



December 20, 2007

To: Climate Advisory Team Members
 From: Todd Myers, Environmental Director, Washington Policy Center
 Subject: RCI-3 Comments

At the upcoming Climate Advisory Team meeting (CAT), team members will be examining a number of the proposals made by the Technical Working Groups (TWG) that have not yet been finalized, including the Residential/Commercial/Industrial option 3 (RCI-3). The members of the CAT should be very skeptical of the projections and strategies included in this option. There are a number of weaknesses, including exceedingly rosy projections, recent empirical data that contradicts assumptions, a lack of firm data for the projections and a wide-ranging scope that makes projections simply unreliable.

My comments below address particular elements of the RCI-3 description, and the page numbers listed after each citation refer to numbers in the option description.¹

Increase the Use of Local Timber

“Expand the use of climate-friendly products in building materials.” p.19

“Promote the utilization of products harvested, manufactured and shipped within Washington State as a means to lessen the greenhouse gas emissions associated with the harvesting of natural resources, product manufacturing and the shipping of products to market.” p. 20

“Promote the state’s local renewable forest products industry as a good choice in producing building products for reducing climate change impacts, relative to fossil fuel based materials, as well as promoting the minimization of long-distance materials transportation through use of local forest industry products.” p. 22

The increased use of renewable building materials from Washington state in construction can be an effective way to reduce carbon emissions. This will, however, require increased timber harvesting. Washington currently imports a significant percentage of wood from elsewhere, including British Columbia, Oregon and overseas. Reducing the distance traveled by wood means replacing imported wood with locally grown and harvested timber. As I note below when dealing with purchases of local food, miles traveled by the final product is not always a useful metric when trying to determine carbon footprint, but all things being equal, it can help.

¹ I am using the November version of the description, “Residential, Commercial and Industrial Technical Work Group Summary List of Recommended High Priority Mitigation Options,” November 19, 2007, <http://www.ecy.wa.gov/climatechange/TWGdocs/rci/111907RCIpolicyoptions.pdf> (Accessed November 23, 2007)

Increased harvest can be done in a way that is environmentally responsible and sustainable. Washington currently enjoys some of the most restrictive forest practice standards in North America. The timber harvest level on federal lands is significantly below the levels set by the Clinton timber plan.

Despite these restrictions, some are looking to reduce the amount of timber harvested locally even further, which would make it more difficult to live up to the values outlined in the policy.

Obviously, Washington needs to decide on a statewide basis whether it truly wants the amount of timber harvested to increase or decrease.

CAT members need to explicitly advocate one of two directions:

- Increased reliance on local timber, which will have a positive effect by reducing CO₂, and will require increased timber harvest on private, state and federal lands. This may also include steps to override local objections to timber harvesting, or...
- It is not reasonable to expect an increase in the amount of local timber harvest in Washington state and we will have to continue to import wood from elsewhere or rely on energy-intensive materials like steel and concrete.

Without an explicit statement from the CAT about the importance of using local renewable building materials, the global benefits of the option will be quickly undermined by local politics. Such a patchwork approach dooms the goal of reducing travel distances for building materials to rhetorical posturing.

Require “Locally” Grown Food to Reduce Food Miles

“Support growth of localized agricultural food production and community-supported agriculture programs. Require that a percentage of all state-funded food be sourced within 100 miles of the user.”
p.25

Numerous recent studies have indicated that the concept of “food miles” (i.e. the distance traveled by food) is not a useful metric for estimating the CO₂ emissions associated with a food product. Three problems can be highlighted quickly.

First, food production is heavily dependent on the quality of soils, forage and climate. Providing incentives to grow food in inappropriate regions is likely to increase the use of energy intensive practices such as increased use of fertilizer. One study found that feed-raised lamb in the UK was significantly more energy-intensive than lamb from New Zealand, making the carbon footprint of NZ lamb so low that it was more effective to ship it to the UK than purchase locally raised lamb.

Second, food-miles account for the distance from the producer to the purchaser, but ignore the distance traveled by the inputs. For instance, it is less energy intensive to ship milk to King County from Eastern Washington than to ship hay to dairy farms in King County. As a result, buying local milk in King County may actually increase carbon emissions.

Finally, the method of transportation is important, not just the miles traveled. One study found that Idaho potatoes shipped by train to the East Coast had a smaller carbon footprint than locally grown potatoes shipped by truck.

