CHAPTER THREE
ENVIRONMENTAL POLICY

1. Setting Priorities for Protecting the Environment

Recommendation

Create a Washington Environmental Priorities Council that uses scientific and economic information, not political factors, to set select projects for protecting the environment.

Background

Washington's policymakers manage a variety of environmental restoration projects, regulations and programs that are designed to protect the environment, reduce pollution and maintain the quality of life for state residents. Unfortunately, our environmental priorities are often determined more by politics than by objective science and economic information.

As the state faces budget shortfalls, the margin for error in our expenditures falls. The problem is not only that the state spends on projects that do not help the environment. Misusing taxpayer dollars means less funding is available for projects that would yield large environmental benefits.

The state's decisions about environmental spending are not made based on rigorous scientific and economic comparisons.

For example, in 2008 the Washington Conservation Voters supported the creation of a state program encouraging schools to "buy local" food. Initially, the Farm to School program received $290,000. The 2009 supplemental budget cut this to $142,000. Subsequently, the program was zeroed out. Such a quick cancellation in funding indicates that the program was never really effective in the first place. Indeed, when Washington Policy Center asked for metrics from the program about

environmental impact, officials admitted they had none. The state spent $432,000 and achieved no benefit for the environment.

In the Spring of 2010, the state auditor found the Puget Sound Partnership spent hundreds of thousands of dollars on frivolous projects that did nothing to improve the health of Puget Sound. The audit identified a number of areas of waste, including nearly $12,000 to purchase vests and jackets with the Partnership's logo as gifts for supporters, and $5,000 for lip balm sticks for promotional use. In all, the auditor's office found more than $300,000 in ineffective spending by the partnership.

The state's climate strategy has also been a source of expenditures that yielded no benefit. As part of developing a strategy on climate change, the state hired the Center for Climate Strategies (CCS). For this service, Washington paid $200,000 to CCS. Other states also hired CCS to do similar work. They, however, paid much less. Minnesota, for instance, paid only $40,000 for the identical process. South Carolina paid nothing for its services.

What is more, the proposals developed by the Climate Action Team were never acted on, and a bill incorporating their ideas never even received a vote in committee. The state spent $200,000 for nothing.

This is not the only example of Washington wasting money on climate efforts. As part of the state's participation in the Western Climate Initiative (WCI), it pays dues to be a member. Initial dues for Washington came from the Department of Commerce (then Community, Trade and Economic Development, or CTED) and the Department of Ecology. The dues amounted to $134,990 in total. By way of contrast, California paid only $89,000, Ontario paid $90,000 and Oregon paid $30,000.

Finally, the state has emphasized using highly visible, but inefficient, solar panels on state buildings. In 2010, the state opened a new 2,000-bed prison called the Coyote Ridge Corrections Center that some are calling the "nation's greenest prison."[1] The prison features a "solar array that covers 16,929 square feet" that is rated at 75 kw of energy. Installation cost taxpayers $880,000. The solar panels will save the state an estimated $4,000 to $7,000 a year in electricity costs, with a total savings of $140,000 during the panels' 25-year lifespan. Over the 25-year lifespan, this means the state will achieve carbon emissions reductions worth about

$6,700. Adding the $6,700 to the $140,000 yields a savings of $146,700 at the cost of spending $880,000. The state is spending $6 to save $1.

This short list of projects cost a total of $1.5 million. This is about the amount the state diverted from other environmental programs, including programs on clean air and toxic cleanup, to fund implementation of the Governor's climate change executive order issued in 2009.[2]

Without an objective assessment of the state's environmental priorities, taxpayer dollars are spent on projects that do not yield environmental benefits and waste opportunities to make real improvements. Such an assessment would provide credible, thoughtful information to policymakers so environmental policies would be more certain of producing environmental benefits.

Without a Guide, Politics Rules the Day

Legislators make these sorts of mistakes because they do not have an objective list of priorities from which to choose. Without guidelines based on science and economics, legislators turn to politics to determine priorities. This is understandable, although counterproductive.

Not all policymakers are scientists or economists. All politicians, however, do have an understanding of what sells with the public—otherwise they would not have been elected. In that circumstance, given a choice of policies that promises similar environmental benefits, politicians will base their decision on their area of expertise—social benefits. They will choose policies they believe will yield the greatest public image benefit for themselves.

Giving policymakers a priority list based on sound science and economics makes politics a tiebreaker among equally good projects, rather than the primary driver of an environmental policy decision. People may differ some in their goals, but a ranking based on science and economics would provide a strong foundation from which to allow personal values to play a productive role, rather than the current role where personal desires are used to override and ignore the real-world success or failure of environmental policies.

Ultimately, without a reasoned ranking of policy options, politicians are left with little more than their personal whims and political trends to make decisions about an issue they claim is critical to protecting the environment.

Policy Analysis

The Environmental Priorities Council would combine a scientific and economic analysis of the state's environmental problems, examining them to determine what issues are truly important and where government policy can make the most difference.

Sound science is critical to understanding the environmental risks we face. What are the threats to salmon? What is the risk from carbon emissions or other pollutants? Is there enough stream and forest habitat for animals and fish? Science can accurately assess these risks, indicating where the largest threats are and where we are closest to the environmental danger zone in each of these areas.

Economics can provide an assessment of where we can make the most difference when addressing these problems. What approaches make the most sense to improve energy efficiency and reduce carbon emissions? What are the costs and benefits of various strategies to improve salmon populations? Would the environment benefit more from focusing on clean water or by reducing air pollution? By studying the improvements in human health, cost reductions and other benefits, a sound economic analysis would identify the best ways to reduce the risks identified by environmental science.

Together, science and economics provide a foundation for sound decision making. Neither of these disciplines provides a perfect assessment, and there is still a role for personal values in making final policy decisions. Some people argue the loss of individual liberty is not worth small improvements in environmental quality—others argue the opposite.

The Washington Environmental Priorities Council would identify key environmental issues facing the state and ask scientists to provide risk assessments. The council would take those assessments and bring together economists to analyze the costs and potential policies to address these risks. The council would then use that information to generate

a prioritized list that would provide lawmakers a clear road map for enacting environmental solutions.

Such an approach would not only avoid the trap of falling for eco-fads and other trendy environmental policies, it would also ensure the state spends its scarce resources on approaches that yield the greatest environmental benefit.

Since concern for the environment begins with a concern about the smart allocation of scarce resources, spending the state's limited budget wisely would seem the least we can do.

Recommendation

Create a Washington Environmental Priorities Council that uses scientific and economic information, not political factors, to set select projects for protecting the environment. Policymakers should establish a Washington Environmental Priorities Council to create a list of environmental projects based on an economic cost-benefit analysis and scientific review, rather than on political considerations.

2. 'Green' Building Mandates

Recommendations

1. End mandated "green" building regulations for schools and other public buildings.

2. Return control of school design, maintenance and remodeling to local district facilities managers.

Background

Promoting Performance-Based Green Buildings

As school districts and the state struggle with limited resources, policymakers need to ensure that taxpayers receive the educational and environmental benefits they are paying for. After six years, independent analysis and the words of district facilities directors themselves demonstrate that Washington's "green" building law is not only failing to achieve the promised goals, it is actually doing more harm than good.

