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Effectiveness of Transferable Tax Credits for the Donation of a Conservation Easement: Comparison of Colorado and New Mexico

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I. Background

This paper examines the effectiveness of transferable tax credits in promoting the donation of conservation easements in two western states, Colorado and New Mexico. A conservation easement is a legal device representing the transfer of a real property interest, usually to a non-profit organization or government that restricts the use of the land for a “conservation purpose” in perpetuity. The donation of a conservation easement can result in both federal and state tax benefits. I.R.C. Sec. 170(h) allows a deduction for a person or corporation’s income tax, in the amount of the fair market value of any donated “conservation contribution” to a “qualified organization.” Sixteen states offer tax credits for the donation of a conservation easement, usually requiring that the donation qualifies as a “conservation contribution” under 170(h). These tax credits vary in form and amount. The purpose of these tax credits is to incentivize the donation of conservation easements, so their relevant success or failure is determined by whether landowners are motivated to carry out this purpose. The most successful of these tax credits are transferable. Five states have transferable tax credits for the donation of a conservation easement, including Colorado and New Mexico.

II. Colorado

Colorado’s Conservation Easement Tax Credit came about by way of CO House Bill 99-1155, which made the credit fully transferable from its inception. For the three years after adoption, the tax credit allowed the full appraised fair market value of the donation to be deducted, but capped the credit at \$100,000.

House Bill 01-1090 modified the existing tax credit in 2003 by increasing the cap. The new cap allowed the full appraised fair market value of the donation for the first \$100,000, and forty percent of any excess value over that amount up to a total of \$500,000 (making the maximum tax credit available \$260,000).² Between the

years of 2003 to 2007 Colorado landowners donated an average of 487 easements per year.³ The amount of tax credits claimed in these years steadily rose, peaking at \$128.5 million in 2007, representing over a 1000% increase from the first three years, while the total number of easements donated rose just over 325%.⁴

In 2008 Colorado passed HB 08-1353, aimed at providing more protections against abuses that threatened to cripple Colorado's conservation easement tax credit. The bill provided more oversight for donations and better guidelines for those wishing to follow the law.

i. Donation Oversight

One of the largest changes required appraisals of conservation easements be filed with the Division of Real Estate within 30 days of the completion.⁵ An affidavit for the values on which the appraisal is based must accompany the appraisal.⁶ This allows meaningful oversight of the appraisers, as the Division of Real Estate is also required to review the appraisals and track them in an electronic database.⁷ The Division of Real Estate, after passage of the Bill, has the authority to investigate any of the appraisals it believes overvalue a conservation easement or otherwise fail to comply with appraisal standards.⁸ The Bill establishes a nine-member Conservation Easement Oversight Committee that oversees the review by both the Division of Real Estate and the Department of Revenue of conservation easement donations that claim a tax credit, and has jurisdiction to make rulings on whether and when a credit will be allowed.⁹

ii. Organization Oversight

Other than oversight of the actual donations of conservation easements, the Bill requires that any organization in the state of Colorado that is to hold a donated conservation easement must have a certificate.¹⁰ The Conservation Easement Oversight Committee reviews applications for conservation easement holder certificates.¹¹ Currently there are 42 organizations with certificates authorizing them to accept donations of and hold conservation easements in the state of Colorado, ten are government entities and the rest are non-profit organizations.¹² This oversight ensures that these organizations have the capacity to enforce the conservation

easements they hold.

Limiting the number of organizations that can hold conservation easements reduces the likelihood of abuse and also brings down the cost of enforcement. If a handful of organizations are the ones involved in accepting donations of conservation easements, they are likely to use the same appraisers, follow the same format, and have a better understanding of the legal principles involved. Furthermore, those reviewing donations will see the same form of easements from the same organizations, and will be more likely to identify any inconsistencies.

Colorado's 2008 regulations went a long way to solve the problems with their tax credit system. A 2012 Audit found that there was still some problems with the conservation easement tax credit, but the recommendations from the audit were accepted by the Division of Real Estate and Department of Revenue over the last two years.¹³ As Nancy McLaughlin opined, a state with a high number of abuses is also a state that ripe for meaningful reform, and Colorado's reform can educate other states on how to have a successful tax credit program.¹⁴

III. New Mexico

New Mexico attempted to stimulate the use of their Land Conservation Tax Credit by making it transferable with the passage of HB990 in 2007.¹⁵ The Bill also increased the total cap that could be claimed from \$100,000 to \$250,000, but kept the tax credit at 50% of the fair market value of the donation.¹⁶ Eligible contributions for conservation easements must be for open space, natural resources or biodiversity conservation, agricultural preservation, watershed or historical preservation.¹⁷ A tax payer may only receive one tax credit per year for their donations.¹⁸

New Mexico has similar precautions for their tax credit that Colorado included in HB 08-1353, with a slightly different take on what they would review. First the donor of the conservation easement must have the donation certified by New Mexico's Energy, Minerals and Natural Resources Department (EMNRD).¹⁹ Once

the donation is certified, the donor must apply for a tax credit from New Mexico's Taxation and Revenue Department (TRD).²⁰ Once a credit is received it can be used for the taxpayer's state tax in the year it is received and carried over up to an additional 20 years.²¹ These reviews are meant to add an extra layer of protection against fraud and ensure that the land is "significant and important" to the State of New Mexico.²²

