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THE TIME-INCONSISTENCY OF ALTERNATIVE ENERGY POLICY

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Over the last 25 years, various predictions have been made about crude oil supply. It seems obvious that there is an increasing shortage of fossil fuels and, at the same time, governments are faced with more demanding energy users with respect to environmental protection. To deal with these crucial issues, governments have to implement incentive tax policies in order to encourage firms and households to switch to alternative energy sources (natural gas, wind or solar photovoltaic energy or even nuclear power). However, when government benefits from considerable proceeds from petroleum product taxes (which is the case for most European countries (see International Energy Agency, 2000), its credibility is questioned and implementing time-consistent policies remains a difficult task.

A certain amount of time-inconsistency-related literature focuses on environmental issues in order to define the credibility of coercive policies which are imposed on firms for making less polluting technology investments (Helm, Hepburn and Mash (2004), Abrego and Perroni (2002), Marsiliani and Renström (2000). For instance, Abrego and Perroni (2002) consider environmental taxes aiming to reduce pollution and related changing production methods which involve more research and development work as well as new investments. However, they can generate unwanted distributional effects and, in the future, taxes may be reduced by the government to minimize these impacts.

The present paper is related to the time inconsistency problem stemming from incentive measures, such as tax credits, subsidies or feed-in prices, implemented for supporting alternative energy instead of petroleum products consumption. Our aim is not to emphasize the credibility of coercive measures for developing less polluting investments. It is rather to understand the difficulty for final users to consider the government as a credible authority when it promotes alternative energy. This situation is due to the government's dilemma: supporting alternative energies based on incentive policies or receiving large proceeds from base energy taxes (mainly petroleum products). Even if the government prefers to promote the use of alternative energies, it also considers the implications due to the income loss resulting from a decreasing consumption of the base energy.

We develop a simple model of time-inconsistency in which only two sources of energy are available to final users: a base energy (petroleum) and an alternative energy. A government implements an energy policy using taxes or subsidies in order to increase the public's energy consumption of alternative energy. In this context, we show that such a policy is time-consistent provided that the tax differential between the two energy sources is equal to the government preference for alternative energy. As a result, when the government's preference for alternative energy is lower than its base energy tax, the only way for being credible implies setting a positive tax on alternative energy, not giving subsidies. However, this involves a reduction in the tax differential which may prevent an incentive to exist at all.

Reference

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