In 2005, the legislature required that all new Washington schools and state buildings receive "Silver" certification from the Leadership in Environmental an Energy Design (LEED) system or meet the Washington sustainable school design protocol. The law said:

> The legislature finds that public buildings can be built and renovated using high-performance methods that save money, improve school performance, and make workers more productive. High-performance public buildings are proven to increase student test scores, reduce worker absenteeism, and cut energy and utility costs.[3]

Studies were provided to back up these claims. In January 2005, the legislature received a study commissioned by the Washington State Board of Education and the Office of the Superintendent of Public Instruction and conducted by Paladino and Company.[4] The study claimed the payoff from these "green" schools would be significant, predicting a "conservative" estimate of a 25% reduction in energy use,

five percent increase in student test scores, and a 15% decrease in student absenteeism.

The small additional building cost would be more than offset by the expected energy savings, leading to a predicted 150% return on investment.

Six years after those regulations were imposed, however, the very schools used in the study are failing to meet the goals claimed. In many cases, school districts have actually incurred higher costs for "green" design elements that provide little benefit, but added greatly to the cost of constructing the building. The state's own student achievement rankings show no difference between students at "green" schools and those attending schools built without the costly "green" requirements.

Given the record of failure, the legislature should move from a prescriptive, cookie-cutter approach to one that allows local school directors to use their expertise to customize buildings that fit local circumstances and local climate. Research demonstrates that school districts have successfully improved energy efficiency without politically imposed rules.

Allowing local school districts to find the best ways to cut building energy costs, instead of forcing districts to comply with an arbitrary "green" rule regardless of outcome, will truly make Washington's schools "high performance."

Failing to Make the Grade

When developing a "green" regulation for Washington's schools, the state hired Paladino and Company, which notes on its website that, "Our mission is simple: transform development into a sustainable process through collaboration on exemplary green building projects."[5] The study focused on five school districts, examining the costs and benefits of various strategies at each school. Not surprisingly, they determined that requiring green building standards would yield large dividends to the state.

At the time of the study, however, the research was speculative, as many of the schools had not yet been opened or had been open less than

a year. Six years later, the actual results from the schools are significantly different from the results promised in the report.

For instance, the study said "green" schools would reduce energy use by 30 to 50%. None of the schools, however, has achieved that goal. There are, however, "green" schools that use 30% *more* energy than comparable schools built before the rules went into effect.

Through the 2009 school year, several "green" schools were less energy efficient than their non-green counterparts located in the same district.

In the Bellevue School District, Sherwood Forest Elementary, built under the "green" regulations, used 51% more energy than Somerset Elementary in the same district. In 2011, the Joint Legislative Audit and Review Committee (JLARC) confirmed this, noting that Sherwood Forest used 53% more energy (BTUs per square foot) than expected and ranked near the bottom, 12th out of 16 district schools, in energy efficiency.[6]

The same pattern emerged in Spokane. Through 2008, Lincoln Heights Elementary School in Spokane, one of the pilot schools built under the "green" buildings program, used 15% more energy per square foot than Browne Elementary, built nearby without the "green" requirements. JLARC's audit found that Lincoln Heights uses 25% more energy than was anticipated.[7]

JLARC's analysis does report Lincoln Heights produced "utility savings" of about $12,698 per year. This estimate is questionable. It is not based on a comparison of recently built non-green schools, but is a general estimate. Even assuming the number is correct, however, the study finds it will take nearly 30 years to recover the additional construction cost of the building. JLARC estimates the useful life of a school building before major remodeling is needed to be 20 years. Put simply, JLARC's analysis indicates the building's mandated "green" features will never pay for themselves.

These are not isolated incidents. JLARC found the majority of "green" schools, eight of thirteen, would not earn an Energy Star rating. It also found that five of the nine schools analyzed for energy efficiency were in the bottom half of the schools in that district. In other words,

most "green" schools used more energy than *average* non-green schools, not simply new, green schools in the same district.

Proponents of continuing the "green" building mandate have offered three responses.

First, advocates point to the JLARC report, noting that eight of the nine schools analyzed saw energy efficiency improve over time. They argue green schools need time to achieve the promised results. The reason these schools have seen such significant improvements, however, is largely because they started out so poorly.

For example, Sherwood Forest is one of the schools that improved the most, reducing energy use by 28% from its first year of operation to the most recent year. However, even at its best, Sherwood Forest is still relatively inefficient, using 12% more energy per square foot than the average Bellevue elementary school. Forest View Elementary, in Everett, saw a 26% decrease in its energy use over time. It, however, ranked 11th out of 17 schools in the school district, and still does not qualify for an Energy Star designation.

Second, some advocates argue new schools attract more after-school events, resulting in more energy use during the day. While this has been hypothesized, the data to back up this claim are very poor. For instance, the Spokane School District estimates that Lincoln Heights was used 3,776 additional hours during the 2008–09 school year. This would amount to 10 extra hours of building use for every day of the year. This level of use is highly unlikely.

Indeed, building-use data do not always support the claim. While Lincoln Heights, a "green" pilot school, was used more than Browne Elementary, a non-green school, other "green" schools saw less use. Both Lidgerwood and Ridgeview, "green" schools in the Spokane district, saw less after hours use than Browne. Since Browne is already more efficient than these "green" schools, incorporating after-hours use only exacerbates the gap between the schools.

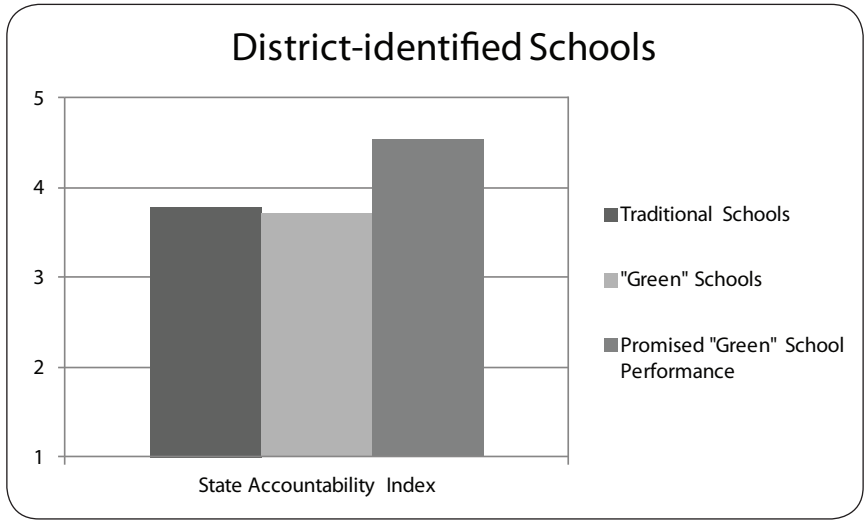
Finally, "green" building advocates argue that these schools are about more than just energy savings. This is true, but it should not distract from the initial promise that the regulations would "pay for

themselves." The effort to change the subject is a tacit admission that "green" schools are not performing as promised.

Additionally, the evidence indicates that "green" schools do not improve student attendance or student learning.

In early 2010, the Washington State Board of Education released the "Achievement Index," rating every school in the state on a scale of 1 to 7. The Board said, "The Achievement Index was developed by the Washington State Board of Education and offers individual school data from 2007–2010," and "is designed to provide users with a comprehensive and clear analysis of school performance."[8] The index rates more than just test scores, combining the Measurement of Student Progress, High School Proficiency Exams and graduation rates to assess the performance of each pubic school.