New Mexico also included some provisions for how the tax credit could be transferred, aimed at increasing accountability. Transfers of Land Conservation Tax Credits must go through a Qualified Intermediary as defined in NMAC 3.13.20.7(R).²³ The Qualified Intermediary must notify TRD of the intent to transfer a tax credit at least ten days before the transfer will occur, and must fill out an additional form.²⁴ A tax credit can only be transferred once.²⁵

Making the tax credit transferable was projected to result in the state foregoing an additional \$200,000 in 2008, the first year transfers would be allowed.²⁶ As intermediaries entered the market, and market demand increased as large taxpayers recognized the value of the tax credit, the use of the credit was forecasted to increase.²⁷ By 2012, the act of making the tax credit transferable was projected to forego an additional \$500,000 of tax revenues in that year, compared to the non-transferable credit.²⁸ While some projected there was going to be a "landslide of applicants," a modest increase in applicants led to foregone revenue much greater than what was predicted.²⁹

IV. Comparing the Effectiveness of CO and NM's Tax Credits Since 2008

The NM tax credit was fairly effective in increasing the size of the conservation easements, though perhaps somewhat less effective in increasing the total number of conservation easements donated. Comparing the four years before the tax credit was made transferable and cap increased, to the first four years it was in effect, show that these two policy changes can effectively motivate landowners to donate conservation easements.

i. New Mexico's Tax Credit Usage Data

Comparison of Conservation Easement Donations in NM,
Before and After HB 990.

	Before (2004-07 avg./year)	After (2008-11 avg./year)
Donations per year	9.5	11.5
Acres Donated	5,304.5 acres	8,557.5 acres
Value of land donated	\$4,242,500	\$6,918,250
Tax credits issued by TRD	\$700,500	\$2,498,750
Credits claimed by taxpayers	\$346,000	\$1,687,500
Credit per acre donated	\$843/acre	\$808/acre

Data from Fiscal Impact Report SB 200 (NM Legislature: Legislative Finance Committee 02/07/12)

While the amount of donations has only slightly increased, the size of the land donated in each year is much greater. More acreage donated lead to the amount of tax credits issued to more than triple, and the amount of tax credits claimed to more than quadruple.³⁰ In the years after the tax credit became transferable, the average foregone revenue in each year increased over a million dollars,³¹ more than double the projected increase in revenue loss for the year 2012.³² The foregone revenue is also highly variable from year to year. In 2008 only \$284,500 was in credits were claimed, all for personal income taxes.³³ Two years later in 2010, taxpayers claimed \$3,537,400³⁴ going from 0.0055% of the States' total tax revenue to over 0.08% of the States' total tax revenue.³⁵ This significant variability and large expenditure can make it difficult for a state to plan its budget. However, even the success that making New Mexico's tax credit transferable has in motivating landowners to donate conservation easements, it is dwarfed in usage by the very similar tax credit offered in Colorado.

ii. Usage of Colorado's Tax Credit

Since it came into effect in 2000, the Colorado's tax credit has been awarded in the donation of over one hundred conservation easements in every year but one (2002), and as many as 585 donations in a year (2007).³⁶ This high volume of donations cost Colorado nearly \$64 million per year in current or future revenue from 2000

to 2009, before the aggregate limit of credits was capped in 2010.³⁷ The use of these credits peaked in 2008 at just under \$98.5 million³⁸, over 1% of the State's total tax revenue for that year.³⁹ So, why isn't New Mexico's tax credit as effective in motivating land owners to donate conservation easements when the two tax credits are relatively similar?

iii. Tax Factors

The effectiveness of each states' tax credit in promoting the donation of easements might have to do with the taxpayers themselves, and how each state collects taxes. The tax rates, and the portion of income tax as a part of the total tax revenue are relevant factors because each of these tax credits can only be used against income tax, personal or corporate.

Colorado's income tax rate is very simple. The state imposes a flat 4.63% tax on individual tax payers, married couples, and corporations, based on their federal adjusted gross income.⁴⁰ Income tax is the primary source of tax revenue for the state, making up 53.4% of the total tax revenue collected.⁴¹ Personal income tax makes up most of this total, at 49.3% of the state's total tax revenue collected, whereas corporate income tax makes up just 4.4%.⁴²

New Mexico's tax rate is a bit more complicated. It uses four different rates in a graduated rate system to tax income for personal income tax as follows: \$0 to \$5,500 at 1.7%; \$5,501 to \$11,000 at 3.2%; \$11,001 to \$16,000 at 4.7%; and 16,001 and above at 4.9%. Corporate income tax in New Mexico is assessed in three brackets: \$500,000 or less at 4.8%; \$500,001 to \$1,000,000 is taxed at the sum of \$24,000 and 6.4% of excess over \$500,000; Over \$1,000,000 is taxed at the sum of \$56,000 and 7.6% of excess over \$1,000,000. These rates lead to about 27% of New Mexico's tax revenue coming from income tax, 22.1% from personal income tax, and 4.9% from corporate income tax.⁴³

