Environmental Tax Incentives: What the United States Can Learn From the Netherlands and Japan

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ENVIRONMENTAL TAX INCENTIVES: WHAT THE UNITED STATES CAN LEARN FROM THE NETHERLANDS AND JAPAN

KALI WALLER*

I. INTRODUCTION

National economic strength and well-being are critical to advancing the quality of life of citizens. Given the challenge of global climate change, future economic productivity depends on both improving energy reliability and mitigating adverse effects to the environment. By utilizing tax incentives and conserving power through energy efficiency, the energy economy will become stronger and more competitive. This Comment studies environmental tax regimes created by the United States, Netherlands, and Japan, and discusses the best practices from each that can be applied to future tax incentive programs in the United States. Raising revenue and regulating behavior are the two main benefits of tax incentives, making them an ideal form of environmental regulation.

This Comment explores policy developments in the United States, Netherlands, and Japan, and identifies elements possessed by the most successful environmental tax schemes: simplicity, cost-effectiveness, and culture-specificity. These countries offer a diverse view of Western and Eastern culture and tax paradigms. Each country has a distinct way of managing taxes while implementing programs that encourage environ-

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mental reform. Additionally, the culture in each country is unique, making tax implementations and management particular to each.

Tax categories in these countries focus on green building programs ("Green Building") and energy efficiency policies that illustrate a more targeted purpose for environmental taxes. Energy efficiency tends to be geared toward consumers and businesses, while Green Building applies primarily to businesses and corporations. Energy efficiency is appealing to consumers because it involves commercial products such as appliances and utilities. These are specifically geared toward consumers because they are more pertinent in everyday life. Green Building programs apply mostly to corporations, which are uniquely positioned to handle the cost of high-rise building construction, renovation, and utilities. Both categories cover some of the most popular and pertinent tax incentive programs that exemplify past and present success.

In Part II, this Comment addresses the historical development of Green Building and Energy efficiency globally and in the United States, the Netherlands, and Japan. Part III analyzes the impact of cost, complexity, and culture on environmental tax incentives. The cost of a program is one of the most important elements in an environmental tax regime. The cost of the program must not be too high because the government should feel comfortable having the program last indefinitely without stifling the economy. The complexity of the program must also be minimal so that any consumer or corporation can participate. Finally, participation depends on citizens' attitude toward tax implementation, which is in part a product of the characteristics of their particular culture. To be successful in the United States capitalistic culture, ideal tax incentive schemes must reflect low government and consumer costs, and seamlessly integrate a straightforward administrative process.

Aspects of Japanese and Dutch environmental policy could result in even stronger tax incentive policies and programs in the United States. Environmental tax incentives and credits have been successfully imple-

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5 See KPMG Int'l. Coop., supra note 3, at 3 (suggesting that dividing up the taxes into categories better organizes the various areas in which environmental taxes are implemented).
6 See id. at 11.
7 See id.
8 See id. at 24.
mented in many parts of the world, and they can be implemented in the United States without upsetting the economy.

II. BACKGROUND

The U.S. federal government implements tax incentives to encourage the private sector to develop the economy in certain areas. Tax incentives are popular because the revenue cost is low compared to that of other tax-based programs, and they cost the government less than large-scale infrastructure programs. This makes incentives an attractive solution to many issues, because they allow the government to spend minimally and achieve benefit.

During the late 1960s and early 1970s, U.S. policymakers began discussing environmental protection and exploring how tax implementation could address specific environmental issues. In the early 1970s, President Richard Nixon unsuccessfully attempted to harness taxes for environmental purposes. His failed lead gasoline tax and sulfur dioxide emissions tax represented an unsuccessful early attempt to use taxes to protect the environment. Later environmental measures were more successful, for instance, the taxes on gas-guzzling cars in 1978 and then on chemicals to finance the Superfund in 1980. Subsequently, the U.S. Congress did not seriously debate any significant new environmental taxes until 1993, and even then, progress was minimal. In the last decade, federal environmental tax policy has focused on tax incentives and deductions to create actions with positive environmental effects, as opposed to penalties and negative price signals for damaging activities.