Analyzing the performance of 42 "green" schools compared to the other schools in those same districts, "green" schools performed slightly worse than traditionally built schools. As the graph below shows, the "green" schools fall far short of the promised 20% improvement in student performance.



The costs have been well above what supporters projected. Estimating the cost of the "green" elements of these schools is very difficult and no district studied was able to measure these costs with confidence. Several districts, however, did offer an educated guess and

everyone agreed that the best estimate was that "green" buildings cost about six percent more, not the two percent promised by Paladino and Company in its report.[9]

Self-reported data to JLARC offers a lower number of about three percent more on average. Even with that lower number, JLARC's data demonstrates that none of the schools they surveyed would pay for themselves in the building's 20-year lifespan.

Policy Analysis

Why Green Regulations Do Not Work

There are a number of reasons "green" building regulations do not live up to the promises made to the legislature in 2005. First, the initial cost projections were extremely rosy. It is likely that the bill's supporters chose the most optimistic estimates in order to get the legislation passed. "Green" building backers over-promised, so it is not surprising that school districts are now under-delivering.

Second, the rules rely on a cookie-cutter approach that requires spending that does little to achieve energy savings or other goals, but must be met to receive the required green certificate points. In Spokane, for instance, additional bike racks were installed to meet a requirement, but in reality the racks largely sit empty.

Third, the rules often try to impose contradictory goals. They call for larger windows in the belief that more daylight increases student test scores. The big windows, however, greatly increase energy costs by making a room colder in winter and hotter in spring and summer. Similarly, the schools recirculate air more frequently to improve the "health" of the buildings. That also means running the HVAC fans more, increasing energy use.

Given these contradictory goals, it is not surprising that green buildings don't deliver the promised benefits. The energy-saving goal may be desirable, but the top-down rules fail to achieve the promised results.

Rewarding Success Not Effort

School officials do not need much additional incentive to improve efficiency. In fact, average per square foot energy costs for Spokane schools has fallen in every decade, with schools dating from the 1930s being about 18% less efficient than schools built in the 1990s. Facility directors know their districts, and the data show that they successfully improve the energy efficiency of their buildings year after year without a "green" mandate imposed by Olympia.

In Bellevue, most schools already met Energy Star standards before the "green" rules went into effect, indicating the district managers already understood the value of energy efficiency. In Bethel and Lake Washington school districts, facilities managers have made significant improvements simply by changing behaviors and taking other low-cost steps.

By removing the additional, costly "green" regulations, local districts would make improvements that would pay for themselves, avoiding others that save little in energy but add a lot in cost. At a time when tax money is scarce, this would also provide budget accountability at the local level, allowing school leaders to set priorities and choose building projects that best improve student learning.

Legislators should repeal the "green" rules they imposed in 2005 and provide districts with more flexibility. Doing so is the surest way to achieve the promise of improving energy efficiency.

Recommendations

1. **End mandated "green" building regulations for schools and other public buildings.** They have failed to live up to their promise and cost more than initially projected. They have failed to save energy and improve student test scores, as "green" activists promised they would.

2. **Return control of school design, maintenance and remodeling to local district facilities managers.** District facilities managers have consistently shown superior ability to create energy efficient buildings that serve student needs.

3. Greenhouse Gas Emissions and Carbon Pricing

Recommendations

1. Eliminate costly and ineffective carbon regulations and programs.
2. Put an appropriate price on carbon emissions.
3. A price on carbon emissions must be revenue neutral to reduce the cost to businesses and provide an incentive for innovation.

Background

Washington's climate policy has failed. Despite a range of regulations, significant government spending and a tremendous amount of political debate, state efforts to reduce carbon emissions and improve energy efficiency have fallen far short of the goal.

Since 2004, Washington's carbon emissions have actually increased. Washington is one of only nine states to see emissions increase during that period. The United States as a whole saw emissions decline by nearly 16%.[10] Managers at the Washington state Department of Ecology admit they are unlikely to meet the official goal of reducing carbon emissions 20% by 2020.[11]

The City of Seattle is no different. Despite high-profile efforts to curb carbon emissions and meet the reductions target of the Kyoto Protocol, city officials now admit they are unlikely to meet that target. Indeed, Seattle's most recent report on greenhouse gas emissions notes, "Seattle's emissions increased approximately 80,000 metric tons from 2005 to 2008," and that meeting the Kyoto target would "be challenging as our city continues to grow in population and bounces back from the economic downturn."[12] Virtually all of the reductions occurred in the 1990s, long before Seattle enacted its emissions-reduction policies.

King County officials made a similar admission, saying they will have difficulty meeting their 2012 emission-reduction targets.

As a result, Washington has lost important opportunities to improve energy efficiency. At a time when Washington's economy is struggling, taxes spent fruitlessly are dollars that could have created jobs, reduced unemployment and increased prosperity. Unfortunately, energy policy to date reflects the worst of both worlds—increasing costs on businesses and families while yielding no environmental benefit.

It is time for a fresh start. Washington should repeal the costly and ineffective regulations that have failed to reduce emissions as promised, put an appropriate price on carbon and cut taxes on investment and job creation. Removing needless regulation and cutting investment taxes would not only help the economy, it would create incentives to invest in energy-efficient technology and reduce energy use.

By repealing failed policies and promoting innovation, Washington can make real progress on energy efficiency.

Policy Analysis

The Failure of the Current Approach

So far there has not been an honest examination of why state emissions policy is failing. The reason is that many of the approaches favored by politicians have not been successful, have spent large sums of money for little benefit or are simply inaccurate. Three examples tell the story.

First, Washington's "green" buildings law has failed to reduce carbon emissions despite increased costs for school districts. Over the past five years, tens of millions of dollars have been spent to comply with the regulation even as the evidence from the districts and the legislature's own auditing agency demonstrate no energy savings.

Second, the state is now requiring that carbon emissions be included in environmental analysis in the State Environmental Policy Act (SEPA). That analysis, however, is unlikely to be a reliable indicator of actual emissions. The state and King County use different methodologies to calculate greenhouse gas emissions. Additionally, many of the calculations are based on national averages. Since Washington has one of the lowest carbon intensities in the United States, using the national average greatly overestimates actual emissions.

Third, the primary policy to reduce transportation-related carbon emissions is to expand transit and light rail. This approach, however, has not yielded the promised ridership and carbon emission reductions. Light rail in King County is well below ridership projections. Even if light rail eventually meets ridership projections, it would reduce statewide carbon emissions by less than one percent of current levels by 2030, a tiny reduction for a very high price.[13]

These policies are failing for some simple reasons. First, they assume that effective policy can be made based on speculative data, even when similar projections have turned out to be wrong. Second, they assume policymakers can change the behavior of citizens in controllable ways. This belief is consistently proven wrong and often creates unintended consequences that far outweigh any positive results.

Finally, policies are often chosen because they make policymakers look good to voters or special interest groups, rather than being based on scientific or economic justification. These failures mean Washington is actually seeing emissions increase even as the nation as a whole reduces emissions.

Instead of attempting to guide carbon emissions policy centrally, and making high-cost decisions that fail to live up to their promise, Washington needs a new approach. By encouraging businesses and families to use efficient technologies, policymakers can take advantage of the approach that has worked in other states. Individuals and businesses know what opportunities exist to reduce their energy use and do more with less. Trying to fit all of those disparate individuals into a cookie-cutter policy is doomed to fail.