Colorado collects a greater portion of its tax revenue from income tax when compared with New Mexico's tax revenue. This means in Colorado, a greater portion of an individual's tax burden is from taxes for which the

tax credit can be used, creating a greater incentive to individual land owners. In both states, individual income tax is substantially higher than corporate income tax, leading to a much larger portion of the tax credits being claimed by individuals.⁴⁴ A higher individual income tax burden might be a motivating factor in both donating a conservation easement and creating a market for the sale of transferable tax credits.

iv. Other Relevant Factors

There are many non-tax factors that might influence a landowner to enter into some sort of conservation agreement. However, perpetual easements can significantly reduce the value of land and restrict its use, so landowners tend to like shorter term commitments.⁴⁵ There have been a number of studies done to determine exactly what motivates (particularly agriculture and silviculture) landowners to participate in land stewardship programs.⁴⁶ They conclude that in addition to shorter participation times and tax incentives, other factors include: stewardship ethic of land management to sustain future use, soil quality, and income derived from land.⁴⁷

At least one study looked at agriculture landowner's willingness to sell or donate conservation easements in particular, and one of two states surveyed was Colorado.⁴⁸ The other state, Wyoming, is at least somewhat similar in land use demographics, size, and population density to New Mexico. The results of this study seem to indicate that land trusts actively seeking out donations or purchases of conservation easements significantly increases the likelihood of an easement being obtained.⁴⁹ The study also shows that Colorado land trust organizations were much more active in seeking out conservation easements from landowners than land trusts in Wyoming, resulting in a higher number of landowners placing a conservation easement on their land in Colorado.⁵⁰ The study also noted that many agricultural landowners were concerned with the amount of development going on in their area, and felt that preservation of open space was valuable to their community.⁵¹ Preliminary research done with focus groups to develop the survey found significant factors leading landowners to conserve their land were: wild life habitat, open space and agricultural production.⁵²

While the studies shed light on what motivates landowners to convey conservation easements, they do not include other large scale factors that could impact the public's perceived need for conservation easements such as, population growth rate, rate of conversion of agricultural land to residential, dominant economy in areas where conservation easements are donated, land size available for donation and other relevant factors that might influence the rate at which easements are donated. These factors are relevant not only to the public's perceived need, but also the monetary value to be derived from the landowner choosing the alternative of not donating an easement, and instead selling their property to a developer, or developing it themselves. An empirical study looking at these relevant factors could further inform why there is a difference between the rate at which conservation easements are donated in Colorado versus New Mexico, but such research is outside the scope of this paper.

v. Conclusions

The use of Colorado's tax credit likely benefits from the higher relative income tax burden for which the credit can be used when compared with New Mexico's tax credit. The more tax collected for which the credit can be used, the larger the market for the use of the credit, and therefore the higher demand for the credits. However, this factor might not fully explain the difference in the use of two tax credits. Colorado's tax credit also enjoys a large amount of advertising, and land trusts are very active in seeking out donations from landowners.⁵³ No similar data is available for New Mexico, but one could infer that the factors above, along with the lucrative tax credit has led to the higher rate of donations in Colorado.

V. Conservation Value

Where is the public benefit in all of this?

In nearly every case a conservation easement is a very good return on investment for the public.⁵⁴ The land conserved offers both biophysical and socioeconomic benefits to the public.⁵⁵ In Colorado taxpayers get back an estimated six dollars for every dollar of foregone revenue that is used to secure a conservation

easement.⁵⁶ The costs to the public in terms of foregone revenue in Colorado was \$692/acre from 2000 to 2009. Though ecosystem services aren't always used to value conservation easements,⁵⁷ the fact this value falls below the values of ecosystems services conserved land uses provide per year shows we should promote the donation of conservation easements. Given that the conservation easements are donated in perpetuity, even those easements that yield a low annual per acre value of ecosystem services have a high return on investment over the life of the investment—which is forever.

VI. Conclusion

Transferable tax credits for the donation of conservation easements benefit the public in many ways. More states should implement them. States should examine their tax structure and determine the most effective means by which to incentivize the donation of a conservation easement, and what type of market this might create. Furthermore, a state should make sure that its landowners know about the tax credit in order for it to be used effectively. Conservation easements will continue to play an important role in preserving conservation values, and with such a high return on investment there is no reason a state should not want to incentivize the donation of these easements.

ENDNOTES

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² See DIANNE E. RAY, CONSERVATION EASEMENT TAX CREDIT DEPARTMENT OF REVENUE DIVISION OF REAL ESTATE PERFORMANCE AUDIT, Office of the State Auditor (September 2012) Ray Supra note 17. Analyzing Department of Revenue Data

³ *Id.*

⁴ *Id.*

⁵ HB 08-1353 (Colorado 2008)

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² Division of Real Estate, *Conservation Easement Holder Certification Status*, (Last visited Dec. 2, 2014) available at <http://cdn.colorado.gov/cs/Satellite/DORA-DRE/CBON/DORA/1251623544679>

¹³ Ray Supra note 2.

¹⁴ Nancy A. McLaughlin and Jeff Pidot, Symposium, *Conservation Easement Enabling Statutes* 2013 Utah L. Rev. 811, 847.