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10 Id.
13 Milne, supra note 11, at 419.
14 Cleaning up the Nation’s Hazardous Wastes Sites, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/superfund/ (last updated Mar. 20, 2015) (“Superfund is the federal government’s program to clean up the nation’s uncontrolled hazardous waste sites.”).
15 Milne, supra note 12, at 2.
16 Incentives are deductions, exclusions, or exemptions from tax liability often offered as enticements to engage in particular activities, such as positive environmental activities.
17 Deductions from gross income result in lower taxable income and thus lower overall tax liability.
18 In this context, penalties are used to curb environmentally negative activities by increasing the tax liability, typically on an entity.
The Energy Policy Act of 2005 defined much of the federal environmental policy that exists today.\textsuperscript{20} The Act created short-term benefits for energy-conscious investments, such as income tax deductions for energy efficient utilities in commercial buildings and tax credits\textsuperscript{21} for fuel-efficient vehicles.\textsuperscript{22} Many of these incentives and credits are still available to consumers and corporations. Additionally, tax incentives and credits have become available to corporations in various industries in exchange for implementing environmentally friendly policies.\textsuperscript{23} Regulatory burdens, tax relief, public opinion, rising liability, and increased popularity among consumers are all factors contributing to corporations devoting time and resources to resolving environmental concerns.\textsuperscript{24}

While the United States focused on environmental efforts, many countries around the world instituted policy changes and reforms that addressed concerns over rising sea levels, warming temperatures, and decreasing air quality. Since the First World Climate Conference in 1979, there have been many international conferences attended by world policy leaders aimed at mitigating the effects of global carbon emissions.\textsuperscript{25} In 1997, several countries passed the Kyoto Protocol, demanding a reduction in various greenhouse gases, mainly carbon dioxide.\textsuperscript{26} In 2005, the Protocol became international law when fifty-five countries, responsible for fifty-five percent of the carbon emissions in 1990, ratified the agreement.\textsuperscript{27} Despite fifty-five countries adopting the Kyoto Protocol,\textsuperscript{28} the United States was not one of them, and global emissions have actually increased since ratification.\textsuperscript{29} In the last twenty years, many countries


\textsuperscript{21} A credit is a dollar-for-dollar tax break, while an incentive is typically a percentage allowed for deduction.

\textsuperscript{22} 26 U.S.C.S. §§ 30B, 179D (LEXIS 2015). \textit{See also} Milne, supra note 19.


\textsuperscript{24} Id.


\textsuperscript{26} Id.

\textsuperscript{27} Id.


have implemented their own environmental policy systems, which often include tax-based regulation.

The United States, Netherlands, and Japan represent unique global placement in terms of cultures, resources, and regulations. Japan represents an Eastern perspective and practices, while the United States is very Western. The Netherlands is somewhere in between these two extremes. The culture in each country can be compared in terms of whether it is homogeneous, meaning the country values uniformity throughout culture and practices, or heterogeneous, meaning that the country values individual choice and preference in culture and practice, as reflected in the country’s policy. Regulatory practices are also a reflection of the culture and government, which are manifested in enforcement and policy measures.

The concept of an environmental tax is a relatively new. The Organization for Economic Operation and Development (OCED) is an organization that focuses on analyzing data relevant to emerging economies worldwide. OCED chose to define an “environmentally related tax” as a compulsory, unrequited payment to the government of environmental relevance. This Comment adopts “environmental tax” to mean the same as OCED’s definition. The term “environmental tax incentive” refers to the benefit provided for environmentally positive activity, while “environmental tax penalty” refers to a penalty for environmentally negative behavior. The terms “environmental taxes” and “green taxes” are used to describe environmental tax penalties, incentives, and expenditures in this Comment. Because this is an international comparison, defi-
nitions can vary slightly. However, the universal definition generally encompasses the sentiment behind the vocabulary.

Green tax initiatives are gaining popularity worldwide, largely because of rising concern over greenhouse gases like carbon dioxide. Countries around the world have implemented their own tax programs that work in tandem with consumers and corporations to create more sustainable practices. Furthermore, governments use taxes to address the challenges of environmental and social change. Through the use of taxes, penalties, and incentives, countries have developed and structured an emerging green tax landscape.

A. THE ROLE OF GREEN BUILDING POLICY

Environmental challenges put pressure on governments around the world to reduce environmental harm without undermining economies through slow growth. The U.S. building economy is responsible for forty-one percent of global carbon emissions, so the creation of tax incentives for Green Building should be a priority. Buildings in the United States alone are responsible for more carbon emissions per year than any other nation, except China. Providing utilities for a building, including power, heat, air conditioning, and light, produces carbon emissions, a byproduct of fossil fuels.