A more detailed study of this concept is necessary before it should be considered. Ultimately, however, the number of factors that influence the carbon intensity of food is so complex that there is unlikely to be any credible shortcut other than cost itself, which includes the cost of fuel and energy.

Promote Voluntary Green Energy Purchases

“To provide further support for renewable energy resources beyond what I-937 requires of the state's electric utilities, encourage utilities to develop and offer (or, as appropriate, continue to offer) ‘green power’ programs that utility customers can voluntarily subscribe to.” p. 20

As I-937 is currently written this is an unrealistic goal. In fact, some utilities are already scaling back their green energy marketing efforts. The competition for renewable power has increased as other states in the region have adopted progressively higher renewable portfolio standards. As a result the cost for renewable energy has climbed, as acknowledged by Michael Lazarus at the November 14 meeting. Thus, utilities are taking a conservative approach, acquiring green energy to meet the targets and de-emphasizing voluntary purchases since they do not count toward I-937's required targets.

The reason is clear. No utility wants to increase the demand for scarce renewable energy by selling voluntary green energy credits. This increased demand would simply increase the amount utilities need to purchase by the first target date of 2012. Utilities may find themselves in the ironic position of exceeding the overall targets, but still face penalties because the voluntary green energy they sold doesn't count, pushing them back below the target.

Without a change to I-937, utilities will increasingly move away from voluntary purchases as competition for the limited supply of renewables increases.

One option that we have promoted in the past² is to allow utilities to earn additional profit on green energy sales. State law currently outlaws this additional financial incentive. Utilities have little incentive to increase their own burdens in acquiring renewable energy to meet the targets. They do, however, have clear disincentives to sell green energy.

Experience shows that financial incentives do work as outlined above. For instance, Portland General Electric's renewables program is the largest in the nation, due in large part to a contract that pays their marketing firm for every new green energy customer.

If the CAT is serious about promoting voluntary green energy it should examine this type of incentive. Not only do voluntary purchases offer the ability to exceed the I-937 targets but they reduce energy costs for the poor. Increases in energy costs are regressive because the poor pay a larger percentage of their income for energy than the rich. Voluntary purchases, however, are progressive because they allocate *all* of the costs to those who can afford them.

Finally, using general tax revenue to provide subsidies to promote additional green energy purchases would also be regressive. Since Washington's tax code is heavily reliant on regressive taxes, subsidies would simply take money from one regressive tax to offset regressive energy costs. A market-based

² See Todd Myers, “Energizing Washington's Market for Green Power,” March 2007, http://www.washingtonpolicy.org/Environment/LEGMEMO2007_greenenergy.html

approach that allows utilities to earn a profit is the least onerous and most progressive option to increase green energy sales.

Increase Regulations Requiring “Green” Building Standards

Consider going beyond existing certification programs to Architecture 2030-level goals for new buildings, providing energy consumption performance (energy intensity) that is 50% of the regional average for each building type, or define goals as the higher levels of LEED (Gold/Platinum), higher levels of Built Green (4-Star, 5-Star), or similarly-stringent third-party-verified building energy efficiency certifications in other systems of standards.” p. 19

“Encourage state agencies to utilize the LEED, Green Globes, Built Green, or other appropriate rating systems to promote the construction and design of energy-efficient buildings. Provide incentives for use of these systems statewide for construction in the private sector.” p. 20

Before the CAT encourages expansion of “green” building standards it should take a close look at the difficulties schools are already having attempting to meet the current standards. The results from schools across the state show that such codes have fallen far short of the energy savings projected.

Schools currently using the High Performance Schools standard have found:

- Construction costs were higher than projected
- Energy savings are lower than expected (or nonexistent)
- With the elimination of state support to meet the standards, school districts are now finding that they have to bear the cost of these regulations themselves, despite promises made just two years ago.

When the High Performance School Standards were introduced in 2005, they were projected to reduce energy use by between 25-50 percent. Several schools around the state were selected as pilot projects to demonstrate the effectiveness of the concept. Several other schools also used the standards and were touted as examples of the potential success of the system. A recent look at the energy data, however, shows that none of the schools are meeting the minimum expected energy targets and that some actually have higher costs than schools built in the same district at the same time but without the new regulations.