¹⁵ LAND CONSERVATION INCENTIVES TAX CREDIT INSTRUCTIONS, State of New Mexico Taxation & Revenue Dept., (2014)

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² NMAC 3.13.20.7(F)

²³ *Id.* at R

²⁴ LAND CONSERVATION INCENTIVES TAX CREDIT INSTRUCTIONS, State of New Mexico Taxation & Revenue Dept., (2014)

²⁵ *Id.*

²⁶ Fiscal Impact Report for HB 990, Legislative Finance Committee (New Mexico Legislature March 15, 2007)

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Land Conservation Incentives Tax Credit (Senate Bill 32): Minutes of the Second Meeting of the Land Grant Committee*, New Mexico Legislature (2009)

³⁰ Fiscal Impact Report SB 200, Legislative Finance Committee (New Mexico Legislature Feb. 7, 2012)

³¹ *Id.*

³² Fiscal Impact Report for HB 990, Legislative Finance Committee (New Mexico Legislature March 15, 2007)

³³ 2013 NEW MEXICO TAX EXPENDITURE REPORT, New Mexico Taxation and Revenue Dept at p.37 (2013)

³⁴ *Id.*

³⁵ State Tax Revenues: Charts and Data; Governing Data (Governing.com last visited Dec. 1, 2014) available at <http://www.governing.com/gov-data/state-tax-revenue-data.html>. NM total state revenue:

\$5,211,507,000(2008),

\$4,295,237,000(2010).

³⁶ Ray Supra note 2.

³⁷ *Id.*

³⁸ Jeffrey O. Sundberg and Chao Yang, *State Income Taxes for Conservation Easements: Do Additional Credits Create Additional Value*, State Tax Notes Issue 10 Vol. 66. (2011)

³⁹ State Tax Revenues: Charts and Data. Supra Note 35.

⁴⁰ State Taxes: Colorado, Bankrate available at <http://www.bankrate.com/finance/taxes/state-taxes-colorado.aspx>

⁴¹ State Tax Revenues: Charts and Data. Supra Note 35.

⁴² *Id.*

⁴³ *Id.*

⁴⁴ See Sundberg & Yang at p.30 Supra Note 38 for Colorado rates. See Fiscal Impact Report for SB 200 Supra note 30 for New Mexico.

⁴⁵ McGaffin et al., *Landowner Preferences for Conservation Easements: Responses from Two Intermountain States*, Journal of the American Society of Farm Managers and Rural Appraisers, (2012)

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.* See also Miller et al., *Factors Impacting Agricultural Landowners' Willingness to Enter into Conservation Easements: A Case Study*, Society & Natural Resources: An International Journal Vol. 24 Issue 1 (2010)

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² Miller et al., *Factors Impacting Agricultural Landowners' Willingness to Enter into Conservation Easements: A Case Study*, Society & Natural Resources: An International Journal Vol. 24 Issue 1 (2010)

⁵³ McGaffin et al. Supra note 45.

⁵⁴ A RETURN ON INVESTMENT: THE ECONOMIC VALUE OF COLORADO'S CONSERVATION EASEMENTS, The Trust for Public Land

⁵⁵ Julie Ann Gustanski and John B. Wright. *Exploring Net Benefit Maximization: Conservation Easements and the Public-Private Interface*, Law and Contemporary Problems (Vol. 74 Issue 4, Fall 2011).

⁵⁶ A RETURN ON INVESTMENT, Supra Note 54.

⁵⁷ Julie Ann Gustanski and John B. Wright. Supra Note 55.

The Problem with Pesticide Registration

EMILY KNOBBE¹

I. Background

Pesticides have been in the news a lot lately as scientists have sought to find the cause of colony collapse disorder, the syndrome that has killed 30% of honeybees in the past ten years.² Honeybees and other pollinators are responsible for one third of foods eaten by Americans.³ The future of the agriculture industry depends upon pollinators, as does the future of our country's food supply. Scientists have identified neonicotinoid pesticides as one cause of collapse; so why are they still some of the most widely used pesticides in the country? The pesticide registration process through the Environmental Protection Agency (EPA) is not set up to protect us from harmful pesticides. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)⁴ is full of holes, and the EPA does nothing to fix it. The EPA needs to use FIFRA as it was intended and fight back against neonicotinoids so we can protect pollinators and save our food supply and way of life.

