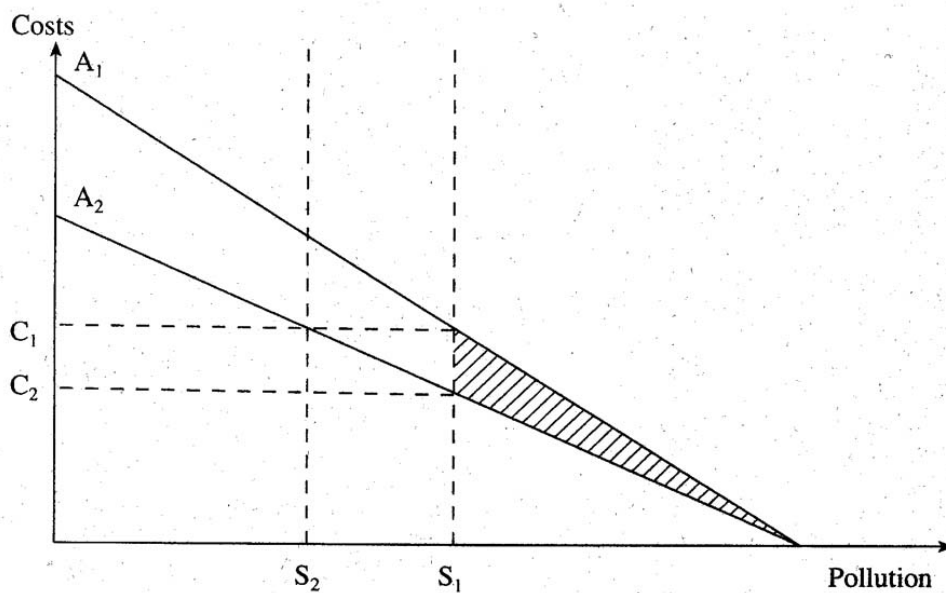


## Command and Control Policies for the Environment - Innovation and Pollution Abatement Costs -

Let's have a closer analytical look at innovation and pollution abatement cost of CAC policies. In the following figure we assume that technical progress enables industry to lower its marginal cost of pollution abatement (that is, the cost of removing one additional unit of pollution) from  $A_1$  to  $A_2$ . If the emission standard is  $S_1$ , the marginal abatement cost will decrease from  $C_1$  to  $C_2$  and industry will enjoy a cost reduction equal to the shaded area. One can also transfer the benefit of this technical progress to society by imposing a more stringent emission standard  $S_2$ , thus keeping the marginal abatement cost at the same level as before.

**Figure: Impacts of more stringent emission standards on the marginal cost of pollution abatement.**



Source: Barde (2000): Environmental policy and policy instruments, p.162

### This example shows 2 important facts:

1. Industry will be reluctant to reveal new technologies in order to avoid public authorities imposing ever more stringent measures based on new technologies.
2. It is not easy to ensure that benefits of technical progress are effectively transferred to society. If we have a look on taxes and fees, we will see that imposing emission taxes and fees automatically induces polluters to reduce their emissions in case of technological progress.