A New Technology-Based Approach

Washington state should play to its economic strengths and take advantage of the progress already made on cutting carbon emissions. The legislature should take three steps to improve our energy efficiency and reduce carbon emissions.

First, eliminate costly and ineffective carbon regulations and programs. Washington spent millions of tax dollars to implement the Governor's climate change executive order, but the centerpiece of that

effort, a regional cap-and-trade system, is dead. The one element of the effort that will be achieved, shutting down the Centralia coal plant, will not be achieved for a decade and a half.

Eliminating these unnecessary expenditures and repealing failed carbon regulations would allow agencies to save money and reduce the negative impact of those regulations on businesses trying to survive in a down economy.

Second, put an appropriate price on carbon. Businesses and consumers have repeatedly demonstrated they respond to price signals and improve energy efficiency. With Washington's already low-carbon energy supply, the impact on energy costs will be low.

A price on carbon, however, more effectively encourages a reduction in transportation emissions. Some people have called for extreme carbon prices of $100 per metric ton, which would amount to a $1 per gallon gas-price increase. A more reasonable approach is about $10 per ton to start. That level would amount to about 10 cents per gallon gas-price increase, much less than the normal market swings in gas prices.

Finally, the proposal must be revenue-neutral to reduce costs to businesses and provide an incentive for innovation. A combination of tax cuts for capital investment and Business and Occupation tax cuts would allow businesses to invest in more energy-efficient equipment. These cuts are proven job creators, encouraging businesses to expand and innovate.

Two additional arguments should be addressed.

Some have argued the state should keep some of the revenue from the carbon tax to spend on "green" projects chosen by politicians. Such projects, however, rarely turn out well. Numerous such projects, from biofuel subsidies to funding for failed projects like Solyndra, consistently demonstrate that projects are chosen not for their impact on the environment but for their impact on the voters. Increasing taxes to spend on such eco-fad projects would be doubly wasteful.

Other people cast doubt on whether we should even cut carbon emissions. We agree with scientists like Pat Michaels of the CATO Institute and the University of Washington Climate Impacts Group that the level of atmospheric carbon from all sources does increase the heat in

the atmosphere. What is less clear is how much of an impact humans are having and what the temperature impact will be.

A recent study from Oregon State University, published in the journal *Science*, found "the rate of global warming from doubling of atmospheric carbon dioxide may be less than the most dire estimates of some previous studies."[14] Until our ability to predict the impact of atmospheric carbon is better understood, Washington state should follow a no-regrets policy that promotes energy efficiency and reduces regulation and taxes.

If, indeed, climate change is serious, Washington can adjust the price of carbon accordingly. If, however, it is not, we will still receive the benefit of reducing regulation, cutting business taxes, encouraging innovation and reducing our dependence on imported oil from countries like Russia, Venezuela and Iran. These are all worthy goals that would provide ancillary benefits from our approach.

Further, given the understandable tax sensitivity in Washington state, such an approach is more likely to pass political muster. Previous efforts to just raise energy taxes without cutting regulations and business taxes were predictably unpopular. A revenue-neutral approach that cuts taxes while giving families and businesses the opportunity to avoid carbon taxes through efficiency has so far not been offered in Washington state.

A Sustainable and Responsible Policy

It is time to take an approach that is not contingent on continued taxpayer funding or the ability of politicians to make the right technology bets. Harnessing the creativity of every family and business by encouraging them to find methods—methods that only they know—to become more efficient in ways that suit their lifestyle will yield better results than relying on cookie-cutter approaches.

A revenue-neutral carbon price can create an effective strategy that puts us on the path to improving energy efficiency with a fresh start on climate policy.

Recommendations

1. **Eliminate costly and ineffective carbon regulations and programs.** Washington spent millions of tax dollars to implement the Governor's climate change executive order, but the centerpiece of that effort, a regional cap-and-trade system, is dead. Eliminating these unnecessary expenditures and repealing failed carbon regulations would allow agencies to save money and reduce the negative impact of those regulations on businesses seeking to survive in a down economy.

2. **Put an appropriate price on carbon emissions.** Businesses and consumers have repeatedly demonstrated they respond to price signals and improve energy efficiency. With Washington's already low-carbon energy supply, the impact of placing a price on carbon emissions on energy costs would be low. A reasonable approach is about $10 per ton to start. That level would amount to about 10 cents-a-gallon gas-price increase, much less than the normal market swings in gas prices.

3. **A price on carbon emissions must be revenue-neutral to reduce the cost to businesses and provide an incentive for innovation.** Putting a price on carbon emissions must be balanced by a combination of tax cuts for capital investment and Business and Occupation tax cuts that allow businesses to invest in more energy-efficient equipment. These tax cuts are proven job creators, encouraging businesses to expand and innovate.

4. Puget Sound Partnership

Recommendations

1. Develop goals for the cleanup of Puget Sound based on a scientific and transparent process.

2. The Puget Sound Partnership should provide a clear list of recovery projects based on environmental, not political, priorities to guide agency actions and funding decisions.

Background

The Puget Sound Partnership was created in 2007. It is charged by the Governor and legislature to create a plan to restore and protect Puget Sound. Since at least 1996, several state agencies, including the Puget Sound Action Team, have tried to prioritize environmental projects essential to Puget Sound's health.

Along with establishing the administrative functions and structure of the partnership, lawmakers required the newly formed state agency to develop a recovery plan in the form of an Action Agenda. The agenda is supposed to coordinate the efforts and funding of several federal, state and local agencies by setting clear direction for protection and cleanup work. The stated goal of the Partnership is to restore the Puget Sound to a healthy state by 2020.

In late 2008, the partnership, after months of meetings held around the Puget Sound region, created its first Action Agenda. The agenda was based on five priority strategies that each contain near- and long-term action items. The priority strategies include protecting, restoring and preventing water pollution at its source, and building, implementing and monitoring an accountability management system.

Since the completion of its first Action Agenda, the partnership has undertaken several other activities, including establishing a science review panel to guide the information used to establish recovery benchmarks and cleanup targets for Puget Sound. Currently the

partnership is working on the next version of the Action Agenda, which is due to be completed in early 2012.

Policy Analysis

The success of the partnership in its early years has been limited to just a few of the projects listed in the current Action Agenda, such as the restoration of the Nisqually Delta. The project involved removing a number of dikes and allowing several miles of habitat to return to its natural condition. There have been, however, several setbacks in the partnership's Agenda efforts.

Science Review

For instance, a critical review from an independent research firm found significant errors in the Department of Ecology's estimates of pollutants entering Puget Sound as a result of storm water runoff.[15] In December 2009, Ecology officials released a memorandum admitting the errors. They said their storm water report:

> Was fundamentally flawed in assuming a much higher average annual hydrologic yield from land uses and watersheds with more impervious area. In general, the improved hydrologic analysis method resulted in absolute toxic chemical loading estimates that are approximately 3 times lower than the loading estimates provided in the phase 2 study.[16]

Subsequently, the partnership has released a third report on toxic pollution in Puget Sound. According to this latest report, "Phase 3: Targeting Priority Toxic Sources," officials reduced their estimate of the total amount of toxic pollution entering Puget Sound by nearly 71%, compared to what they said the Phase 2 report.

The errors in the science report about toxics in Puget Sound were not found until after the partnership had used the flawed report to set the 2008 Action Agenda. This failure is not surprising because officials did not establish the Science Review Panel until after they had finished drafting the 2008 Agenda.

