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POLICY BRIEF

A Guide to Initiative 937

Washington Energy Quotas

by
Todd Myers
Director, Center for Environmental Policy

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Executive Summary

In an effort to reduce environmental impact and diversify energy supply, Initiative 937 would require Washington to meet a 15% quota of renewable energy sources by 2020. This study examines the key elements of Initiative 937 and assesses the impact it would likely have in Washington.

According to our research, Initiative 937 would likely lead to a variety of results and unintended consequences.

First, we find that costs for energy would likely increase, and the burden of higher cost wind and solar power would be shifted from the wealthy onto those less able to afford the higher costs. Even with the cap on inflation included in Initiative 937, energy costs could increase by 75 percent above inflation by 2020. The initiative would also essentially eliminate voluntary green energy programs that tend to shift these higher costs on those who could most afford them.

These increased costs also mean that the Initiative will cost jobs. Initiative 937 requires Washington utilities to invest in less efficient sources of energy, thus making consumers pay more for the same amount of energy, eliminating investment in other parts of the economy and reducing job opportunities.

Second, wind power is likely to make up the significant majority of the 15 percent quota. Most hydro power is not counted toward the 15% target and strict limits are placed on other renewable sources of energy like biomass. Over reliance on wind power might actually increase instability because wind must be backed up by natural gas and other reliable sources of energy. This problem was demonstrated dramatically during a recent heat wave in California where wind farms produced one-sixth of their typical level at a time when overall energy demand increased.

Finally, the initiative's success at reducing carbon emissions will also be limited. Washington utilities, like Seattle City Light, will find that they need to replace energy from carbon-free sources like hydro and nuclear, which make up 95% of the energy supply in Seattle. Swapping hydro for wind adds nothing to efforts to reduce greenhouse gasses.

When examining Initiative 937, voters should make sure the values, costs and strategies included in the Initiative are the best way to increase the energy diversity and the supply of renewable power.

1. Introduction

During the past few years, energy policy has been at the center of some of the most contested issues facing the United States. For conservatives, energy independence is an important part of improving national security by limiting the influence of hostile governments like Iran and Venezuela. For liberals, alternative sources of energy are a critical part of reducing greenhouse gasses and addressing climate change.

It is no surprise then that some states have looked at, and passed laws, requiring utilities to increase the amount of energy they purchase and generate from "green" energy sources like wind and solar power. Initiative 937, supported by a group of environmental activist organizations, would impose new restrictions on Washington's utilities in an effort to reach targets of specifically selected energy types. Using a series of incremental steps, Initiative 937 would require that 15 percent of Washington's energy meet their definition of "renewable" by 2020.

This study examines the key elements of Initiative 937 and how it would likely be implemented in Washington should voters pass it this November. The study asks some key questions. Will this initiative meet its goals? Is this the best way to meet those goals? Are the costs and other unintended consequences justifiable?

According to our research, Initiative 937 would likely lead to a variety of results and unintended consequences. Key among these:

- Costs for energy are likely to increase, and the burden of higher cost wind and solar power would actually be shifted from the wealthy onto those less able to afford the higher costs.

- While the initiative highlights a number of potential alternative sources of energy, wind power is likely to be the only significant source of energy available to meet the 15% legal quota.

- The initiative is likely to do little to reduce carbon emissions, since new power sources are likely to simply displace hydro and nuclear power, which already produce zero carbon emissions.

People who feel that diversifying our energy resources is worth a potentially high cost to reduce carbon emissions may decide that Initiative 937 is worth supporting. Others who are believe that there are better, and less expensive, ways to promote energy independence and reduce carbon emissions will likely see Initiative 937 as an impractical regulatory system designed to meet an ephemeral goal.

2. What Counts As "Renewable"

The key to understanding Initiative 937 are the definitions that outline what counts as an "eligible renewable resource" and what is left out. Only those energy sources included in this definition can be used to meet the legal quotas outlined in the Initiative.

Three definitions deserve special attention.

The Initiative defines a "renewable resource" as "(a) Water; (b) wind; (c) solar energy; (d) geothermal energy; (e) landfill gas; (f) wave, ocean, or tidal power; (g) gas from sewage treatment facilities; (h) biodiesel fuel as defined in RCW 82.29A.135 that is not derived from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after the effective date of this section; and (i) biomass energy based on animal waste or solid organic fuels from wood, forest, or field residues, or dedicated energy crops."[1] The definition goes on to exempt some specific sources, including treated wood chips, municipal waste, black liquor from pulp mills and other sources, and old growth forests.

