



## **Adaptation to climate change: issues and obstacles**

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Many decisions concerning long-lived investments already need to take into account climate change. But doing so is not easy. First, due to the rate of climate change, new infrastructure will have to be able to cope with a large range of changing climate conditions, which will make design more difficult and construction more expensive. Second, uncertainty in future climate makes it impossible to directly use climate model outputs as inputs for infrastructure design, and there are good reasons to think that the needed climate information will not be available soon. Instead of optimizing based on the climate conditions projected by models, therefore, future infrastructure should be made robust to most possible changes in climate conditions. This aim implies that users of climate information must also change their practices and decision-making frameworks, for instance by adapting the uncertainty-management methods they currently apply to exchange rates or R&D outcomes. Practically, five methods can be proposed: (i) introducing long-term prospective exercises; (ii) selecting “no-regret” strategies; (iii) favouring reversible options; (iv) reducing decision time horizons; and (v) promoting soft adaptation strategies. Finally, adaptation strategies should not be assessed in an isolated context. In particular, it is essential to consider their (negative or positive) side-effects and possible changes in future energy costs.