Unfortunately, during the establishment of ecosystem recovery targets used to guide the 2012 Action Agenda, the partnership pursued

simultaneous reviews of the ecosystem recovery targets through a public and scientific review process. The review processes for the ecosystem targets, however, did not allow the public to review the work of the science panel. Instead, the panel and public reviews followed separate tracks, with no clear connection between them.

By not allowing the public to see the work of the science panel, recommendations that were forwarded to the leadership council from public workshops did not include any review based on a clear scientific understanding.

Prioritize Funding

In addition to problems with the scientific review process, the partnership has struggled to take effective action to protect Puget Sound by directing funding to the highest valued actions. This point was highlighted in the partnership's "2009 State of the Sound" report, which shows lawmakers are not following the agenda's priority strategies for funding purposes. According to the partnership, "There are still significant gaps in funding .... On the other hand, some threats received amounts larger than identified in the Action Agenda ...."[17]

The inability to prioritize funding was also the focus of a recent audit of the Partnership completed in September 2011 by the Joint Legislative Audit and Review Committee (JLARC).[18] Among other things, the JLARC audit noted:

> The 2008 Action Agenda does not provide a clear prioritization for actions that reach across Puget Sound .... OFM and legislative fiscal staff report there is no easy way to translate many of the near-term actions into specific budget line items and that no single list of prioritized actions exists to inform funding decisions.[19]

The lack of a clear list of priority projects ensures that funding gaps will continue to exist. Policymakers created the partnership, in part, to provide a strong governance structure that would identify funding priorities, but the agency is failing to carry out this essential function.

Recommendations

1. **Develop goals for the cleanup of Puget Sound based on a scientific and transparent process.** The partnership should establish a linear process that allows the scientific review process to be completed prior to adopting recommended policies. This process should also provide more time for stakeholder review and a transparent public process.

2. **The Puget Sound Partnership should provide a clear list of recovery projects based on environmental, not political, priorities to guide agency actions and funding decisions.** This can be accomplished by using a Priorities of Government (POG). The POG system would require that the Partnership create a specific list of activities, including the costs to complete each activity, prioritized based on the needs of Puget Sound restoration and protection. This prioritized list then could be used by policymakers to guide their funding decisions.

5. The Growth Management Act and the Shoreline Management Act

Recommendation

Conduct a comprehensive review of the Growth Management Act to guide the legislature in passing improvements and updates to the act.

Background

In 1990, the legislature enacted the Growth Management Act (GMA), imposing new regulations on construction in the state of Washington. Under the rules of the GMA, the state would shift from centralized planning to a decentralized planning process, giving more control to local policymakers to set goals for growth. The stated purpose of the act was to provide greater coordination of development to sustain economic growth while protecting the overall environment.

This new "bottom up" approach to growth identified 13 policy goals to be considered by local governments during their planning process. The original goals were defined as: provide for needed urban growth; reduce sprawl; transportation; housing; economic development; property rights; permits; natural resource industries; open space and recreation; environment; citizen participation; public facilities and services and historic preservation. When the GMA was adopted, the legislature made it clear that these policy goals were to be treated equally, with no specific goal seen as more important than the others.

Over the last 20 years, the GMA has undergone many significant modifications that have shifted it away from the original purpose of the act. Since 1995, the Department of Commerce, Washington state's lead agency enforcing GMA rules, has tracked the number of amendments made to the act. During that time, more than 110 amendments have been adopted.

These amendments range from substantive to technical in their nature and scope. Such changes have included the creation of GMA Hearing Boards and the inclusion of the state's Shoreline Management

Act as a new goal, as well as modifications to a range of compliance dates and review processes.

Policy Analysis

Does the Growth Management Act Work?

Since the enactment of the GMA, there have been more than one hundred studies and reviews of its effectiveness. The most comprehensive review of GMA comes from the Washington State Land Use Study Commission and was authored in 1998.[20] The purpose of the study commission was:

> Integrating Washington's land use and environmental laws into a single, manageable statute. In working towards this goal, the Commission was directed by the Legislature to review the effectiveness of existing land use and environmental laws and to identify revisions in those laws needed to adequately plan for growth and to achieve economically and environmentally sustainable development.[21]

Unfortunately, this report is outdated and provides no insight into the more than ten years of growth and planning that have occurred since its publication. Since 1998, there have been other summaries and studies, but most of these reviews measure only portions of the overall goals of the act; they do not take a full-review approach.

In addition, amendments and modifications to the GMA may have changed the value and effectiveness of the original goals, but the lack of a comprehensive analysis makes it difficult to measure accurately the impact of each change in the law.

Cost-Benefit Analysis

Despite the impressive list of studies and reviews, none of them assesses the economic impacts, environmental successes or progress toward the policy goals of the act. In fact, there is little consensus between business and environmental interests regarding the successes and failures of the GMA.

In December 2008, the Department of Commerce released its report entitled "Planning for Climate Change – Addressing Climate Change through Comprehensive Planning under the Growth Management Act." The purpose of this report was to fulfill a directive from 2008 legislation, which required Commerce officials to make recommendations for amending the GMA to give local governments authority to cite global climate change as a reason for imposing new land use rules and transportation planning.

The recommendations coming from the 2008 Commerce report largely focus on amending the goals of the GMA to include greenhouse gas emission reductions. Other recommendations include changes to county-wide planning to require consideration of global climate change, as well as updates to the State Environmental Policy Act and transportation concurrency plans.

In response to the Commerce Department report, the legislature considered amending the GMA to include the reductions of greenhouse gas emissions as part the GMA's environmental goal. This legislation would have also required a new focus to force greater population densities in neighborhoods and try to require greater use of government-run transit services.

The cost of expanding the GMA is high but unknown. Commerce officials acknowledged in their 2008 report that they do not know what the costs of their recommendations will be. The report reads:

> While the impacts of climate change on affordable housing, employment, transportation costs, and economic development must be considered, there is little information or scientific data available related to the impacts of climate change policy.[22]

To impose the recommendations of the Commerce report before understanding the costs associated with these actions would have been irresponsible, and so far such a bill has not passed. Before the legislature considers any additional expansion of the GMA, lawmakers should consider the following three questions:

1. What are the true costs and benefits of the Growth Management Act?

2. How have Growth Management Hearing Board decisions changed the effectiveness and intent of the Growth Management Act?

3. How can a comprehensive and independent cost-benefit analysis be used to improve the effectiveness of the Growth Management Act?

To answer these questions, the legislature should conduct a full audit of the GMA. Without a complete analysis, there is no way lawmakers can ensure taxpayers are getting the protections and benefits they were promised when the GMA was enacted, or that its environmental goals are actually being achieved.

Recommendation

Conduct a comprehensive review of the Growth Management Act to guide the legislature in passing improvements and updates to the act. To ensure that a review is independent, comprehensive and effective, lawmakers should assign an independent party, like the State Auditor, to facilitate the review. The public should be allowed to participate, and the many goals of the GMA should be reviewed to see if they are being achieved.

6. Water Rights

Recommendation

1. Policymakers should provide more predictability in the state's water rights process by refunding processing fees to citizens when water use applications are delayed or stalled.