While this definition includes water, the second definition, "eligible renewable resource," does not include hydroelectric projects of any significant scale. The definition has two parts. First, it restricts eligible power to any plant "that commences operation after March 31, 1999."[2] By limiting the date to March 31, 1999, it eliminates virtually all, if not all, biomass generation plants currently in place across Washington state.

Lumber mills across the state use wood byproducts to generate power for local communities and the mill. During the energy crisis of 2001, Governor Locke actively encouraged the expansion of these "biomass" generation plants. Biomass is included as a renewable resource because it can be re-grown and reduces the emission of greenhouse gasses. Many argue that while burning wood emits carbon, that carbon is recaptured during the life-cycle of forests, which absorb the carbon. Over the course of the life-cycle, the net carbon emissions of biomass generation is zero.[3] If mandates reduce the use of biomass, it risks reducing on a cheap and available source of renewable energy.

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[1] Initiative 937, http://www.secstate.wa.gov/elections/initiatives/text/I937.pdf (Accessed October 10, 2006), p 3-4

[2] Ibid. p 2

[3] For more about the benefits of biomass see Clallam Net Works, "Fact Sheet – The Benefits of Biomass Energy Production," http://www.ruraltech.org/video/2006/bioenergy_forum/PDFs/Factsheet_03.pdf (Accessed October 10, 2006)

The second part of the definition restricts eligible hydroelectric power to projects that "do not result in new water diversions or impoundments."[4] This excludes virtually all of the current hydroelectric energy plants, and any future hydro project of any significance.

Currently hydroelectric power represents the vast majority of electric generation in Washington state, approximately 70% in 2004[5]. In Seattle, hydro provides approximately 90 percent of the energy supply. Nuclear, coal and other non-eligible sources make up much of the rest. If voters pass Initiative 937, Seattle would have to shift away from hydro toward other sources of energy.

Another current source of available renewable energy is the black liquor that is a byproduct of paper production at pulp mills in Washington. Black liquor, made from the sugars in plants, is currently used to generate energy. Biodiesel and biomass both rely on the sugars from plants to produce energy. It is unclear, however, why black liquor is exempted. Currently, black liquor energy is inexpensive and it is cheaper to use it for energy production than dispose of it. Again, however, Initiative 937 would put pressure on this existing and non-eligible source of energy.

In each of these cases, Initiative 937's energy quotas would put pressure on local utility districts to eliminate energy from some of these proven low cost, renewable energy sources and replace them with higher cost, questionable energy technologies. As a result, wind power is the only feasible resource to meet the quotas, required by Initiative 937.

The most recent statistics, from 2002, indicate that wind is the second largest "renewable" energy source in Washington. The only larger source listed by the federal Energy Information Administration (EIA) is wood and wood waste,[6] much of which would not qualify in meeting Initiative 937's energy quotas. Projections also show that wind power is the most likely future source of alternative energy. The EIA reported that as of 2002, there were no solar electricity plants in Washington.

By narrowing the list of allowable, and feasible, green energy options, the Initiative is more likely to create a bottleneck of demand and projects in the future. This bottleneck increases the chance of creating a number of unintended consequences.

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[4] Ibid, p 3

[5] Energy Information Administration, "Net Generation by State by Type of Producer by Energy Source," http://www.eia.doe.gov/cneaf/electricity/epa/generation_state.xls (Accessed October 12, 2006)

[6] Energy Information Administration, "Table 15. Renewable Electric Power Sector Net Generation by Energy Source and State, 2002," http://www.eia.doe.gov/cneaf/solar.renewables/page/trends/table_15.xls (Accessed, October 11, 2006)

3. Can it Be "Cost Effective"?

Writers of the initiative understand that the energy quotas they advocate will increase the cost of energy to consumers. One way they attempt to address this concern is to require that new alternative energy sources be "cost effective." The definition, however, seems odd or even meaningless in context of the restrictive limitations in the definition of "eligible renewable resources."

For the definition, the Initiative turns to RCW 80.52.030, which says that cost effective must be "reliable and available within the time it is needed," and "estimated incremental system cost no greater than that of the least-cost similarly reliable and available alternative project or resource."[7] This definition seems difficult to apply given the limited characteristics of wind power.

