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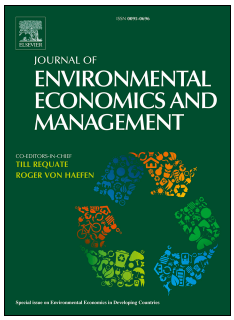

Double limit pricing

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PII: S0095-0696(18)30200-6

DOI: 10.1016/j.jeem.2018.03.010

Reference: YJEEM 2117

To appear in: *Journal of Environmental Economics and Management*

Received Date: 22 December 2015

Revised Date: 16 March 2018

Accepted Date: 28 March 2018

Please cite this article as: van der Meijden, G., Ryszka, K., Withagen, C., Double limit pricing, *Journal of Environmental Economics and Management* (2018), doi: 10.1016/j.jeem.2018.03.010.

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ACCEPTED MANUSCRIPT

Double Limit Pricing*

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Abstract

We study oil extraction by a monopolist who faces demand from a climate-aware and a climate-ignorant region. A renewable, perfect substitute for oil is available at constant unit cost. The climate-aware region uses a carbon tax and a renewables subsidy as policy instruments. Due to heterogeneity in climate policies between regions, the oil price path possibly contains two limit-pricing phases. We specify conditions under which a tightening of climate policies results in lower initial carbon emissions. A renewables subsidy and a carbon tax effectively force the monopolist to sell more oil to the climate-ignorant region, during the stage when demand from the climate-aware region has already vanished. We calibrate the model and numerically investigate climate damage and welfare effects of the policies of the climate-aware region. We find that both the carbon tax and a renewables subsidy lower climate damage, even though cumulative emissions are fixed.

JEL codes: Q31, Q37
Keywords: limit pricing, non-renewable resource, monopoly, climate policy

*The authors would like to thank Julien Daubanes, Niko Jaakkola, Rick van der Ploeg, Ingmar Schumacher, Hubert Stahn, two anonymous referees, and participants at the Tinbergen conference (Amsterdam, 2016), the EAERE conference (Zurich, 2016), the SURED conference (Banyuls-sur-Mer, 2016), the FAERE conference (Bordeaux, 2016), the Environmental and Natural Resources Conservation workshop (Montpellier, 2016), the CESifo Area Conference on Energy and Climate Economics (Munich, 2016), the Conference in honour of John Hartwick (October 2017, Kingston, Ontario), and the Workshop in memory of Pierre Lasserre (October 2017, Montréal, Québec) for their valuable comments. The authors gratefully acknowledge financial support from FP7-IDEAS-ERC Grant No. 269788 (GP). ***The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.***

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