The key to understanding the economics of environmental protection is the concept of externalities. An externality is simply a cost that one person or firm imposes on another. In general, an externality means that an activity is causing more harm than it should.

Of course, a company or individual could decide to voluntarily correct the problem to eliminate the externality. But if the cost is significant, many people will not be altruistic enough to bear a heavy cost in order to help someone else. And corporations, which have a fiduciary duty to protect their own shareholders, are not in the business of being altruistic toward outsider.

If only a few people are on the receiving side of the externality, they might be able to enter a contract with the creator of the externality to take care of the problem. But that's obviously not going to be practical in complicated situations with multiple victims (and perhaps multiple sources), like urban air pollution. For instance, a negotiation involving all the major polluters and residents of Houston would be a nightmare.

Another solution, favored by some libertarians, is for the recipients to sue. But this is also problematic except in very simple situations. Imagine a lawsuit by all the residents of Houston against all the pollution sources in the city. This would be immensely complicated and expensive litigation, and in the end the decision would fall on a judge or jurors with no expertise in the problem.

So if the problem can't be settled by the private sector alone or by the courts, the remaining alternatives are legislative or administrative. There are basically only three options:

1. **Subsidies.** The government can pay the source of the externality to stop.
2. **Taxes.** The government can tax the source, so that the cost is internalized by the source rather than just imposed on others.
3. Regulations. The government can tell the source or sources to reduce the level of the externality, perhaps using a market mechanism like an emissions trading system to make the regulation more effective.

That's pretty much the range of options. They all involve government coercion — either to impose the tax or regulation on the externality, or to fund the subsidy by raising taxes. Free markets are great, but they won't solve externality problems on their own.

Put simply: significant externalities call for significant government intervention.

Next up: why we need administrative agencies like EPA.