2. Policymakers should allow citizens to hire outside experts to help the state process their water rights applications.

3. Protect user fee revenues.

Background

The state Department of Ecology regulates water rights in our state. Ecology officials direct two types of regulations, those involving water quality and those involving water quantity. The department's Water Resource Program monitors the amount of fresh water in the state's lakes, streams and freshwater aquifers.

The mission of the Water Resource Program is to "support sustainable water resources management to meet the present and future water needs of the people and the natural environment, in partnership with Washington communities."[23] In other words, the program is charged with ensuring that fresh water will be adequately shared and protected for both current use and for future generations.

The Water Resource Program has ten different program activities, including clarifying and managing water rights; promoting compliance of water laws; assessing stream flows; regulating well construction; and supporting water use efficiency. Managers of the program are responsible for approving water application permits in Washington.

Water Resource Program managers have fallen behind in processing water use applications. Today there are more than 7,000 water applications waiting for action. The types of stalled water applications include:

- 1,200 transfers or changes to existing permits.
- 5,700 new applications.
- About 500 more applications filed each year.
- Most stalled applications (4,000) are 10 to 20 years old.
- Most water basins have 50 to 70 applications pending.
- A few areas, like Yakima with 900 and Whatcom with 700, have many more stalled applications.[24]

Applicants generally have three choices when submitting a permit application. These options include submitting a permit and waiting for your permit to be processed. Those wishing to receive an expedited review can either seek a water transfer by going through a County Conservancy Board, if one is available, or they can pay a fee for the Department of Ecology to review other applicants. Paying the fee increases the chances a permit will actually be acted on in a reasonable period of time.

Policy Analysis

Despite the abundance of water in the Pacific Northwest, there are many demands placed on the region's water resources. Population growth has put an increasing demand on water availability. In addition, Water Resource Program managers have identified other pressures that exist today. These include:

- Lack of water for economic growth, job creation and housing.
- Streams and rivers without sufficient water year-round for fish and wildlife.
- Groundwater levels sharply declining in many areas of the state.
- An outdated legal system, written to address the society of a different century.
- Unstable and insufficient funding for water management.[25]

The Department of Ecology's growing backlog of water applications can, in part, be attributed to the growing list of problems. In response, the legislature in 2010 passed SB 6267, requiring Ecology officials to "review current water resources functions and fee structures,

and report ... on improvements to make the program more self-sustaining and efficient."[26]

The emphasis of the SB 6267 law is on charging water applicants a user fee to process permits in a more timely manner. In fact, the report conducted by the department outlines policy ideas to promote a user fee system. Ecology notes:

> Relatively modest annual fees on water right permit holders, certificate holders and claimants could raise a large proportion of the revenue required for ongoing water resources management activities from which water right holders benefit. Such a fee could replace a large proportion of State General fund dollars currently appropriated for this work and could also support expanding some critical areas of work such as adjudications, scientifically based information gathering, and water supply and demand forecasting.[27]

It is obvious from the growing backlog of applicants that department officials need to change the way they process water right applications. A user fee policy, however, requires safeguards to make sure the money collected is used to fund promised services.

First, policymakers should require the user fees collected have a direct connection between the fee and the service the fee is meant to fund. Officials break trust with the public when they siphon off fee revenues to pay for some other program or to please a political interest group. Second, the amount of the fee charged to the public should be tied directly to the actual cost of the program it funds. Increasing fees beyond the actual cost of the program means agency officials are gouging the public—charging people more money than they actually need to fund a particular program.

An alternative approach to charging fees would be to allow water use applicants to hire outside reviewers and experts. Under this model, an applicant would bear the cost of paying a private-sector specialist to do the same work as state employees. Such a model has been used successfully to review land use applications, allowing agency staff to provide expedited review and better service to the public.

Finally, any new process, whether it involves a new user fee or allows water applicants to hire outside experts, should include time incentives to ensure citizens are no longer held in a seemingly endless holding pattern. Unlike permits, it would not be in the best interest of the public to automatically approve a water permit because an agency had failed to act. Instead, applicants should receive a refund of part or all of the fees they paid if state officials do not provide a timely answer. This would provide an incentive for the department to develop a culture of responsive, professional service.

Recommendations

1. **Policymakers should provide more predictability in the state's water rights process by refunding processing fees to citizens when water use applications are delayed or stalled.** The Department of Ecology should be encouraged to provide responsive, professional service by giving citizens a refund of processing fees if water use applications are not completed in a reasonable time. The purpose of charging citizens a fee is so that state agencies can provide fast and reliable service to the public. If the fee is not achieving this purpose it should be returned to the citizen who paid the application fee. Adopting a refund policy would provide an important incentive to Ecology officials to be responsive to the citizens they serve.

2. **Policymakers should allow citizens to hire outside experts to help the state process their water use applications.** Giving citizens the option of paying private-sector experts to help process an application would allow Department of Ecology officials to focus on oversight and protecting the public interest, rather spending time developing technical and engineering information about an application.

3. **Protect user fee revenues.** To keep trust with the public, the legislature should impose rules on the Department of Ecology to prevent fees collected from citizens to process water right applications from being siphoned off to fund other department programs, or from being placed in the General Fund.

7. Nuclear Energy

Recommendation

Include nuclear power as one part of achieving the public policy goal of creating clean and reliable energy sources.

Background

Recent efforts to reduce Washington's carbon emissions include the adoption of policies that limit the ways policymakers can prepare for future economic growth.

Instead of limiting their options, policymakers in Olympia should ensure that proven zero emissions baseload technologies, like nuclear power, are part of the state's strategy for clean energy generation.

In 2010, the legislature passed HB 2658, requiring the state Department of Commerce to develop a new energy policy. Lawmakers said the state must balance three main goals:

- Maintain competitive energy prices that are fair and reasonable for consumers and businesses and support the state's continued economic success.
- Increase competitiveness by fostering a clean energy economy and jobs through business and workforce development.
- Reduce greenhouse gas emissions.

Although the state's new energy policy is not complete, Commerce officials are proposing short-term initiatives "that can work together to fill gaps in existing policy, and encourage development of Washington's energy economy."[28] Unfortunately, the initiatives they are considering mainly favor unreliable and expensive renewable technologies, like wind and solar power, and fail to recognize the economic and environmental benefit of existing technologies.

Policy Analysis

In Washington state, citizens and businesses benefit from lower than average energy prices. According to the state Department of Commerce:

> Washington state energy expenditures as a percent of GSP tend to be lower than the corresponding U.S. GDP figures, primarily because our electricity prices are significantly below the national average: for 2006 Washington average of 6.14 cents/kWh vs. U.S. average of 8.90 cents/kWh.[29]

Approximately 81% of all electricity produced in Washington comes from reliable, carbon-free sources, including hydroelectric and nuclear generation. In fact, Seattle City Light, one of the largest public utilities in the country, receives nearly five percent of its energy from nuclear power, more than it receives from wind, solar and biomass sources combined.

Since Washingtonians already benefit from cheap, carbon-free energy, lawmakers need to explore all viable options for meeting the state's future energy needs. The Northwest Power and Conservation Council estimates the increase in energy demand in the Northwest will be about 1.4 percent per year through 2030.[30] Favoring unproven technologies over reliable clean energy sources like nuclear power will unnecessarily drive up costs for Washington's citizens and businesses.

While renewable wind and solar energy and conservation will play a role in fulfilling the increased demand for energy, it is unlikely these sources alone will be able to keep pace with the rate of growth.

