1 Abstract:

This paper aims to present our economic growth model, that should explain, as well as possible, the impact of energetic transition on economic growth. In our precedent working-paper, we have discussed some of the important energetic transition models trying to build up a new concept of the real problematic of the 21st century energetic transition. The paper also present the first attempt, according to our knowledge, to differentiate between energy as production factor and energy as consumption good for householders. We take also into account the Non-Energetic-Consumption (NEC) (of householders). The model conclude that NRE extraction must follow both the level of industrialization and the level of NEC. The two latter must converges to a steady state defined by the discount factor and the depreciation rate of the capital stock. The optimal RE production is the level that complete the overall energy demand (that is done by simple combination of the model’s equations). Furthermore, the RE production level depend on the price, while the NRE extraction do not depend on it. Finally, internalization of environmental damage decrease the level of extraction of NRE by a quantity proportional to the level of aggregate NEC, and shows that the carbon tax should follows the level of NEC and not the level of extraction of NRE.

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