There are two main ways that buildings contribute to carbon emissions: utilities and the construction process. Because the construction process consists of transporting materials, machine work, manufacturing, and demolition that create substantial carbon emissions, buildings use forty percent of raw material globally on construction. Governments increasingly focus on reducing building energy consumption, improving water efficiency, and using sustainable materials to reduce costs and emissions. Buildings offer the largest low-cost emission reductions for

37 KPMG Int’l Coop., supra note 3, at 1.
38 Id.
43 Green Building Facts, supra note 40.
44 Id.
45 KPMG Int’l Coop., supra note 3, at 23.
governments worldwide when compared to other sectors like energy generation, industry, transportation, and agriculture.\textsuperscript{46}

Investing in Green Building technology is one of the most efficient ways to reduce carbon emissions, because there is a strong market demand, high cost savings for taxpayers, and public health gains.\textsuperscript{47} The United States has implemented Green Building tax reform through the Internal Revenue Code (IRC), which offers tax incentives.\textsuperscript{48} In the Netherlands, creating Green Building tax deductions has improved environmental policy.\textsuperscript{49} Japan relies more heavily on tax penalties, which includes an additional tax on petroleum and coal based on energy produced carbon emissions.\textsuperscript{50} Each country instituted a different regime, but all three have found success.

I. Green Building in the United States

According to the U.S. Environmental Protection Agency, an environmentally friendly, or green, building is a structure that is environmentally responsible and efficient throughout its existence.\textsuperscript{51} Attributes of Green Building include energy and water efficiency; protection of occupant health; improved productivity; and the reduction of waste, pollution, and environmental degradation.\textsuperscript{52} The U.S. building industry is one of the largest in the world. In the United States there are over 223 thousand businesses in the building industry, representing more than USD 531 billion in annual revenues, and nearly USD 62 billion in annual pay to over 1.7 million employees.\textsuperscript{53}

The U.S. Green Building Council (USGBC) regulates Green Building policy in the United States.\textsuperscript{54} Its mission is to change the way build-
ings and communities are designed, built, and operated. USGBC believes that a building is more fruitful environmentally and economically when it provides occupants brighter and healthier spaces in which to live, work, and play. USGBC's role in certifying new green buildings leads to increased tax incentives. This is especially pertinent because the United States tops global taxation indices due to extensive federal tax incentives for Green Building, energy efficiency, and renewable energy. Buildings are responsible for about one third of global greenhouse gas emissions, including indirect emissions. Leadership in Energy & Environmental Design (LEED) is the most widely recognized Green Building program connected to the USGBC. Since its inception in 2000, LEED has certified residential and commercial projects in the United States and abroad with increasing frequency and scale. Over 675 million square feet of real estate space was certified in 2014, the largest so far, and more than 3.6 billion square feet of building space has been certified worldwide as of January 2015. Currently more than 69,000 building projects in over 150 countries are LEED-certified.

In addition to the immediate economic savings generated when Green Building projects reduce consumption, there are also personal and business tax benefits written into the IRC. Under the IRC, “[t]here shall be allowed as a deduction an amount equal to the cost of energy efficient commercial building property placed in service during the taxable year.” The maximum deduction per square foot of green building space is USD 1.80. The deduction is available for many types of green designs that reduce the total annual energy and power costs, including heating, cooling, ventilation, and hot-water systems. The deduction is equal

55 Green Building Facts, supra note 40.
56 Id.
57 KPMG INT'L COOP., supra note 3, at 5.
58 U.N. ENV'T PROGRAMME, BUILDINGS AND CLIMATE CHANGE 9 (2009) available at http://www.unep.org/sbci/pdfs/SBCI-BCCSummary.pdf. Indirect GHG emissions include those that result “from the generation of electricity, heating and cooling, or steam generated off site but purchased by the entity.” Indirect GHG emissions can also result “from sources not owned or directly controlled by the entity but related to the entity’s activities.” EPA’s Greenhouse Gas Emission Reductions, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/greeningepa/ghg/ (last updated Nov. 5, 2012).
60 Green Building Facts, supra note 40.
61 Id.
to the cost of energy efficient equipment put into service during the taxable year. An additional USD 1,000 tax credit is available for every home built that is 30% more efficient than the baseline. That credit grows to USD 2,000 if the new home achieves or exceeds 50% efficiency.

Beyond incentives, there are very few environmental taxes and penalties imposed on corporations. One advantage to this tax method is that it encourages private sector growth while rewarding environmentally responsible behavior. However, without penalties, the United States lacks a powerful deterrent against unsustainable activities. There is no downside for refusing to make environmental investments, because no entity is forced to participate. For the most part, green tax incentives are well received because companies are not required to use them, but if they choose to, they are rewarded.

2. Green Building in the Netherlands

The Netherlands also has Green Building programs that benefit consumers and businesses. The Dutch Green Building Council, an independent group, focuses on making urban environments sustainable through the Building Research Establishment Environmental Assessment Methodology (BREEAM-NL) project, which certifies new structural developments and existing buildings on the basis of sustainability. BREEAM-NL analyzes nine points to certify a building: "management, health, energy, transport, water, materials, waste, land use and ecology, and pollution." Since its introduction in 2010, BREEAM-NL has certified over 100 Green Building projects and renovations.