For example:

- In Spokane, Lincoln Heights Elementary saw an energy savings when it was rebuilt using the “green” building standards, but it is still using 14 percent more energy per square foot than Browne Elementary which did not use the “green” standards.
- Franklin Elementary in the Lake Washington School District has low energy costs, but four other non-green schools have still lower energy costs per square foot. Additionally, while advocates of “green” buildings claim that it costs only two percent more to build a green school, the District says Franklin cost about six percent more than it would have, all to achieve a level of energy efficiency already seen by several other schools.
- The Tacoma School District built two middle schools in 2003, one using “green” standards, the other without. Mason Middle School, built without the green standards, spent 87 cents per square foot for energy in 2006-07. Giaudrone, built with green standards, spent 45 percent *more* per square foot in the same school year. In 2005-06 it spent 24 percent more than Mason,

and in 2004-05 it spent 34 percent more. When it was built, the Washington Conservation Voters claimed Giadrone had “realized energy savings of 35%.”

These are only a few examples, but in every district the trend is the same, with non-green schools using the same or, in some cases, less energy than “green” schools. While it is difficult to disaggregate the additional costs associated with green buildings, every facilities manager I have spoken with has indicated that both up-front and ongoing costs were higher than expected.

Advocates point to studies that indicate “green” buildings do achieve energy savings targets. These studies, however, have significant flaws. For instance, some studies exclude buildings where builders ultimately rejected using the standards, leaving only the data from buildings where using the standards was financially positive. This self-selection error makes the data largely useless. Health care studies sometimes suffer from this problem because patients who are not responding to a treatment leave the study, leaving only patients who are doing well to be included in the final analysis, skewing the results.

Other studies of green buildings compare energy savings not to comparable contemporary buildings that do not use the standards, but to the buildings they replaced which are often decades old. Given this standard, you could count a Hummer H3, which has a peak fuel efficiency of 20 mpg, as “green” compared to the 1960s car it replaced when the average fuel efficiency was about 13 mpg.

It is important to note that in the description of RCI-3, none of the data sources address the issue of the effectiveness, or lack thereof, of green buildings. It is not possible, therefore, to address the reliability of their projections in this area. The annex for RCI-3 does not indicate whether a 50 percent reduction in energy usage is feasible, it simply assumes that it is for the purposes of estimating economic benefits.

Additionally, the examination of additional costs to meet the 50 percent reduction target is incomplete, accounting only for the costs of photovoltaic water heaters, biomass generation and increased costs for purchases of other renewables. Green building standards have many other costs associated with them beyond simply accounting for changes in water heaters. For instance, many studies highlight increased architectural and engineering costs for buildings to meet LEED standards. As a result, the projections included in the CAT analysis of RCI-3 are unreliable.

The option recommends going to higher levels of LEED certification, like Gold or Platinum. These options are widely recognized to be extremely expensive. For instance, they require buildings to purchase more renewable energy. The only way to do that is to replace low-cost energy from coal, gas or hydro with high-cost renewable energy. Even if the buildings are saving energy, they are purchasing more green energy, increasing their cost per kWh. Whether the savings from energy reduction would offset these increased costs is speculative.

Further, while some lower levels of certification allow builders to pick-and-choose the least expensive options and provide some flexibility, achieving Gold or Platinum levels of LEED require that builders meet almost every requirement. As a result builders must accept elements that would otherwise be cost prohibitive. Tacoma’s new environmental services building, which seeks a LEED Platinum rating, is a dramatic representation of the cost. The cost per square foot is twice that of other new, high-class business buildings in the community.³

³ *Tacoma News Tribune*, “A Platinum Statement at a Platinum Price,” December 16, 2007, <http://www.thenewstribune.com/opinion/story/230922.html> (Accessed December 16, 2007)

This raises an important question as to what happens when buildings do not meet the energy saving targets. Will there be enforcement action? How would this occur? Most likely, regulators would simply be forced to accept the certification of LEED or another system as evidence of a good faith effort to meet the goals.

Further, since certification systems are not static, requiring buildings to meet a standard hands legislative authority to a non-elected body, the U.S. Green Building Council or others, located far from the jurisdiction where the standards are being implemented. What happens when the standards are modified? Would the legislature be required to re-adopt the standards? Would these certification organizations be required to meet the rule-making and public meetings requirements when they changed the rules? If not, wouldn't this violate constitutional guarantees of transparency and representation?

Finally, if the standards did not meet the 50 percent target for energy savings, regulators would likely scramble to add additional requirements in an effort to meet the targets. This would only increase the cost of reducing CO2 beyond the current anticipated costs.

