



REES Department Seminar — Winter 2018

Green Technology and Patents in the Presence of Green Consumers

Dr. Corinne Langinier

Associate Professor

Department of Economics

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Abstract: We develop a theoretical framework to investigate the impact of patent policies and emission taxes on green innovation and emissions in the presence of green consumers. We analyze the effect of changing patentability requirements and patenting costs when a firm invests in a green innovation, which reduces the emission output ratio. We show that such investment reduces emissions only if the fraction of green consumers is sufficiently small, and that the magnitude of this effect decreases as the fraction of green consumers increases. For a small fraction of green consumers, while marginally higher emission tax only increases green investment, it always induces less emissions. However, a discrete jump in the tax rate may result in more emissions. This green paradox may be alleviated by lowering patenting costs. A stricter patentability requirement combined with fast-track green patents is only effective at reducing emissions if the fraction of green consumers is small.