In addition to BREEAM-NL, the Dutch Ministry of Infrastructure and Environment created options allowing corporations to improve sustainability through environmental investments. The Ministry instituted

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68 Id.
72 Id.
73 RUÏNSDRIJNST VOOR ONDERNEMEND NEDERLAND, supra note 49, at 5.
two interacting programs to achieve its goals. The Regulation on Random Depreciation of Environmental Investments ("Vamil") was introduced in 1991 to support environmental tax regulations.94 Nine years later, the Regulation on Environmental Investment (MIA) was introduced as a supplement to the original.95 Both programs enable corporations to reduce their overall costs by encouraging investment in environmental assets.96

Any taxpaying company in the Netherlands is eligible to participate in both schemes.97 The MIA incentive is a pure tax deduction that allows a company to partially deduct environmental technology against its corporate income tax.98 Eligible technologies are rated by the Dutch government and are listed with deductions that range from 15 to 75 percent.99 In some instances, companies can combine Vamil and MIA to further recover the cost of purchasing and implementing environmental technology.80 Under Vamil, the corporation determines the rate of depreciation.81 By allowing it to choose, Vamil reduces the cost of the investment by reducing the company’s tax liability.82 Typically, the deduction is taken annually for the life of the equipment; however, accelerating the rate of deductions creates a rapid savings in tax liability and increases reported earnings.83 Generally, the program recommends that companies take a high depreciation rate in high-earning years, so that taxable profits decrease.84

The strength of Vamil and MIA derive from their user-friendly access.85 The application process is digital and simple.86 The technology list that describes eligible technology is clear and updated annually.87 Moreover, both schemes are cost-effective, because government administration costs are low, which has kept the budget to EUR 131 million in 2015.88 General updates to qualifying criteria and the annual update assessment for the technology list are the most significant administrative
costs associated with the programs.\textsuperscript{89} The Dutch system not only encourages companies to invest in environmental technology, but it also stimulates green market innovation by encouraging companies to suggest new technologies for the list.\textsuperscript{90} Acknowledging innovative development of green technology keeps the programs up-to-date and is paramount to their success.

Despite these benefits, the Dutch system is not perfect. The incentive programs naturally benefit larger companies that are able to make substantial investments.\textsuperscript{91} By effectively placing a larger burden on small businesses, the program creates a barrier to meaningful participation in Vamil and MIA.\textsuperscript{92} Smaller companies tend to have thinner profit margins and have a harder time funding projects and waiting out refunds. Residential interests also tend to be ineligible, although a logical next step would be to expand the programs to cover green housing.\textsuperscript{93}

3. \textit{Green Building in Japan}

The Architectural Institute of Japan defines a sustainable building as “one which is designed: [1] to save energy and resources, recycle materials and minimize the emission of toxic substances throughout its life cycle, [2] to harmonize with the local climate, traditions, culture and the surrounding environment, and [3] to be able to sustain and improve quality of human life while maintaining the capacity of the ecosystem at the local and global levels.”\textsuperscript{94} Japan is an island country that imports all fossil fuels, which creates high oil costs and dependence on outside sources.\textsuperscript{95} Accordingly, the Japanese government and private firms have sought to develop sustainable technology that harnesses power from renewable energy sources, including geothermal and wind.\textsuperscript{96}

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{89} Id.
  \item \textsuperscript{90} Id.
  \item \textsuperscript{91} Id.
  \item \textsuperscript{92} Id.
  \item \textsuperscript{93} Id.
  \item \textsuperscript{94} Japan Sustainable Building Database, \textit{Inst. for Building Env’t & Energy Conservation}, http://www.ibec.or.jp/jsbd/ (last visited Mar. 25, 2015); see generally About AII, Architectural Inst. Japan, http://www.aij.or.jp/eng/about/about.html (last visited Mar. 25, 2015). The Architectural Institute of Japan is a nonprofit organization founded in 1886. It has 35,000 members and promotes the development of science, technology, and art in architecture. Id.
  \item \textsuperscript{96} Id.
\end{itemize}
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Environmental tax policy in Japan is focused on reducing carbon emissions. Because buildings are responsible for one third of all carbon emissions globally, Japan uses carbon taxes to indirectly tax buildings. Generally, there are four economic instruments that Japan employs to combat carbon emissions: taxes, subsidies, tradable permits, and deposit-refund systems. Japanese tax expenditures are used to create incentives, exemptions, credits, and deductions that encourage technologies that abate pollution and conserve energy. Indirect subsidies on environmental initiatives are supported by additional tax credits, exemptions, and concessions. The incentives pressure individuals and companies to adopt more energy-efficient practices, which in turn creates a demand for green products and innovation.

