Environmental policy and directed innovation in a Schumpeterian growth model.

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ABSTRACT: This paper describes the main long-run properties of an endogenous growth model with carbon emissions. Growth comes from innovation, which is produced by an R and D sector. Innovations can be either energy-augmenting or labor-augmenting. We consider the impact of a carbon tax as well as a subsidy to energy-augmenting R & D. While the former has moderate effects in inducing cleaner technologies in the long run, the latter is much more efficient. However, only an exploding carbon tax may implement a 'sustainable' growth path where output grows while emissions fall.

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Keywords: Global warming, carbon emissions, innovation, endogenous growth, taxation, R & D, schumpeterian models

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