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The Risks of "Cap and Trade"

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When discussions arise about Climate Change, and the possibility that carbon dioxide and the other greenhouse gases are responsible for the rise in global temperatures, one prevailing argument is that "we cannot afford to take the risk of the AGW argument being right, without doing something." However, in that discussion, there is rarely any mention of possible negative consequences to mitigating against increased levels of carbon dioxide in the atmosphere. The only positions mentioned are frequently the projections of dramatic rises in sea levels, the promise of worse storms, droughts and climate conditions and other projected severe costs of inaction. The costs of the actions themselves are not addressed, and the implications are that the world will be a better place if some of the current trends in Climate Change are, if nothing further, stopped from progressing further.

But there are costs to the required changes in lifestyle that a reduction in carbon dioxide production will require, and those potential impacts are rarely spelled out to the public, or to the politicians who must enact the legislation to put new laws in place. However politicians, particularly in those districts that are likely to be impacted by the changes in regulations, are already showing some sensitivity to the potential negative aspects of "cap and trade" and so it might be worth exploring the topic in a little more depth.

The Energy Summit in Columbia last week allowed some of the utility companies to spell out the levels of cost that will be incurred if cap and trade legislation is enacted, based on a projected cost for the allowance to generate a ton of carbon dioxide. But they largely built their discussion around the price of that portion of the electricity that they will still be allowed to generate. A cap and trade system, however, comes in two parts. The first part is to look at the overall production of carbon dioxide, say 6 billion tons/year, where the program cuts this back by, say 500 million tons a year. (This is the reduction in the capacity to produce or the "cap.") For the sake of the following discussion I will assume that 1 ton of coal produces very roughly 3 tons of carbon dioxide to make the arithmetic easier.

The first argument of those who look at this problem of a reduced supply is to suggest that the gap can be met by improving efficiency of electrical use, and conservation. However the implementation of a cap and trade policy is not predicated on that efficiency change happening, but it will occur as a separate event. And Jevons Paradox will tell you that "improving energy efficiency increases energy consumption." So that the savings in power required are unlikely to be realized.

Which means that if the utilities are restricted in the amount of power that they can generate with carbon-producing strategies, then they must have alternate supplies in place. Theoretically

that may well be the case. The number of states that are including a “sustainable source” quotient in their mandated supplies is steadily growing. However, as Montana, for example, is discovering there may be a difference between the targets and the practical realities. As credit has become tight, available funds for new farms are becoming harder to raise, and without a perceived increase in demand, it is harder to justify a new investment in plant when the old coal plant is still producing at a relatively low cost. And without the lead time being used to produce the new energy sources that will be needed, when the time comes to flip that switch, it may not yet be connected.

The problem actually is a little worse that this. Because most of the coal-fired power plants are quite old, and while maintained to continue to produce power, they are less efficient and more polluting that the more modern plants that are planned to replace them. But with the anticipated change in regulation now that EPA has ruled on carbon dioxide, almost all the originally about 200 planned new coal-fired power plants are holding back on commitments and roughly half have cancelled or indefinitely postponed their planned construction. Thus the increased supply of power from new plants may not appear.

There are two additional thoughts to consider. The first is the proposed restriction on emissions from these new plants:

> The (Waxman – Markey) proposal unabashedly bans new coal-fired electric plants. In 2009 new coal-fueled electric plants are limited to 1100 pounds of carbon dioxide per megawatt-hour (MWh) and 800 pounds after 2020. Present fossil-fuel electric plants emit the following pounds of CO2 per MWh: 2100 for coal, 1900 for oil, and 1300 for natural gas. . . . The bill that includes "security" in its title limits our plentiful secure coal supply to discharges of about one-half that allowed for oil and natural gas.

The second is that some parts of the country do not have the ability to tap into the wind and solar resources that are currently being suggested as the solution to the problem. (h/t Robert Rapier).

Productive wind is only available in a limited number of states and their regions, and similarly solar power cannot be relied on in a North-Eastern Winter. One cannot legislate an alternative technology that does not yet exist to fill in the gaps between what will be allowed from the power plants of yesterday, and the demands that a rebounding economy may place upon them. Mandating that the older suppliers of power close, before the new plants to replace them are installed will have significant consequences to the available jobs that can be supported, if the factories and industrial base begin to lose the reliability of the power sources that they have today.

Even, however, if they find some way of meeting the target for the renewable portion of their portfolio, the utilities won’t be out of the wood. Because the purchase of the allocation for the carbon dioxide they do admit will also bring additional cost. As noted at the Energy Summit a price of $50 per ton of carbon allocation would likely double electric bills in Missouri. If the price per allocation ton was raised to $200 per ton (which has been suggested as being necessary to support some alternate energy choices) this would raise the cost by a factor of five (i.e. a current electric bill of $200 would rise to $1,000 per month). In much the same way as Secretary Chu recognized at the EIA Conference that increases in the cost of oil contributed to the severity of the recession, one can equally imagine that a similar effect will be felt with an equivalent rise in the cost of electricity.

The current path forward, with a hesitation in construction of new power plants holds the risk

that the United States will not have the power that it needs in the future to match industrial and domestic demands. In those cases it is often industry that is the first to see the cutbacks in supply when load shedding is needed. But the resulting drop in production, and international competitiveness, may well damage or destroy the recovering economy after this recession comes to an end. That too is a risk that should be protected against.