One of the early claims in favor of a cap-and-trade approach to pollution control, as opposed to traditional command-and-control innovation, was that market incentives would better encourage innovation in pollution control techniques and technologies. On the other hand, legal scholars such as David Driesen have long contended that pollution markets can actually reduce innovation incentives.

Now an empirical study by Margaret Taylor of Berkeley’s Lawrence Berkeley National Laboratory provides evidence that cap-and-trade programs in the U.S. have not stimulated, and may have retarded, innovation. Taylor looked at pollution control innovation in response to the acid rain program and the ozone transport program, both adopted under the federal Clean Air Act. From the abstract:

> The article shows that before trading began for these CTPs [cap-and-trade programs], analysts overestimated the value of allowances in a pattern suggestive of the frequent a priori overestimation of the compliance costs of regulation. When lower-than-expected allowance prices were observed, in part because of the unexpected range of abatement approaches used in the lead-up to trading, emissions sources chose to bank allowances in significant numbers and reassess abatement approaches going forward. In addition, commercially oriented inventive activity declined for emissions-reducing technologies with a wide range of costs and technical characteristics, dropping from peaks before the establishment of CTPs to nadirs a few years into trading. This finding is consistent with innovators deciding during trading that their research and development investments should be reduced, based on assessments of future market conditions under the relevant CTPs.

These results don’t mean that cap-and-trade has no role to play in policies directed at climate change or other problems whose solution requires innovation. But they emphasize one more time the need to carefully design cap-and-trade programs, and in particular to resist pressures to set the cap too high.