Neonicotinoids are a family of pesticides containing six widely used chemicals.⁵ The most common is imidacloprid, which had \$1,091,000,000 worth of sales in 2009 alone.⁶ Other neonicotinoids in order of quantity of sales are thiamethoxam, clothianidin, acetamiprid, dinotefuran, and nitenpyram.⁷ These pesticides are used on about 95% of corn and canola crops and on about half of all soybeans.⁸ Neonicotinoid use is also common for nearly every fruit, vegetable, and grain.⁹ They are even found in common garden chemicals and in some flea treatments for pets.¹⁰ Neonicotinoids are used both as contact and systemic pesticides. Contact pesticides are sprayed directly on the surface of the plant and kill pests that come into contact with the chemicals. Neonicotinoid labels often include restrictions to prevent farmers from spraying neonicotinoids on crops during the pollination season when bees will be visiting.¹¹

Neonicotinoids are more commonly used as systemic pesticides. Systemic describes a class of pesticides that are applied directly to the seed, soil, or water source and incorporate throughout a plant's tissue

as it grows.¹² The plant itself becomes toxic. Any insect that pierces the surface of the plant by biting or sucking is instantly poisoned and killed.¹³ The incorporation of the pesticide does not stop in the stems and leaves of the plant. It grows into the nectar and pollen of the plant as well.¹⁴ A foraging honeybee drinks the nectar but receives only a sub-lethal dose of pesticide. The true impact comes from the effect of the slow poisoning of thousands of honeybees on the collective hive.¹⁵ A single honeybee does not matter to the health of the hive as a whole, with the exception of the queen. What matters is the ability of the hive to function normally, and poisoned honeybees cause malfunction in a hive.

A foraging honeybee flies from flower to flower, feeding on nectar and spreading pollen. It is in this way that the bee receives dose after dose of poison from contaminated flowers. Neonicotinoids are neurotoxins. When an insect bites into a plant treated systemically by neonicotinoids, the toxins interrupt neurotransmissions, causing instant death. Since honeybees ingest only sub-lethal doses, it makes them behave as if they are intoxicated. They return to the hive with only small amounts of food, and they may have a decreased ability to communicate with other bees, which is crucial for telling other bees where food supplies can be found.¹⁶ Furthermore, honeybees bring contaminated pollen back with them to the hive for non-worker bees to eat. The whole hive consumes neurotoxins, interrupting the most basic functions of the unit. This systematic dosing causes a reduced ability to forage, resulting in food supplies insufficient to sustain a hive through even the mildest winters.

In 2014, a Harvard University study stated, “sub-lethal exposure to neonicotinoids is likely the main culprit for the occurrence of CCD.”¹⁷ The study tested the ability of neonicotinoid-exposed hives to overwinter compared to non-treated hives. Both control group and exposed hives suffered losses, but control group hives always contained thousands of dead bees. Exposed hives contained abandoned larvae, eggs, and honey but very few dead bees. This result is consistent with the symptoms of colony collapse. The Harvard study concluded that exposure to neonicotinoid pesticides impairs a hive’s ability to overwinter. Six of twelve treated hives

collapsed over the winter, while only one of the six untreated hives suffered the same fate. Other studies have made similar conclusions. One study conducted over a particularly cold winter resulted in a 100% mortality rate for hives treated with even very small doses of neonicotinoids. A French study in 2012 found that neonicotinoid exposure decreased honeybees' innate ability to find their way back to the hive.¹⁸ A British study on bumblebees, similar in biology and social structure to honeybees, concluded that neonicotinoids prevent bumblebees from collecting enough food to survive the winter.¹⁹ Study after study yields the same worrisome conclusion.

II. FIFRA and the EPA

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was enacted in 1947 to establish the procedure for registration of pesticides.²⁰ The rewriting of FIFRA in 1972 assigned regulation duties to the Environmental Protection Agency (EPA). Since 1972, FIFRA has been amended multiple times, but the basic framework has remained the same. The EPA is in charge of registration of pesticides and regulation of subsequent use and sale of those pesticides. FIFRA does not fully preempt state and local laws, so states and local governments may also have their own pesticide regulations.

i. Pesticide Registration

Section 3 of FIFRA provides the procedure for new pesticide registration. The manufacturer of a new pesticide files an application for registration, which often includes extensive environmental, health, and safety data. For the application to be approved, the EPA must determine that: “its composition is such as to warrant the proposed claims for it”; “its labeling and other material required to be submitted comply with the requirements of the Act”; “it will perform its intended function without unreasonable adverse effects on the environment”; and “when used in accordance with widespread and commonly recognized practice, it will not generally cause unreasonable adverse effects on the environment.”²¹

FIFRA permits the EPA to grant conditional registration of pesticides when the new pesticide and its proposed use are substantially similar to a registered pesticide or when approving registration would not significantly increase the risk of any unreasonable adverse effect on the environment.²² Conditional registration expedites registration by it eliminating the requirement for a notice and comment period and allowing the EPA to collect data requirements some time after the registration of the pesticide.²³ What began as a special exemption written into FIFRA has become the EPA's common practice in registering pesticides. In fact, about 65% of pesticides currently on the market are registered conditionally, meaning that health data usually required in registration applications has not been conducted for more than 11,000 pesticides.²⁴ The EPA's own analysis revealed that the agency misused conditional registration in 98% of cases.²⁵

Included in the extensive list of conditionally registered pesticides are the neonicotinoids thiamethoxam, clothianidin, acetamiprid, and dinotefuran.²⁶ The conditional registration of clothianidin has proven to be particularly harmful.²⁷ The EPA granted a conditional registration of the chemical to Bayer CropScience in 2003, mandating that a study on the effects on bees be submitted within one year. Bayer submitted the data in 2007, three years late, and the study was so heavily flawed that the EPA found it to be invalid.²⁸ The study provided no raw data, so the EPA could not perform their own statistical analysis.²⁹ The EPA eventually elevated the status of the study from "invalid" to "supplemental" because of the discovery that clothianidin was present in pollen and nectar, meaning that bees were indeed exposed to the toxin.³⁰ Regardless, in 2010, clothianidin's registration status changed from conditional to fully registered, despite the fact that no data exists to show that the pesticide is harmless to bees.