All of these problems indicate why there has not been widespread adoption of "green" building standards by businesses. According to a report by the State of California in 2003, about 16 percent of new government buildings were using the standards but only one percent of businesses. These numbers may have changed in the past four years, but the fact that the percentage of new commercial construction using the standards is in the single digits indicates that the economics are quite shaky.

Given the many problems with "green" building standards as they exist, the CAT should demand better information before pushing to make the standards even more costly and restrictive. Hasty decisions are not only expensive, but they distract from options that are more efficient and effective, which can reduce the overall level of CO2 reduction.

Using the Market or Political Regulation

"The gap between the current market dynamics and societal green house gas emission reduction targets can only be bridged using strategies combining incentives and more stringent regulations, including more stringent building energy codes." p.30

This assumption appears to underlie the whole of RCI-3. The notion that we can "only" achieve a reduction in greenhouse gases in the residential, commercial and industrial sectors with "more stringent regulations, including more stringent building energy codes" constrains the CAT's ability to think about alternatives that are more efficient and effective.

The assumption that regulation is required appears to be one reason that so many disparate recommendations are included in RCI-3. The implementation mechanisms alone run to five pages in the option and are quite wide ranging. They include changes to SEPA analysis, "buy local" efforts, changes to growth management, requirements for energy efficient appliances, "green" building standards and even a proposal to "Move from a State Dept. of Transportation to a State Department of Urban, Rural, and Regional Mobility to recognize various mobility needs and modes needed in the 21st Century."

If regulation is required, as the assumption indicates, it is not surprising that a long list of potential regulations will emerge as regulators attempt to design rules to address every potential area of energy use by families, businesses and industry.

Regulation, however, is the most expensive approach involving significant overhead costs, expensive false starts and may actually hinder the development of technology to reduce CO2 emissions.

First, any new regulation also requires administration, enforcement, rules and bureaucracy, all of which can amount to significant costs. Given the dispersed nature of CO2 emissions, enforcement costs would be high.

Second, technology should be at the center of any long-term approach to reducing CO2. While the tone of much of the current debate about CO2 relates to compelling people to change behavior, technology has consistently provided a better answer to environmental protection. For instance, even as there are more people driving larger cars ever more miles, the level of air pollution has steadily declined in the United States and Washington.

This is also true in the area of CO2 emissions. A study of CO2 emissions worldwide published in the Proceedings of the National Academy of Science this summer demonstrates how technology has had a dramatic impact on CO2 emissions despite economic growth. For instance, since 1990, U.S. CO2 emissions per unit of GDP have fallen 26.5 percent, without the pressure of CO2 regulation or a carbon price. As the study notes, carbon intensities and emissions are growing most quickly in developing nations, where efficient technology isn't available or is cost prohibitive.

Unfortunately, government is very poor at choosing the appropriate direction of future technology. Hybrid vehicles are the most dramatic example of this dynamic. California's 1990 law requiring an increase in zero-emissions vehicles (ZEVs) assumed that a small regulatory push would generate a market for fully electric vehicles. They were wrong. In 2001, California had to modify its emissions laws to accommodate hybrids because when the law was originally written in 1990, policymakers did not know that only a few years later hybrids would be the state-of-the-art in fuel efficiency. Hybrids sold despite, not because of, California's regulation.

Some claim that politics and lobbying, not technology, killed electric cars in California. This is clearly false. Toyota's newest Prius includes a fully electric mode, but the range is very small due to lack of battery space. It is unlikely that Toyota is artificially limiting the range and denying itself a larger market share due to politics. Finding a huge market for efficient vehicles, carmakers are trying to satisfy the demand but are simply being hindered by the technology of batteries and other elements.

It is also a strange rejoinder to say that the electric car failed due to politics but the answer is more politics and increased involvement of politicians and government agencies.

Further, as should be obvious, the most efficient technologies don't remain that way for very long. Regulation can't keep up with this dynamism. The minute a regulation is enacted it is obsolete and cannot take into account technologies already on the drawing board. This is not only inconvenient, but actually hinders the development of new technology. Any new technology faces several economic barriers – development costs, distribution, market acceptance and others. Adding an additional barrier, hiring lobbyists to amend laws and rules to include or subsidize the new technology, puts additional speed bumps in the path of efforts to create CO2 reducing technologies.

In short, the assumption that CO2 reduction is possible “only” by enacting comprehensive regulations is incorrect and biases decisions toward compelling costly and difficult lifestyle changes and hinders the development of technology, the approach that has historically been the most effective answer to environmental challenges.