There are three mandatory building codes in Japan. First, the Criteria for the Rationalization of Energy use for Buildings established performance and prescriptive energy codes for commercial buildings. "It covers insulation of the building envelope as well as heating, ventilation and air conditioning (HVAC), lighting, water heating, and vertical transport or lifting equipment." For residential buildings or houses, the Design and Construction Guidelines on the Rationalization of Energy Use for Houses includes "insulation of the building; HVAC; water heating; as well as guidance on maintenance and operations." Finally, the Criteria for Clients on the Rationalization of Energy Use for Houses are a mixture of "performance and prescriptive based building energy codes." Compliance with these programs is mandatory for businesses and consumers.

In addition to the mandatory Green Building regulations, there are also voluntary performance programs that stimulate building energy conservation. In 2001, Japan implemented the Comprehensive Assessment System for Building Environmental Efficiency (CASBEE). It is a green building rating system that assesses the environmental efficiency...
of commercial buildings.109 “CASBEE compares environmental quality and performance delivered by the building envelope, against its environmental loading in terms of energy used in construction, and the resources/materials used.”110 The program is voluntary and often is implemented by local governments or trained third parties.111

Measures that stimulate demand for green products and procurement, and the technology verification program, have made Japan a world leader in environmental innovation.112 Japan’s commitment to voluntary programs is not limited to commercial projects. The “Environmentally Symbiotic Housing Model Project[ ] supports installation of ‘environmentally symbiotic facilities,’ including permeable pavement or facilities that utilize natural energy sources, and skeleton infill systems or those that use recycled materials.”113 The Japanese government “subsidizes one third of the costs for implementation of such projects.”114

Japan has an effective mix of mandatory regulations and voluntary programs. Mandatory regulations allow the government to exercise more control over Green Building, while voluntary programs allow consumers to maintain control over choice and preference. Cumulatively, Japan’s Green Building policy reinforces the government’s commitment to sustainable innovation by enabling both residential and commercial development to invest in state-of-the-art technology and materials.

B. THE ROLE OF ENERGY EFFICIENCY POLICY

Governments are driven to secure resource supplies, protect businesses and individuals from rising costs, reduce climate change factors, and support economic growth.115 Investing in energy efficiency is an economic and scalable way to reduce emissions as compared to mass development of large-scale renewable power.116 Several countries offer incentives that make energy efficiency attractive to businesses.117 Some incentives are enhanced capital allowances—schemes aimed at promoting environmental measures.118 Others come in the form of accelerated depreciation—allowing assets to depreciate at a rapid rate, which in-

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109 Id.
110 Id.
111 Id.
113 SHIEL ET AL., supra note 102, at 22.
114 Id.
115 KPMG INT’L COOP., supra note 3, at 11.
116 Id.
117 Id.
118 Id.
Increases reinvestment in new assets. Although the efficacy of such incentives is still being studied, the Netherlands ranks first in the world for energy efficiency, which is implemented through the Energy Investment Allowance (EIA) scheme. Approaches used in other countries include exemptions from property or energy taxes based on energy efficient performance.

1. Energy Efficiency in the United States

The United States and China are the two largest energy consumers in the world, and each individually dwarfs all other countries in energy consumption. Research indicates that the United States could reduce annual energy consumption 23% by 2020 by limiting carbon emissions. In the last few decades, energy efficiency has improved throughout the United States. Since 1980, energy consumption per unit of floor space has decreased over 10% in residential, 21% in commercial, and 41% in industrial sectors. This decrease indicates that technologies in each sector are becoming greener due to innovation and suggests that more efficient innovation could come about with legislative encouragement.

Since the 1970s, Congress has enacted hundreds of tax incentives that encourage desirable behaviors. Incentives are popular for two clear reasons: they lower the burden on taxpayers, and they do not require an annual appropriation. When the federal government’s debt was a less prominent issue, tax incentives were given freely with the hope that they would increase energy efficiency and satisfy voters. Other issues that Congress takes into account include the length of time that a tax credit is honored and long-term costs to the U.S. Treasury. Because the national debt has become such a divisive issue, Congress has

119 Id.
120 Id.
121 Id.
124 Id.
125 Id.
127 Id.
128 Id.
held tax incentives and deductions under a microscope, which could po­
tentially limit the scope of comprehensive environmental reform. Elimination of tax incentives would reduce an effective deterrent to envi­ronmentally destructive behavior.