ii. Pesticide Removal

With dangerous chemicals on the market, it is important to know how that there are several ways to remove a pesticide once it has been registered. The first is voluntary cancellation. The EPA is required to reexamine registration of every pesticide at least every fifteen years, or earlier if the EPA chooses to do so.³¹ A

registrant must exist to sponsor a pesticide that is up for reregistration.³² In the past, most cancelled pesticides lost registration status simply because the registrant did not seek reregistration. For example, in 2012, the EPA initiated registration review of thiacloprid, a Bayer CropScience pesticide.³³ Amid data preparation for the review by the FIFRA Endangered Species Task Force (FESTF) and the American Bird Conservancy, Bayer requested a voluntary cancellation of thiacloprid registration. The EPA published the final Cancellation Order for all thiacloprid products in August of 2014,³⁴ and the case was closed by November. The EPA should reconsider the registration of all neonicotinoid pesticides as it did with thiacloprid. If given the opportunity, hopefully more pesticide manufacturers would be willing to voluntarily cancel their neonicotinoids.

When the EPA is slow to act, other methods may be more reliable for getting harmful pesticides off the shelves. The second method is cancellation before review. The EPA may cancel a pesticide when the pesticide or its labeling causes unreasonable adverse effects on the environment.³⁵ In order to cancel a pesticide registration, the EPA must issue a notice of intent to cancel the registration or the intent to hold a hearing to determine if registration should be cancelled. At least sixty days prior to issuing public notice, the EPA must notify the Secretary of Agriculture of the issuance plans in order to give the Secretary adequate time to respond. Both actions are subject to the notice and comment period required by the Administrative Procedure Act, meaning that at least thirty more days must pass before the EPA can issue a final decision. The cancellation process is a slow one and is subject to extensions of the comment period and other agency red tape. The classic story of pesticide cancellation is the case of DDT. Rachel Carson published her famous book, *Silent Spring*, in 1962, which raised enough concern about the use of pesticides to draw the attention of Congress.³⁶ President Nixon established the EPA in 1970 to consolidate environmental protection efforts and respond to the growing environmental protection movement.³⁷ After years of research and data analysis by the EPA and other organizations, the EPA issued a Cancellation Order for nearly all DDT products and uses in 1972. The Hearing Examiner at a subsequent hearing almost derailed the cancellation of DDT by concluding there was no need for

a DDT ban.³⁸ Regardless, a few months later, the EPA issued its final opinion and order, effectively cancelling the registration of DDT.³⁹ Cancellation allows for faster removal of the pesticide than voluntary cancellation, but when a pesticide is causing adverse effects to the environment, it is preferable to cease its use as soon as possible. Even though the EPA banned DDT in 1972, its toxic break-down products persist and have the potential to cause harm in the environment today.⁴⁰

When time is of the utmost sensitivity, the third method of removal, suspension, is the best option. The EPA may quickly suspend the registration of a pesticide when that action is necessary to prevent an imminent hazard.⁴¹ Except in the case of an emergency order, the EPA must simply notify the registrant of its intent to suspend and subsequently cancel registration. The registrant has the option of an expedited hearing, after which point the EPA can suspend the pesticide, halting all use and sales.⁴² The EPA may also issue an emergency order for immediate suspension when an emergency exists that does not permit waiting even the maximum of ten days required for normal suspension.⁴³

In 2012, a number of beekeeping and environmental organizations filed a petition with the EPA for the immediate suspension of clothianidin.⁴⁴ The petition alleged, among other things, that the continued use of clothianidin presented an imminent hazard, and therefore immediate suspension was warranted.⁴⁵ The petition stated the following:

Every year clothianidin remains in use, the viability of pollinator populations deteriorates more. After at least six consecutive winters resulting in significant, abnormal, die-offs of honey bees, their populations across the United States could collapse. Economic losses from the collapse of U.S. bee colonies would measure in the tens of billions of dollars. The ecological impacts of lost pollinators also would be devastating and perhaps irreparable. With the stakes so high, and with America's beekeepers and honey producers already suffering severe losses, EPA cannot reasonably interpret FIFRA to require putting off suspension until this hazard somehow becomes *more* imminent.⁴⁶

The EPA rejected the petition, despite the fact that “[t]he data, literature and incident reports do make clear that clothianidin is acutely toxic to bees, and that adverse effects to foraging bees occasionally occurs as the result of clothianidin use.”⁴⁷ The EPA stated, “the petition fails to make a showing of imminent harm and is therefore

denied on that basis.”⁴⁸ It was difficult to find any examples of pesticides suspended for causing any type of “imminent hazard” both because the EPA does not keep a record and because there are so few suspended pesticides.⁴⁹ The EPA has no standard for an “imminent hazard” to the environment so it will not act, even when faced with a significant loss to food supplies.