Nuclear power is a baseload energy source, meaning it can easily meet the daily ebbs and flows of energy demand. In addition, nuclear power is less expensive than other energy sources. In its 2011 outlook for energy prices, the Energy Information Administration estimates the cost of nuclear energy will average about 11 cents per kWh in 2016, comparable to coal and wind, and half the cost of photovoltaic solar energy.[31]

Energy Northwest, the operator of the only operating nuclear facility in the Northwest, at Hanford, reports production costs of less

than four cents per kilowatt-hour in 2007.[32] Comparatively, the cost to produce a kilowatt-hour of solar power is 17 cents to 32 cents, depending on the source and use, and wind energy costs up to 15 cents per kilowatt-hour.[33] In addition, wind and solar power cannot be reliably produced 24 hours a day, so gas-fired plants must be built to fill in when wind and solar sources fail to produce enough power. In contrast, a nuclear plant requires no backup power source.

Clearly, nuclear power provides a more reliable energy source while maintaining a fair and reasonable price for consumers. This is consistent with the public policy goals lawmakers have laid out for the state.

Fostering a Clean Economy

In addition to providing a reliable energy source, nuclear power can help the state foster a clean-energy economy. Nuclear power provides an array of high-paying jobs, from construction to operation of plant facilities. The Nuclear Energy Institute notes:

> On average, a nuclear power plant creates 1,400–1,800 high-paying jobs during construction, with peak employment estimated as high as 2,400 jobs during that period, and yields 400–700 jobs during the operation of the plant. Additionally, the average nuclear plant generates approximately $430 million a year in total output for the local community and nearly $40 million per year in total labor income.[34]

By comparison, the Wild Horse wind project in Eastern Washington cost $480 million and created 400 construction jobs and 30 full-time positions. The site also provides about $12–$15 million in local spending, with an annual property tax of about $1.3 million.[35]

Additionally, Washington is already a recognized leader in nuclear research. The inclusion of nuclear power in the state's energy strategy would help the state build on the existing workforce and a long tradition of engineering expertise.

Reduce Greenhouse Gas Emissions

Finally, nuclear power helps reduce greenhouse gas emissions. Opponents of nuclear energy cite the risks from nuclear waste and material falling into the wrong hands. These problems can, however, be addressed, and if climate change represents the risk that some opponents of nuclear energy claim, these risks should be weighed against each other.

Washingtonians benefit from cleaner air and a healthier environment because our current sources of energy are almost entirely carbon-free energy sources, particularly in generating electricity.

Including nuclear power in future planning would help the state make significant steps toward reducing carbon-emitting energy sources and preventing additional sources of emissions. In fact, an analysis done for the U.S. Department of Energy finds, "Washington's nuclear power plant could supply 16% more electricity and avoid annual emissions of 1,500 tons of SO_2, 2,100 tons of NOx and 1.3 million metric tons of CO_2" through additional capital investments and upgrades.[36]

Recommendation

Include nuclear power as one part of achieving the public policy goal of creating clean and reliable energy sources. As part of reducing Washington's carbon emissions, the legislature should provide the full range of energy generation options. The approach currently proposed by state Department of Commerce officials imposes policies involuntarily on Washington's residents, rather than engaging their creativity, and focuses too narrowly on energy efficiencies and renewable energy sources.

8. Renewable Energy Mandate

Recommendation

Allow utilities to count clean hydroelectric power as a source of renewable energy.

Background

In 2006, Washington voters passed Initiative 937, the Energy Independence Act, requiring utilities in Washington to increase conservation and to get 15% of their power from qualifying renewable energy sources by the year 2020.

Specifically, the Initiative 937 law requires that a qualifying utility, any utility serving more than 25,000 or more customers, to "use eligible renewable resources or acquire equivalent renewable energy credits, or a combination of both. ..."[37] Additionally, utilities must meet the following annual power production requirements in order to meet the mandates required by Initiative 937:

- At least three percent of its power production must come from allowed renewable sources by January 1, 2012, and each year thereafter through December 31, 2015.
- At least nine percent of power must come from allowed renewable sources by January 1, 2016, and each year thereafter through December 31, 2019.
- At least 15% of its power must come from allowed renewable sources by January 1, 2020, and each year thereafter.[38]

The intent of Initiative 937, according to the initiative language, was to promote energy independence in the state of Washington by increasing conservation, using allowed renewable energy sources and reducing the use of carbon-emitting sources of energy. Initiative 937 promised that:

> Making the most of our plentiful local resources will stabilize electricity prices for Washington residents, provide economic benefits for Washington counties and farmers, create high-quality jobs in Washington, provide opportunities for training apprentice workers in the renewable energy field, protect clean air and water, and position Washington state as a national leader in clean energy technologies.[39]

In addition to imposing conservation and renewable energy requirements, Initiative 937 narrowly defined which energy sources count as renewable. Although the initiative recognizes water as a renewable resource, it limits the amount of hydroelectric power that utilities can count as renewable. The Initiative 937 law says:

> Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest or to hydroelectric generation in irrigation pipes and canals located in the Pacific Northwest, where the additional generation in either case does not result in new water diversions or impoundments.[40]

Policy Analysis

The Initiative 937 law has created a number of unintended consequences because utilities are forced to shift away from hydroelectric power generation to more expensive forms of renewable energies, like solar and wind power.

First, Washington is already a leader in clean, renewable hydroelectric power. Nearly 75% of electricity generated in the state comes from hydroelectric sources.

According to the U.S. Energy Information Administration, the average cost to generate a megawatt-hour with hydroelectricity is approximately $86. The cost to produce a megawatt-hour from renewable sources allowed by the Initiative 937 law is $211 to $312 for solar, and $92 to $243 for wind.[41] Initiative 937 requires Washington utilities to buy power from less efficient sources of energy, thus making consumers pay more to get the same amount of power.

Second, Initiative 937 will lead to a reduction in job opportunities. Increased energy costs for ratepayers decreases spending by consumers and businesses for other activities. Before Initiative 937 passed, the Washington Research Council analyzed the proposal and found that the renewable energy mandate would lead to job losses. The council wrote:

> Using the WRC-REMI model of the Washington state economy, we project that these four to eight percent higher electricity prices would cost the state 2,100 to 5,100 jobs in 2016 and 3,600 to 7,100 jobs in 2020. The model takes into account jobs that might be created in the energy industry, so there is no real economic upside to this higher spending on electricity. The spending standard simply reflects money wasted on less efficient electricity production.[42]

A more recent economic analysis of Colorado's renewable energy mandate, which requires utilities to use 30% renewable power by 2020, supports the 2006 job loss findings of the Washington Research Council. Using the State Tax Analysis Modeling Program, the Beacon Hill Institute found that:

> By 2020 the Colorado economy will shed 18,380 jobs, within a range of 6,043 and 29,242 jobs. The decrease in labor demand—as seen in the job losses—will cause gross wages to fall. In 2020 the 30 percent mandate will reduce annual wages by $1,269 per worker, with the low cost case producing a $417 wage drop and the high cost cast will reduce wages by $2,019 per worker.[43]

While Colorado's renewable energy mandate is more restrictive than the one imposed by Washington, the Institute's findings independently support the Washington Research Council's 2006 findings regarding job losses, because the institute's use of a different economic model reaches the same conclusion.

