4. The level of cost-effectiveness, which is an important determinant for the total cost. (Depends *inter alia* on coordinated policy option choice and implementation.)

5. The level of uncertainty with respect to total cost, cost share, and future national climate change consequences. (Countries will be less willing to participate if they e.g. anticipate a relatively large probability of substantially higher costs to meet the future target.)

Our main hypothesis is that countries must find these five prerequisites satisfied to accept climate policy commitments implying considerable cost for participating countries. Consequently the key issue is to analyze how these prerequisites can be satisfied for the necessary number of countries, in particular within OECD.

## THE PROJECT

The level of coordination between Annex I or Annex II Parties within the context of new commitments can vary from a common emissions target met through national commitments and national policy measures chosen by each country, to a more cost-effective agreement on a uniform carbon tax across the participating Parties. The former type of agreement is a more likely outcome of the negotiations on the Berlin mandate than the latter alternative.

The burden-sharing implications of the distribution of commitments and costs between participating countries can be analyzed in a static or dynamic setting. In a static setting the cost can be defined as the difference between the equilibrium GDP before and after the implementation of the climate policy. In a dynamic setting an option is to analyze the transition costs of the national economy from a situation before introduction of the coordinated climate policy to the new equilibrium situation after implementation of the climate policy.

The negotiation process on the distribution of commitments can be analyzed employing dynamic game theory with respect to global target, institutional arrangements, climate policy measures, and participation. The cost is commonly expressed in terms of loss of gross domestic product in each participating country, but other welfare measures and effects should be considered (e.g. change in national wealth or change in environmental indicators). Some examples involving OECD countries will be analyzed.

Considering other greenhouse gases than carbon dioxide raises the question of implications of employing Global Warming Potentials or more sophisticated model-based methods for comparing different long-lived and well-mixed greenhouse gases with respect to the radiative forcing of climate. Furthermore, the implications of introducing gases where the climate effect depends on the geographical location of the emissions, should be considered.

**Time schedule**

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| Project start | 1 August 1995 |
| Draft final report | 1 April 1996 |
| Final report | 1 June 1996 |