FIFRA has provided a system for the EPA to prevent harm from pesticides. When the science puts blame on pesticides for the death of millions of bees, the EPA must fulfill its duty to the American people by ending registration of these chemicals. The EPA should cancel or suspend all neonicotinoid pesticide registrations. In the very least, they should be removed from the market until enough research can be provided to merit non-conditional registration. We are facing the loss of one third of our country’s food supplies. Without action, we will continue to lose pollinators, and the stability of our food supply will become more and more tenuous. The EPA has the tools; it is high time it uses them to protect us against the harm caused by neonicotinoids.

ENDNOTES

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Penalties and Incentives: Approaches to Clean Energy Legislation

MAGGIE BOBERG¹

This excerpt describes the energy environment in both Colorado and Oregon. Specifically, Colorado's Clean Air Clean Jobs Act (CACJA) and Oregon's Senate Bill 844 from the 2014 legislative session are compared as programs that impose penalties versus incentives. CACJA was implemented in 2012 and required the shutdown or retrofitting of coal-fired generation facilities while SB 844 offered incentives for renewable projects.

I. Background

Policy makers, scientists, lawyers, activists and citizens around the world are working to strike a balance in the energy market. The world's demand for energy over the past century grew exponentially. Populations expanded and with the increased demand, technology developed to meet the growing energy needs. Many devote their efforts to promoting clean energy and convincing the world to recognize the need for a sustainable approach to consumption. Legislation is one tool employed to influence the energy market. At both the state and federal levels, lawmakers are working towards a more sustainable approach to energy consumption as well as reducing emissions.

Legislation tends to follow two routes: either incentivizing behavior or instituting penalties for behavior. The question of penalties versus incentives as economic tools to encourage social change is not a new one, but one that is important to explore as more states continue to adopt carbon emissions legislation. A variety of factors impact whether the incentive or penalty approach is more effective in a given state: environment, type of resources available, types of resources produced, job economy and types of consumption, to name a few. Alternatively, a blend of approaches may be the superior choice. This paper first provides an overview of the need for emissions reduction in our electricity generation process and outlines various methods for implementing reduction programs.

II. The Demand for Clean Electricity Generation

Globally, air pollution is a problem with severe consequences. Part of the air pollution problem stems from our need for electricity. One of the primary methods of electricity generation is to use coal-fired plants.² Coal combustion causes problems not only for our natural environment but our physical health as well.³ The federal Clean Air Act (Act) was devised by Congress to ensure public safety from high levels of toxic substances in the air.⁴ One of the Act's primary purposes is, "to encourage or otherwise promote reasonable Federal, State, and local governmental actions, consistent with the provisions of this chapter, for pollution prevention."⁵ Under the Act, states are encouraged to adopt programs to help meet national air quality standards. Several strategies exist for meeting these national air quality standards. Some strategies focus on developing ways for the general public to use cleaner energy sources while others focus on increasing efficient use of the energy already available.

i. Finding Clean Energy Sources

Some states have adopted renewable portfolio standards (RPSs) to accomplish the national air quality goals established by the Clean Air Act. An RPS requires a utility to provide a certain amount of the energy to its customers from specified qualifying resources (including wind, solar, biomass, etc.). A percentage of each utility's electricity sales must be, therefore, purchased from a renewable source. The RPS thus helps to develop new markets and reduce fossil fuel dependence.

Colorado's RPS, for example, considers all retail electricity providers that serve up to 40,000 customers to be qualifying retail utilities so long as their electricity is derived from compliant renewable sources.⁶ These sources include traditional renewables as well as energy from waste.⁷ The qualifying retail utilities must meet an increasing target of their electricity generated from eligible energy resources through 2020: 3% by 2007, 5% by 2010, 12% from 2011-2014, 20% from 2015-2019, and 30% from 2020 onward.⁸ The RPS also makes a requirement for distributed generation to be a specific percentage of each of these sales: at least 1% in 2011 and

2012, 1.25% in 2013 and 2014, 1.75% in 2015 and 2016, 2% in 2017-2019, and 3% from 2020 onward.⁹

Distributed generation refers to the customer's use of small-scale electricity generation, such as solar panels attached to an individual home or business, instead of requiring electricity from a utility.¹⁰

Oregon's RPS, to offer contrast, requires large utilities (those with sales equal to 3% or more of all electricity sold to retail electricity consumers) to provide an increasing percentage of electricity from qualifying renewable sources (5% by 2014, 15% by 2019, 20% by 2024, and 25% by 2025).¹¹ This qualifying standard must be met beginning in the fourth year after which the utility becomes subject to the standard. Qualifying renewable sources include biomass, geothermal, some hydropower, ocean thermal, solar, tidal, wave, wind, and hydrogen.¹²

States are also introducing net metering devices to develop an interest in renewable energy technologies. These unique meters are installed at the customer's end of the distribution line. The meter makes two measurements: (1) The amount of energy produced by the customer through its own renewable source (such as wind or solar technology); and (2) The amount of energy consumed by the customer. This technology measures the difference or 'net' between electricity supplied by a utility and electricity generated by a private customer that is "fed back to the electric utility over the applicable billing period."¹³

