Sectoral Approaches to a Post-Kyoto International Climate Policy Framework

BY **AKIHIRO SAWA**

OVERVIEW

The Kyoto Protocol uses a top-down mechanism to negotiate economy-wide emissions caps. This paper proposes an alternative "sectoral" approach, which would determine industry-level emissions reduction targets based on technological analyses.

DISCUSSION

A sectoral approach to a future climate agreement has a number of advantages over the existing Kyoto framework. First, a sectoral approach would encourage the involvement of a wider range of countries, since it would include incentives targeted at specific industries in those countries. Second, a sectoral approach would resolve a variety of issues concerning international competitiveness. Industries would make cross-border commitments to equitable targets, thereby mitigating concerns about unfair competition and emissions leakage (in which energy-intensive firms relocate to countries with weaker emissions regulations). Third, a sectoral approach may be more convincing to interest groups, since calculating emissions targets based on technological analysis may reduce uncertainty about future marginal costs of abatement. Fourth, a sectoral approach would achieve effective emissions reductions by promoting technology development and transfer.

A sectoral approach also has a number of weaknesses. First, it may be difficult to negotiate an international agreement based on a sectoral approach, since it would have large transaction costs, create uncertainty about the investments of countries that already participate in emissions trading schemes, and complicate negotiations by allowing countries to raise competitiveness issues not directly related to carbon restrictions. Second, a sectoral approach would reduce cost-effectiveness. Unlike an economy-wide cap-and-trade system, which can achieve cost-effectiveness by exploiting abatement opportunities with minimum costs, a sectoral approach would force reductions upon specific sectors. Third, a sectoral approach cannot achieve environmental effectiveness, since it does not induce mitigation actions from all sectors. Fourth, a sectoral approach entails a high level of government intervention, both by requiring additional government authority in collecting industry data and by requiring governments to set sector-specific regulations. Fifth, a sectoral approach faces challenges related to data collection and antitrust laws.

KEY FINDINGS & RECOMMENDATIONS

➢ *This paper proposes a "Policy-Based" sectoral approach for an international climate agreement that addresses some of the problems associated with previous sectoral designs.* Under this new approach, governments would negotiate national and sectoral emission targets and policies based on sectoral-level analyses of what is feasible given projected technological progress. For the purposes of the agreement, industries would be categorized into three major sectors. Group I sectors includes energy-intensive industries that engage in significant international trade. Group II sectors includes primarily-domestic industries, such as electricity and road transport, for which efficiency benchmarks and best practices can be identified easily. Group III sectors includes households and commercial establishments for which standards would be difficult to set due to the wide range of activities and technologies involved.

➢ *The agreement would require industrialized countries to take on binding reduction targets at the national level and for Group I.* Developing countries' commitments would be non-binding and could include economic or sustainable development policies with only secondary effects greenhouse gas emissions. The agreement would promote cost-effectiveness by establishing an intensity-based market for emissions trading.

➢ *Under this sectoral approach, governments would have discretion to choose the policies used for domestic implementation.* For example, the European Union might choose to meet its Group I commitments using domestic emissions trading. In Japan and China, Group I options might include establishing formal agreements with domestic industries or setting energy conservation standards. Potential Group II policies include financial support for technical support and technology transfer. In Group III, policies could include energy efficiency standards and tariff reductions. Over time, policy measures (particularly Group I policy measures) should converge towards a single framework, such as international linkage among national emissions trading systems.

➢ *The international agreement implementing the sectoral approach would include a variety of enforcement measures.* Nations that fail to comply with binding national or sectoral emissions targets would be required to purchase emissions credits from other countries or to pay additional penalties in the following commitment period. Trade sanctions could be used for enforcement, to mitigate international competitiveness concerns, and to encourage participation in the treaty.

➢ *To encourage widespread participation, the agreement would provide financial and technological incentives to developing countries.* For example, developing countries could be given "no-lose" targets that allow them to sell credits if they reduce their emissions intensity below a certain threshold. Alternatively, they could be given dual intensity targets that require them to meet a "compliance" target, but allow them to sell credits for emissions reductions above a higher "selling" target. Finally, industrialized countries should provide incentives for private firms to transfer technology to developing world projects.

CONCLUSION

A sectoral approach to a future climate agreement may help to solve some of the problems of the Kyoto Protocol. However, some issues related to a sectoral approach—including lower cost-effectiveness, the difficulty of data collection, and the complexity of sector-level negotiations—remain unresolved.

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