Wind power cannot reasonably be "available within the time it is needed," given intermittent wind patterns. For example, the author of a study of wind power generation during a recent California heat wave notes that there is "remaining controversy about its availability 24/7"[8] and found that "during this period of peak demand, statewide wind often operated at only five percent of capacity, or less."[9] At the very time when increased energy production was needed, wind farms were operating at a mere fraction of their capacity and significantly less than the standard wind production level of about 30%. It is unclear how wind power could be assumed to meet the standard set out in the definition. If the definition is to be followed, it would seem to indicate that energy producers would not only have to have wind capacity, but also back that capacity up with energy sources that are truly reliable.

4. Meeting the Goals of the Initiative

Much is made of Initiative 937's mechanism (i.e. the energy quotas), but the Initiative also lays out the various goals it is intended to achieve. This allows voters to determine if the policy is suitable to the goals.

The first two sections of the Initiative lay out these goals.

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[7] State of Washington, "RCW 80.52.030 – Definitions," http://apps.leg.wa.gov/RCW/default.aspx?cite=80.52.030 (Accessed October 11, 2006)
[8] David Dixon, "Wind Generation's Performance during the July 2006 California Heat Storm," Energy Pulse, September 8, 2006
[9] Ibid.

Section 1 simply sets out the targets, calling for "large utilities to obtain fifteen percent of their electricity from new renewable resources such as solar and wind by 2020 and undertake cost-effective energy conservation."[10]

The next section lays out the goals that underlie the general policy set out in Section 1. A number of goals are highlighted.

First, Section 2 argues that requiring wind and other alternative energy sources "builds on the strong foundation of low-cost renewable hydroelectric generation in Washington state and will promote energy independence in the state."[11] This is interesting because the statement refers to hydroelectric power, which supplies more than 70 percent of Washington's energy, as "renewable." As noted, the initiative exempts hydroelectric power from the allowed renewable resources required to meet its own 15 percent targets. This section also notes that hydroelectric, unlike other renewable alternatives, is inexpensive. This will be important when estimating the cost of the Initiative.

5. Will Prices Be More or Less Stable?

Next, the section argues that energy quotas will "stabilize electricity prices for Washington residents."[12] Actually, Initiative 937 would likely add volatility to Washington's energy market for a number of reasons. Since wind power needs to be backed up, or "firmed," by energy sources that can be immediately switched on and off, like gas-fired plants, it is reliant on those carbon emitting sources. When wind power fails to meet demand, as demonstrated in California, utilities must turn to other sources like gas, coal or nuclear. The need to turn to other energy sources may actually increase price volatility.

WashPIRG, one of the sponsors of Initiative 937, argues melodramatically that "increased reliance on natural gas will put us at risk of Enron-style price spikes."[13] Yet, because wind power is unreliable, natural gas and other sources would be called upon during times of high consumer demand to fill in for wind power. In that scenario, wind power supply would fall at a time when energy demand was increasing, causing significant pressure on prices of reliable energy sources like natural gas, leading to, ironically, price spikes. WashPIRG and other initiative supporters could find themselves hoist by their own petard.

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[10] Ibid, p 1
[11] Ibid.
[12] Ibid.
[13] WashPIRG, "Clean Energy Future," http://washpirg.org/WA.asp?id2=23650 (Accessed October 10, 2006)

Another challenge acknowledged by supporters of wind power is that the federal subsidies for wind power construction are set to expire in 2007. While many believe that the subsidies will be renewed, investment is stalled until the government renews them. This makes long term planning for wind farms more difficult. It also makes the cost of wind power hard to pin down since construction costs make up such a significant percentage of the cost of wind power production.

In theory, diversification of supply should lead to greater energy stability. Initiative 937, however, dramatically narrows the list of alternatives and actually shifts energy production away from consistent, predictable sources, like hydro, to intermittent and unstable sources, potentially increasing instability.

6. Job Creation

Initiative 937 states that one of its goals is to "create high-quality jobs in Washington."[14] Supporters of the Initiative argue that it will create jobs by forcing utilities to invest in new energy projects like wind farms. The money spent creating these projects would require jobs and provide others with jobs to manage these plants. Supporters argue "Local energy efficiency and renewable energy projects will create thousands of new jobs in engineering, construction, and building design."[15] The reality is, however, that jobs are not created with this type of forced investment.

