The impact of voluntary environmental agreements on organizational change and innovation in Europe and the United States

Project Summary

This research will focus on the impact of environmental voluntary agreements (VAs) on business strategies and environmental innovations. Voluntary agreements are partnerships between government and industry to facilitate voluntary action with a desirable social outcome. Our project will characterize the conditions for successful agreements that lead to organizational change and technological innovation in order to assist regulators in charge of formulating environmental programs.

Innovative environmental responses can lead firms to reduce their cost, develop new markets and therefore obtain a competitive advantage. From the regulatory point of view, it is better to promote and diffuse innovative pollution prevention technologies than to rely on a remedial or end-of-pipe approach. Some firms may be reluctant to enter such agreements because of the risk of information leakage and potential conflicts with partners that might be associated with it. Some regulators are still afraid of neglecting compliance due to a lack of traditional monitoring and enforcement mechanisms. They also fear being captured by one specific industry. The advantages and disadvantages of VAs in terms of acquisition of new knowledge and transaction costs are not clear for firms as well as for regulators.

Our hypothesis is that the design and implementation of the VA can have a significant impact on innovation outcome and transaction costs. The design of the VA must take into consideration its relation with other regulatory tools, the characteristics of the firms involved, as well as the specific industry.

Seven programs will be studied in detail: three programs in the United States (Climate Wise, DfE, WasteWi$e) and three in the EU (End-of-Life Vehicle Program, German Global Warming Prevention Program, Eureka Euroenviron). In addition, the impact of ISO 14000 on innovation and organizational change will be studied in detail, since it is a voluntary program that is being implemented in Europe as well as in the United States. Six industries will be represented in our study, namely automotive, oil refineries, chemical industry, waste management, electric utilities, and electronics.

Building on transaction cost economics and on the dynamic capability approach, we propose a comprehensive treatment of the impact of environmental VAs on firm’s acquisition of new environmental competencies. We examine the relationships between the characteristics of the VA, the firm in its institutional environment as well as the transaction between the regulatory agency and the firm.

The dependent variables will be (1) the innovative outcome of the firm in one specific VA and (2) the transaction costs associated with the participation in the VA. The independent variables will be the characteristics of the VA (degree of partnership, monitoring mechanisms, scope...), the institutional context (protection of innovation, regulatory flexibility, collaborative culture...), the specificity of the industry and the firm at stake (structure, size, R&D activities, core competencies, economic incentives to innovate...). Most of the variables that we are interested in are not presently available. This is why we will develop a survey that will be conducted via a mailing questionnaire to a statistically significant number of participating firms in the VA. In addition, we will conduct specific case studies through interviews with individual firms, and interviews of regulators participating in the VA.

Each of the independent variables will be rated on a five-point scale. A statistical analysis will be performed using a multinomial logit regression, since the variables will be categorical (e.g. Delmas, 1996). We will run two different sets of regressions. The first set of regressions will use the innovative outcome as a dependent variable. The second set of regressions will use the transaction cost as a dependent variable.

The project should be of considerable significance, as its outcome should provide a valuable concept for policymakers to design efficient VAs favoring the acquisition of new environmental competencies, specifically organizational change and innovative capacity. As far as VAs can be applied to replace conventional regulation tools, the project’s results could also serve to resolve the common concern that environmental regulation present a barrier for firms to innovate.