Oregon maintains an excellent example of net metering technology at work. Customers of PG&E and PacifiCorp may apply their own energy production to fill their electricity needs (industrial, commercial, residential, etc.).¹⁴ They may do so if they are generating electricity using a defined renewable source that is located on their property and intended to offset their use of utility generated electricity.¹⁵ If the customer does not generate enough electricity to cover their needs and they must use utility generated electricity during a one-month billing period, they are billed as usual for the electricity used.¹⁶ If instead the customer generates electricity in excess of what they use, the electricity is sent back to the utility.¹⁷ The customer is charged a fee for this technology but otherwise is credited for the excess kilowatt-hours generated (the value of which is

determined by the Public Utility Commission (PUC) or other governing body).¹⁸ At the end of the 12-month billing cycle, excess electricity gained by the utility is distributed by the utility to low-income customers, credited to the customer that generated it, or given over to other use.¹⁹

Renewable Portfolio Standards and Net Metering are only two examples of common strategies integrated into state laws to encourage development of clean energy technologies and promote cleaner electricity generation. While private and public utilities are at work implementing these plans, some states have taken on other programs to help reach the goals they have set or to meet the standards of the Clean Air Act. In addition to creating clean energy, some states have focused on increasing efficient energy use.

ii. Efficient Energy Use

A focus on energy efficiency may prove just as useful in reducing the demand for fossil-fuel energies. Much of the energy created in fossil fuel-reliant facilities is lost in the transmission process from the generation point to the customer. Currently there is no standard technology that would relieve the efficiency issues with energy transmission. However, data exists indicating that if we can solve the efficiency problem, we will greatly increase our available energy from resources already in use.

Renewable technology and increased energy efficiency are undoubtedly part of the equation for reducing emissions from fossil fuel combustion and maintaining Clean Air Act standards. While most states have taken steps to implement these types of remedies, some states have enhanced their approach through further legislation. This may signal a new wave of state approaches to energy challenges.

III. Comparing Colorado and Oregon's Legislative Approaches to Emissions Legislation

Legislators deal with very different conditions in Colorado versus Oregon when approaching clean energy legislation. Colorado faces the reality of needing energy reform immediately while Oregon legislators face a less restrictive time limit. Colorado utilities subject residents to high levels of toxic emissions whereas Oregon's air quality is not dangerous in most areas. Colorado is dependent on coal mining and coal-fired

generation for not only electricity, but also for revenue to fund many state programs and support families. Oregon does not maintain a coal dependence but instead, has begun a shift to renewable sources. Finally, Colorado needed to address private energy producers in their legislation whereas Oregon is primarily focused on building a broader electric generation portfolio.

Even though the legislative approaches analyzed above were enacted in very different environments, they allow for observations concerning what type of legislative efforts are most effective in reducing emissions. Colorado's Clean Air Clean Jobs Act (CACJA) is continually working to reduce dependence on coal-fired electricity generation. In 2010, prior to CACJA, Colorado received 70% of its electricity from coal-fired plants.²⁰ As of March 20, 2014, the amount of electricity produced from coal was reduced to 61% of the total.²¹ This reduction was likely due to the retiring of some coal plants and retrofitting of others – a process that would instantly cut harmful emissions. The reduction in coal production, however, did not come without cost. The consumers were directly affected by increased rates to update coal plants. While at first the Colorado legislation seems to place a penalty on the utility, the penalty ultimately falls to the consumer. Incentives and penalties are often confused in legislation aimed at environmental protection.²² In the case of emissions reduction it is especially muddled given the reality that burdens fall to the public, and utilities or providers may end up benefiting from profits in the long run.

Regardless, Colorado has achieved reduction in coal dependence (even though it is a small step) in the past four years as a result of CACJA. The next step in legislation is to work towards the approach Oregon has adopted in 2014's Senate Bill 844: incentivizing new emissions reductions projects. If an incentive-centered approach had been introduced prior to CACJA, it likely would not have reduced the coal dependence as effectively as CACJA has. However, now that the move towards renewable markets has started, it may be more likely that Colorado is ready for legislation similar to that introduced in 2014 Senate Bill 844.

Oregon has not yet begun to see the results of its recent legislation. Given the public's response to

Senate Bill (SB) 844's proposal, however, Oregon residents also do not respond well to potential rate increases due to technological advances in the electricity infrastructure. Whether approaching renewable development, efficiency increases or energy storage, the public's disdain for proposed rate increases is a problem that utilities and legislators continue to face. For example, Oregon legislators are met with opposition surrounding SB 324 introduced in the 2015 session. SB 324 implements an extended sunset for the Clean Fuels Standard that many fear will raise the price of gas to the consumer.²³ Further, opposition will arise later in the 2015 session as the "Coal to Clean" program requiring elimination of all coal facilities by 2025 is discussed.²⁴

Neither a system based entirely on penalty nor incentive is likely to be the best approach. Rather, an approach that incorporates both may work more effectively to reduce emissions. Without improving or retiring technology already in place, Colorado would not be in a better position to open up to new renewable projects. Oregon, on the other hand, does not require a plan to dismantle dated technology but will have to continually develop technology and implement projects to improve emissions output.

ENDNOTES

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