One way to preserve effective tax incentives is to ensure that credits and deductions are targeted to innovation that goes above and beyond anticipated improvements. “Free riding” occurs when consumers and businesses that would have installed efficiency measures even without an incentive nevertheless qualify for a tax credit. Tax credits implemented in 1978 were not effective in creating substantial consumer savings, because many who qualified for the credit had already installed such measures on their own. In 2005, Congress offered more targeted credits that focused on advanced technology matched with higher incentives. A tax incentive for qualifying energy-efficient appliances was among the most successful credits, and it “led to a permanent transforma­tion of the market.” Conversely, energy efficient window tax credits led to a high volume of free riders, while other incentives had low participa­tion. Therefore, tax credits must be specifically targeted toward cutting-edge technologies in order to minimize free riders and encourage continued innovation.

Barriers to consumer understanding of energy efficiency have also hindered the expansion and extension of some tax credit incentives. Although energy efficiency has become a household term, consumers are generally unaware of how different appliances consume energy, affect the environment, and impact their utility bills. Additionally, consumers are generally unaware of what tax incentives and benefits are applicable to efficient technology purchased. Consumers often believe that energy efficient products are more expensive, based on scrutiny of the initial costs rather than operating costs. Accordingly, if Congress focuses on highly targeted tax incentives and encourages public education, the United States should be able to increase investment in energy efficient solutions across all sectors.

\[129 \text{Id.} \]
\[130 \text{Id. at iii.} \]
\[131 \text{Id.} \]
\[132 \text{Id.} \]
\[133 \text{Id.} \]
\[134 \text{Id.} \]
\[135 \text{Id. at 8–9.} \]
\[136 \text{Id.} \]
\[137 \text{Id.} \]
2. Energy Efficiency in the Netherlands

The combined energy efficiency index of households, transport, and industry in the Netherlands improved 16% from 2000 to 2010.138 Despite this improvement, the Netherlands adopted the National Energy Efficiency Action Plan (NEEAP), which allows industries to reinvest savings in energy efficient technologies.139 By 2016, the program aims to achieve annual savings of 51.2 terawatt-hours from buildings, transportation, and small industry.140 NEEAP provides a 41.5% deduction of investment costs in renewable energy and energy efficient equipment, resulting in a net benefit of about 10% of the total investment.141 Other energy efficiency projects, including Varni! and MIA, further supplement the savings of NEEAP.142

NEEAP saves energy by stimulating investment in renewable energy technologies and energy efficient assets.143 In 2004, companies could deduct 55% of equipment and investments related to renewable energy and conservation from the taxable profit.144 In 2007, the percentage deductible lessened to 44%, but with the lower taxable rate at 25.5%, the NEEAP deduction amounted to 11% of the costs, if the business utilized the full deduction.145 NEEAP significantly reduced energy consumption and carbon emissions by 45% after encouraging Dutch companies to invest EUR 1.5 billion into energy efficiency in 2011.146 NEEAP serves as a successful tax scheme that is still available to Dutch businesses.

3. Energy Efficiency in Japan

Much like the United States, Japan has implemented its energy efficiency goals through legislation. The Energy Conservation Law of 1979

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140 Id. at 2.
141 Id.
142 KPMG INT’L COOP., supra note 3, at 11.
144 Id.
145 Id.
146 KPMG INT’L COOP., supra note 3, at 11.
gave Japanese policymakers an energy efficiency improvement goal of 30% reductions by 2030.\textsuperscript{147} Policy surrounding this goal requires importers and manufacturers to create more energy efficient products.\textsuperscript{148} Electrical appliances and vehicles are at the forefront of this initiative, successfully creating twenty-three products since 1999 and achieving early targets.\textsuperscript{149} While Japan’s energy consumption per capita is about 10% higher than that of the European Union, Japan’s total energy consumption has been decreasing since 2004.\textsuperscript{150} Because of these reductions, Japan is well on its way to improving energy efficiency by 30% in 2030.

Since the 1970s, Japan has utilized several financial incentives to stimulate its energy efficient economy.\textsuperscript{151} One tax incentive program, called the Tax Scheme for Promoting Investment in the Reform of the Energy Demand-Supply Structure, encourages business investment in energy efficient technology.\textsuperscript{152} The incentive provided a special depreciation rate of 30% of the acquisition cost.\textsuperscript{153} For small businesses, the depreciation rate is combined with a 7% deduction for the cost of the acquisition.\textsuperscript{154} The incentive also allows businesses to depreciate 30% of the cost to acquire the technology right away.\textsuperscript{155}

In 2008, the Revised Energy Conservation Act (RECA) introduced sectoral approaches as a domestic regulatory measure.\textsuperscript{156} Sectoral output for an industry, or combination of industries, is measured by the value of a sector’s gross output, minus the value of shipments from one establishment to another within the sector.\textsuperscript{157} Sectoral benchmarks have been implemented for sub-sectors, particularly energy-intensive industries.\textsuperscript{158} This approach allows companies to be ranked by energy efficiency against similar companies, and then medium to long-term targets are established to implement additional efficiency protocols.\textsuperscript{159} RECA resulted


\textsuperscript{148} Id.