This system may actually create a net increase in jobs in the energy sector, but those jobs will be low, not high, quality jobs. The reason is simple. By forcing utilities to spend money on relatively inefficient sources of energy, they reduce productivity and increase the number of jobs per kilowatt hour ultimately produced. This is something akin to banning tractors and requiring plows to be used to till fields. The number of jobs at a farm might increase, as the need for labor would be increased, but the type of jobs would be poor and the cost to consumers of agricultural products would be increased.

Reducing efficiency may create the veneer of job growth, but it really just shifts jobs around in an inefficient way. Examined over the entire economy, it is likely that this inefficient use of capital will cost jobs. According to the Washington Research Council, the higher energy costs associated with Initiative 937 "would cost the state 2,100 to 5,100 jobs in 2016 and 3,600 to 7,100 jobs in 2020."[16]

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[14] Initiative 937, p 1

[15] Yes! On I-937, http://www.yeson937.org/content.jsp?content_KEY=1976 (Accessed October 12, 2006)

[16] Washington Research Council, "Initiative 937: Tilting Towards Windmills," August 29, 2006, http://researchcouncil.blogs.com/weblog/files/i_937_brief.pdf (Accessed October 10, 2006) p 6

The Initiative also has clauses to give preference to union jobs and actually requires a certain number of apprentice jobs. Projects that use a minimum number of apprenticeship hours during construction "may count that acquisition at one and two-tenths times its base value."[17] This is one reason some unions are supporting the Initiative. Once again, however, this is likely to add unnecessary costs. The very fact that the Initiative writers provide an incentive to use a certain number of apprentice hours indicates that they understand that this is likely to drive costs up.

7. Transferring Costs from Rich to Poor

One of the most ironic outcomes of Initiative 937 would be that the cost of renewable energy would be shifted away from those most able to afford it toward those who are least able to afford it. This occurs in two ways.

In an effort to control costs, Initiative 937 puts a cap on annual incremental costs needed to meet the energy quotas. The quotas for any given year are considered met "if the utility invested four percent of its total annual retail revenue requirement on the incremental costs of eligible renewable resources."[18] This four percent is the difference between the cost of the eligible renewable sources and a reasonable alternative and is counted in addition to inflation. Using the four percent target alone, the potential price increase to utilities, and therefore consumers, by 2020 could be nearly 75 percent. Using any reasonable rate of inflation on top of that, it is likely that energy costs will double by 2020 if Initiative 937 is passed.

Improvements in technology may reduce the gap between wind and other renewable and alternatives over time. Utilities would, however, have to catch up in later years for ground lost in early years when they were unable to meet the energy quotas. This would lead to continuous four percent increases even if the actual gap is less than that. Further, technology is likely to improve in wind or solar power, but not in gas or other types of energy production. The return on investment in these areas is likely to be less than new alternatives, but alternative energy technology would still be chasing a moving target.

Finally, the number of suitable locations for wind power is fixed, so as available locations become scarce and the demand created by the Initiative increases, the price of siting new wind power generators is likely to go up.

These costs will not, however, be allocated to customers based on ability to pay. Instead they will be shared by all utility customers, rich and poor. The energy crisis of 2001 made clear that severe price fluctuations, or steady increases, in energy rates hit the poor hardest, because there is a basic level of energy that everyone needs. Meeting that

[17] Ibid. p 6
[18] Ibid. p 7

basic demand is a challenge for low income families even without price increases. Thus, increases in energy usage will consume a greater portion of the income of poor families than the rich. Initiative 937 would essentially impose a rigid system of increasing and regressive taxation.

Initiative 937 not only increases costs on the poor, it actually eliminates the opportunity for those most able to afford higher prices to provide subsidies that help meet the energy quotas. The Initiative says utilities cannot count "Eligible renewable resources or renewable energy credits obtained for and used in an optional pricing program such as the program established in RCW 19.29A.090."[19]

The referenced RCW requires all utilities to offer voluntary green energy programs, allowing customers to voluntarily pay extra for "green" sources of energy like wind and solar. Currently, these programs represent about one to two percent of the customer base of major utilities like Puget Sound Energy.

According to some estimates, the base of willing customers for these programs is as high as six percent. Utilities have not maximized these programs, however, because they are not allowed to make additional profit on them. Without an incentive to promote such programs, utilities have not marketed the efforts extensively and some potential customers have not signed up.

