system (FEWS) nexus has only been fairly recently introduced in the academic literature and reflects the need for more integrated environmental approaches that allow to better anticipate unintended consequences, assess trade-offs between different environmental resources over space and time as well as consideration of potential social and economic impacts of resource management decisions. Yet most of the applications do not take full advantage of what the concept potentially offers and focus mainly on a subset of potential intersections and at a specific locale. Moreover, economic and social impacts as well as trade-offs across space are often ignored. Most FEWS nexus studies follow a 'case study-based approach' identifying specific interdependencies such as water requirements for energy production in a specific spatial context. In this paper, we will redefine the FEWS nexus as the combined use of resources within an economic system reflecting the fact that most nexus resource use is frequently not a result of direct consumption and feedback among the nexus sectors but driven by other downstream sectors causing resource consumption. An economic-wide systems approach such as multi-regional environmental input-output analysis does not only allow to illuminate these ultimate drivers within a region but also along global supply chains. In addition, this framework allows to explore socio-economic consequences and trade-offs.