\textsuperscript{149} Id.

\textsuperscript{150} Id.

\textsuperscript{151} Id. at 5.

\textsuperscript{152} Id.

\textsuperscript{153} Id.

\textsuperscript{154} Id.

\textsuperscript{155} Id.

\textsuperscript{156} Id.


\textsuperscript{158} ABB, supra note 147, at 5.

\textsuperscript{159} Id.
in general cutbacks of energy across the country that influenced the market to create more efficient products.

III. ARGUMENT

A. THE UNITED STATES SHOULD REDUCE COMPLEXITY BY CREATING A SIMPLIFIED GREEN TAX REGIME INSPIRED BY DUTCH MIA AND VAMIL

One of the main barriers to a successful tax incentive scheme is the complexity of paperwork and other administration. To claim deductions and utilize Green Building programs and energy efficient technology requires paperwork, the complexity of which varies between the United States, Netherlands, and Japan. System complexity matters because it positively or negatively impacts participation by individuals and businesses. In order to guarantee funding and maximize the use of an incentive system, the forms must be simple enough for individuals and businesses to understand, allowing them to navigate the process and actually enroll in the program. To create a successful tax incentive program with high volume participation in the United States, the forms and enrollment process would benefit from the Dutch MIA and Vamil model, where enrollment is simple.

In order to get deductions for Green Building and energy efficient investment, adhering to the IRC and other legal requirements is necessary and often challenging. The Internal Revenue Service recently reported that the IRC is the most serious problem facing taxpayers because its overwhelming complexity extends beyond the comprehension of most people.\(^\text{160}\) In addition, the IRC’s complexity drives some individuals and businesses to cheat on their returns.\(^\text{161}\) In contrast, LEED application and enrollment is more widely available than IRC, simple to complete, and available entirely online.\(^\text{162}\) Like the LEED application, the IRC should be simplified to accommodate a wider audience by eliminating excessive length and complexity.

In the Netherlands, MIA and Vamil are praised for their simple enrollment processes.\(^\text{163}\) Businesses enroll by completing a two-page docu-
ment and are then able to move forward to the Environmental Technologies List, which helps them find the criteria needed to qualify for deductions. The Environmental Technologies List is published online in the Government Gazette for easy access. Suppliers can also use these programs as selling points for businesses to reduce operating costs. Since enrolling in these programs is relatively simple, businesses routinely take advantage of the program’s tax incentives, thereby ensuring the program’s success and sustainability.

In contrast to the simple Dutch process, Japan uses a more universal approach. Japan’s CASBEE manages energy efficiency by acting as a “checklist” for the program. It is couched in academic language rather than concrete terms, including some measures that are abstract and difficult to quantify. This could lead to many attempting to participate, but few completing the form and actually becoming CASBEE-certified. Japan’s system may not translate as an effective approach in the United States, because U.S. consumers and businesses tend to prefer programs that seamlessly integrate an administrative process that is more straightforward and defined. By incorporating the best practices of the Dutch administrative model, and avoiding abstract elements used in Japan, the United States would create a more a more simplified Green Tax regime.

B. A SUCCESSFUL GREEN TAX REGIME IN THE UNITED STATES MUST BE COST-EFFICIENT, CONSIDERING BOTH LIFE-CYCLE COSTS AND LONG-TERM SAVINGS

The cost of implementing environmental tax programs is a pivotal factor in program success. Government costs influence program length, individual and business participation levels, and the ultimate success of the program. Long-term funding allows programs to gain and maintain momentum over a longer period of time. The U.S., Dutch, and Japanese programs differ in funding and whether they remain active or are extended, which means that each program faces unique challenges and difficulties in remaining relevant.

Long-term savings generated by Green Building in the United States have not always been factored into budgetary decisions for reno-

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164 See id. at 9 (providing a list of technologies).
165 Id. at 7.
167 Id.
168 Id.
Efficient appliances and buildings frequently involve a higher up-front cost, but result in substantially lower operating costs over the life of a project. In the past, Congress and the Office of Management and Budget purported to promote long-term cost policy, but in practice, they pressured agencies to reduce initial development costs. This caused agencies to focus on upfront costs, and resulted in missed opportunities to invest in green technologies. Since then, rather than focusing on the initial cost of construction, developers increasingly account for life-cycle costs, which calculate savings over thirty to a hundred years. As the United States normalizes the life-cycle costs approach, determinations and decisions will greatly improve the success of Green Building programs.