Maximizing the green energy purchased by those willing and able to pay for it would have a number of public benefits. It would certainly make reaching the green energy quotas easier for utilities and could help ensure that targets were met quickly, rather than only at a legal deadline. This would have a positive impact by reducing greenhouse gas emissions sooner than expected.

More importantly, voluntary programs could shift a greater portion of the 15 percent quota to companies and individuals who can afford to pay extra, reducing the price increases imposed on other customers. A voluntary program would actually act as a subsidy to low income families, reducing their financial burden. Assuming that the six percent of utility customers participated voluntarily, much of the green energy goal of Initiative 937 could be reached without imposing the high cost of a mandatory quota on all customers.

Finally, by failing to count voluntary programs, the Initiative actually encourages utilities to minimize the amount of energy sold through these voluntary programs. Every extra kilowatt hour of energy sold through these voluntary green programs would simply act as an inflator on the overall energy quota the utility has to meet. Utilities thus would have strong incentive to starve these programs, doing only the minimum required by law.

Initiative 937 drafters likely saw the voluntary programs as an opportunity to push up the amount of "green" energy generated in Washington. The efforts to extract this last

[19] Ibid. p 6

bit of renewable energy from the Initiative, however, has the effect of destroying what could be an effective program to promote green energy, while shifting the cost burden from rich to poor.

8. Subsidizing and Competing With Other States

Currently, twenty states have some sort of renewable energy portfolio requirement. The standards for what counts as "renewable" varies among them. The difference in those standards, and between states with energy quotas and those without, increases the likelihood that states will shift energy around to meet targets in states with renewable portfolios. In short, states without energy portfolios will sell their high-cost renewable energy to Washington state and will receive, in exchange, low-cost hydro or other energy for their own purposes. This amounts to a subsidy of energy prices in other states. That subsidy would be paid by all Washington residents, meaning that low- and middle-class families in Washington would pay to reduce energy costs for wealthier families in other states.

The lack of voluntary programs and the energy trading that Initiative 937 would encourage is likely to create a series of regressive transfers, proportionally shifting the cost burden away from those who can afford the higher energy costs and onto Washington residents as a whole.

States that do have similar energy quotas also exert inflationary pressure on the cost of renewable energy. These energy quotas increase the demand for limited renewable energy production, putting further upward pressure on the price. Under Initiative 937, some Washington utilities would find themselves in the position of trying to outbid other states for scarce renewable energy resources.

9. Conclusion: Weighing the Values, Costs and Goals

Often debates about environmental goals, and especially energy policy and global warming, focus primarily on the level of values. Arguments tend to be framed as, "If you believe we need to reduce carbon emissions and fight global warming, you should vote yes," or, "If you believe we need to reduce our dependence on countries like Venezuela or Iran, you should vote yes." There is broad agreement on these goals across the political spectrum.

In this study, however, we examined whether Initiative 937 can actually achieve those goals in a significant way, and whether the costs of the Initiative's quota mechanism is effective or acceptable given the costs.

Based on our research we find that Initiative 937 would likely reduce carbon emissions less than expected, because utilities are likely to substitute wind power for sources like hydro and nuclear energy which already emit zero carbon. The Initiative would also likely severely weaken voluntary green energy programs that allow individuals and companies who can afford higher energy costs to pay more for renewable energy. Finally, the Initiative would increase the cost of energy in Washington and would likely result in a net decrease in jobs. The Initiative would move jobs from efficient sectors of the economy to less-efficient renewable energy projects.

When examining Initiative 937, voters should assess whether the values, costs and strategies included in the Initiative are the best way to increase viable energy diversity and the supply of renewable power.

About the Author

Todd Myers is Director for the Center for Environmental Policy (CEP). He is the author of the recent study "Oregon's Measure 37: Lessons from the Last Eleven Months." He served as Director of Communications for the Washington State Department of Natural Resources, and was previously Director of Public Relations for the Seattle Super Sonics and Director of Public Affairs for the Seattle Mariners. Mr. Myers holds a Masters Degree in Russian and International Studies.

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If you have any comments or questions about this study, please contact us at:

Washington Policy Center
PO Box 3643
Seattle, WA 98124-3643

Visit our website at www.washingtonpolicy.org
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Or call toll free: 1-888-972-9272