Third, blindly mandating certain renewable energy, like wind and solar, increases instability in energy markets and further increases costs for consumers. Many renewable energy sources are intermittent and unreliable and, at times when the wind does not blow or the sun does not shine, produce no energy at all. In contrast, a nuclear, natural gas or hydroelectric plant produces a steady and predictable flow of

electricity 24 hours a day. For this reason, state lawmakers require that each renewable energy plant be backed-up by a dependable natural gas or similar power plant to ensure customers do not experience power shortages.

Other consequences of the Energy Independence Act include higher electricity bills for the poor, less investment in emerging power technologies and less focus on improving energy efficiency.

Finally, Initiative 937's success at reducing carbon emissions is also limited. Washington utilities, like Seattle City Light, have found they need to replace energy from sources that are already carbon free, like hydroelectric and nuclear, which make up 95% of the energy supply in Seattle. Swapping existing clean energy sources with sources required by Initiative 937 does nothing to reduce the emission of greenhouse gasses.

Recommendation

Allow utilities to count clean hydroelectric power as a source of renewable energy. The definition of "renewable energy" under the Initiative 937 law should be broadened to include hydroelectric and other non-carbon sources, so that all renewable sources are equally recognized as helping the environment. Such a change would reduce costs for power customers and promote additional technologies that reduce carbon emissions.

9. Mandatory Drug Take-Back Programs

Recommendations

1. Avoid imposing a costly mandatory drug take-back program on Washington citizens and businesses.

2. Encourage the disposal of unwanted medicines in a way that is simple and effective.

3. Conduct additional research to determine the source of trace drug elements in the environment.

Background

Legislative proposals to require collection of unused pharmaceuticals claim that such mandates are needed to protect ground water quality, stating, "disposing of medicines by flushing them down the toilet or placing them in the garbage can lead to the contamination of groundwater and other bodies of water, contributing to long-term harm to the environment and to animal life."[44] There is no firm evidence, however, that this is an accurate description of how pharmaceutical elements end up in ground water.

There is little doubt that very small trace amounts of natural and synthetic drugs are showing up in waterways in some parts of the country. For instance, a stream study by the U.S. Geological Survey (USGS) states, "results show that a broad range of chemicals found in residential, industrial, and agricultural wastewaters commonly occurs in mixtures at low concentrations in streams in the United States."[45]

The amounts USGS scientists detected are exceedingly small. The trace amounts are expressed in parts per trillion—one unit of a trace element present in one trillion units of water. For example, caffeine is one of the more common elements found in the USGS study. On average, researchers detected levels of caffeine in natural streams at up to 25 parts per trillion. At this level, a person would have to drink over 2,000 years worth of stream water at an intake of two to three liters per day to ingest the same amount of caffeine present in one cup of coffee.[46]

Some lawmakers have proposed trying to reduce even the tiny amount of trace elements that occur in waterways by requiring a mandatory drug take-back program. The primary flaw in this approach is that scientists do not know whether unused or discarded drugs are actually the source of the trace elements in the first place. So far, reliable studies have only measured the presence of trace elements, with no attempt at determining their source.

In addition, there is no evidence the presence of part-per-trillion levels of trace elements poses a threat to human health and safety or to wildlife. Federal research has found no effect on human health from trace elements in the environment. The EPA points out that:

> More research is needed to determine the extent of ecological harm and any role it [the presence of drug elements] may have in potential human health effects. To date, scientists have found no evidence of adverse human health effects from Pharmaceuticals and Personal Care Products as Pollutants in the environment.[47]

These finding show that imposing a new mandate would increase costs for citizens, without any indication it would actually help the environment.

Policy Analysis

Independent research clearly documents that drug take-back laws increase the cost of medicines for businesses and patients, while providing no benefit to the environment. Before lawmakers force producers to implement a drug take-back program, they should consider the following key findings:

1. Mandatory take-back programs are not shown to reduce the presence of drugs in the environment.

2. Municipal wastewater treatment is more effective at removing trace elements from the environment.

3. Sending unwanted drugs to protected landfills keeps them out of groundwater and the environment.

To date, none of the scientific research shows that mandatory take-back programs reduce the small amount of drugs in the environment. This, in part, is because the drugs being found in the environment come from human and animal excretion after the use of drugs, not from disposal of unwanted medicines. The FDA reports:

> The main way drug residues enter water systems is by people taking medications and then naturally passing them though their bodies, says Raanan Bloom, Ph.D., an environmental assessment expert in FDA's Center for Drug Evaluation and Research. "Most drugs are not completely absorbed or metabolized by the body, and enter the environment after passing through waste water treatment plants."[48]

A study by the Department of Ecology and the U.S. Environmental Protection Agency reports on the benefits of advanced wastewater treatment technologies in removing the trace elements of pharmaceuticals and personal care products from the environment. The study found that:

> Results of this screening indicate that the combination of enhanced biological nutrient removal and filtration processes provides the greatest PPCP [Pharmaceuticals and Personal Care Products] removal.[49]

Compared to effective wastewater treatment, mandatory take-back programs do almost nothing for the environment, but they do increase the cost of medicine for patients.

The U.S. Environmental Protection Agency and the Office of National Drug Control Policy have issued clear directives for the effective disposal of unused or unwanted drugs. The federal rules "are designed to reduce the diversion of prescription drugs, while also protecting the environment."[50] These standards call for the disposal of unused or unwanted drugs by placing them in protected landfills, not flushing them into the sewer system.

The focus of these new guidelines is educating the consumer on proper and safe methods of disposal. These include removing drugs from original containers and mixing them with undesirable substances, like

coffee grounds, and sealing them in an impermeable container before throwing the unused drugs in the trash.

Rather than imposing ineffective mandates, lawmakers should encourage more research so scientists can pinpoint the cause of the pharmaceuticals appearing in the environment. This research should be directed at answering the following questions:

- What is the cause and source of these trace elements?
- What impact, if any, do these trace elements have?
- What amounts of drugs go unused or unwanted?
- What are the costs and benefits of diverting resources to mandatory drug take-back programs compared to providing appropriate funding to proven solutions?

By not over-reaching, policymakers will be able to fulfill other obligations that have greater and a more immediate impact on the environment. Thinking passage of mandatory drug take-back legislation will help the environment ignores the scientific findings related to the disposal of drugs in the environment. Even with maximum enforcement, a state drug take-back mandate would do little to protect the environment if the true source of trace elements in groundwater lies somewhere else. In addition, trying to reduce the very minimal impact of unused drugs on the environment shows a failure by lawmakers to prioritize more serious threats to the environment

Recommendations

1. **Avoid imposing a costly mandatory drug take-back program on Washington citizens and businesses.** There is little evidence drug take-back mandates reduce the presence of trace elements in the environment, because current research has not identified the source of these elements, but mandates do increase the cost of medicines for Washington citizens.

2. **Encourage the disposal of unwanted medicines in a way that is simple and effective.** Managed landfills are designed to protect

groundwater from all forms of pollution that could come from municipal waste. Disposal of expired or unwanted medicines in the managed trash stream, rather than into the sewer system, would ensure that traces of drug elements do not find their way into the groundwater.

3. **Encourage additional research to determine the source of trace drug elements in the environment.** Before imposing new laws, lawmakers need more information about how very small levels of drug elements get into groundwater in the first place. Once the source has been identified, new regulations can be developed as needed to reduce or eliminate it.

Additional Resources from Washington Policy Center, Available at washingtonpolicy.org

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Endnotes

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