In the Netherlands, incentives are specific because they support only the capital purchase, which includes the purchase, assembly, consultation, and adaptation of new green components. In 2015, the Netherlands budgeted EUR 131 million to spend on MIA and Vamil. Conversely, in Japan, tax revenues that go toward providing green programs come from penalties on carbon and other government funds specifically earmarked for green innovation. The cost of implementing a program is one of the most important factors that a government considers. Only a few of the possible funding avenues have been illustrated here. The United States should have a cost-effective program that allows participation to thrive without harming the economy or bankrupting the government. By increasingly prioritizing life-cycle costs and long-term savings, the United States will better ensure that tax incentives become a staple of the environmental economy.

C. A SUCCESSFUL GREEN TAX REGIME IN THE UNITED STATES SHOULD TAKE CULTURE INTO ACCOUNT AND TAILOR NEW POLICIES TO THE AMERICAN PREFERENCE FOR SEAMLESS INTEGRATION

The culture of a country affects the acceptance of, utilization of, and compliance with tax programs. Individual tax compliance is also influ-

170 Id.
171 Id.
172 Id.
174 Id. at 5-6.
175 Cummings et al., supra note 4, at 4.
enced by government benefits that include public goods and services. Each of the countries discussed in this Comment has a different attitude toward environmental taxes and innovation based on its unique history and culture. Japan and the Netherlands are similar because they are both small nations, each ruled by a unitary government and possessing limited resources. Conversely, the United States is a large, energy-rich nation, comprising fifty sovereign states, each exercising considerable control over its individual environmental regulations.

Harmony, also known as Wa, is the most fundamental concept in Japanese culture. Japanese citizens think of their homogeneous culture as unique, and find value in uniformity. It follows that policies used to create Green Building innovation and energy efficient products are centered on environmentally friendly products that contribute to the productivity and harmony of all users. In addition, environmental awareness is more apparent in Japan because of its recent energy crises. Schoolchildren in Japan are involved in government programs to create sustainability and resource efficiency, which instills environmentally responsible habits from a young age.

Similarly, a strong sense of national identity drives the homogenous culture of the Netherlands. Rising sea levels are a looming threat to Dutch commerce and livelihood, which has led to a common national interest in creating a sustainable global environment. The government, business owners, corporations, and consumers work together to create favorable economic policies paired with innovation that aids environmental reform.
The Netherlands and Japan are motivated by different considerations than the United States, given their smaller geographical areas and high population density. Although an environmental disaster in the United States is unlikely to affect the whole population, a similar event in a smaller country like Japan or the Netherlands would devastate the entire country. Environmental tax and policy decisions are also affected and influenced by political differences between the fifty United States. Although Congress has enacted legislation pertaining to environmental laws and taxes, nationwide feasibility, enforcement and implementation are often difficult.

IV. Conclusion

Through this international analysis, three distinct patterns emerge. First, Japan is a homogeneous nation that values uniform regulation and enforcement. Japan enforces penalties for noncompliance and encourages social responsibility. Conversely, U.S. policies evolve from the cultural understanding that most industries respond better to rewards for compliance rather than heavy-handed regulation and penalties. The Dutch system bridges the gap between Japan and the U.S. cultural interests, employing both incentives and penalties to regulate industrial and commercial behavior. Although the Netherlands is a homogeneous nation, it also prides itself on diverse business ventures and creative problem-solving. Whether that balance remains intact could depend on future growth in the Dutch economy.

An ideal environmental tax regime for the United States should consist of environmental tax incentives catering to consumers and corporations. Utilities, appliance makers, contractors, and designers should publicize the incentives, and there should be systemic outreach ensuring that U.S. citizens are aware of them. The incentives must have easy enrollment for both consumers and corporations, to optimize participation and make the incentives worthwhile in terms of government effort. This method will be successful because it will be cost-effective, simple to participate in, and narrowly tailored to U.S. culture. In addition, the value of behavioral change as a result of environmental tax credits and incentives vastly outweighs the effect of punitive taxes across the board.

Green Building and energy efficient innovation should receive attention from policymakers and lawmakers in the United States and abroad. Energy efficient products for both manufacturing and consumers would also make a lasting impact on indirect emissions and the daily lives of consumers by reducing energy cost. Tax incentives and credits are meaningful mechanisms for imposing environmental regulations and
encouraging environmentally friendly behaviors. Carefully constructed and implemented incentives and credits can boost the participation in programs that help curb carbon emissions and also encourage a more environmentally conscious culture.