GROUNDS FOR GREENHOUSE GAS EMISSION TRADING IN AGRICULTURE AND POTENTIAL CONSTITUTIONAL IMPLICATIONS

I. INTRODUCTION

Global warming is quickly becoming the single largest environmental dilemma facing California, the United States, and even the world.[1] California is taking significant steps to counter this threat.[2] On August 31, 2006 the California Legislature passed Assembly Bill 32 ("AB 32"), the California Global Warming Solutions Act of 2006.[3] It has been considered landmark legislation because it created the first economy-wide cap on global warming emissions in the nation.[4] California Governor Arnold Schwarzenegger signed AB 32 into law on September 27, 2006.[5] AB 32 is currently the most significant piece of legislation that tackles the issue of global climate change in the nation because it requires statewide greenhouse gas[6] ("GHG") emissions be reduced to 1990 levels by the year 2020.[7] AB 32 does not identify a method through which the state will accomplish this goal; however, the Act does require California Air Resources Board ("CARB") to "adopt rules and regulations in an open public process to achieve the maximum technologically feasible and

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[1] Erwin Chemerinsky, Brigham Daniels, Brettny Hardy, Tim Profeta, Christopher H. Schroeder, & Neil S. Siegel, California, *Climate Change, and the Constitution*, 37 ELR 10653, 10653 (2007).

[2] *Id.*

[3] California Enacts Nation's Toughest Global Warming Bill, http://www.uc-susa.ord/news/press_release/california-enacts-nations.html (last visited Dec. 17, 2008).

[4] *Id.*

[5] CAL. HEALTH & SAFETY CODE §§38501 – 38599 (West 2006).

[6] "Greenhouse Gases (GHGs): Greenhouse gases include a wide variety of gases that trap heat near the Earth's surface, slowing its escape into space. Greenhouse gases include carbon dioxide, methane, nitrous oxide, and water vapor and other gases. While greenhouse gases occur naturally in the atmosphere, human activities also result in additional greenhouse gas emissions. Humans have also manufactured some gaseous compounds not found in nature that also slow the release of radiant energy into space." MARKET ADVISORY COMMITTEE, RECOMMENDATIONS FOR DESIGNING A GREENHOUSE GAS CAP-AND-TRADE SYSTEM FOR CALIFORNIA 93 (2007).

[7] CAL. HEALTH & SAFETY CODE §§38501 – 38599 (West 2006).

cost-effective GHG reductions."[8] While AB 32 does not require CARB to enact a cap-and-trade system, it specifically allows for one[9] and in conjunction with Executive Order S-20-06, which arguably requires a cap-and-trade system,[10] it appears that there is no doubt that a cap-and-trade system is in California's future. There are two questions which remain. The first is what industries will be required to participate in the cap-and-trade system. More specifically, should the agricultural industry be included in the cap-and-trade system? The second is whether AB 32 can survive a dormant Commerce Clause challenge.

This Comment discusses the landmark legislation that brought about AB 32, The California Global Warming Solutions Act of 2006, signed by Governor Schwarzenegger on August 31, 2006, and examines whether or not the cap-and-trade system allowable under AB 32, and arguably required by Executive Order S-20-06, should be applicable to the agricultural industry. This Comment also addresses the implications of applying the cap-and-trade system to the agricultural industry and ultimately recommends that agriculture should be included. Finally, this Comment analyzes whether AB 32 will be able to survive a dormant Commerce Clause challenge.

II. ASSEMBLY BILL 32: CALIFORNIA'S GLOBAL WARMING SOLUTIONS ACT OF 2006

A. Legislative History of AB 32

On June 1, 2005, Governor Schwarzenegger signed Executive Order S-3-05 which established "the following GHG reductions targets for California: by 2010, reduce emissions to the level in 2000; by 2020, reduce emissions to the level in 1990; and by 2050, reduce emissions to over 80% below the level in 1990."[11] While the Executive Order set targets, it failed to specify how to achieve these objectives.[12] The Climate Action Team ("CAT") was charged with generating the report on the implementation of the Governor's emission targets.[13] The CAT report mentioned a cap-and-trade system;[14] however, it did not make it a pri-

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[8] *Id.*

[9] *Id.*

[10] Cal. Exec. Order No. S-20-06 (Oct. 18, 2006), *available at* http://gov.ca.gov/executive-order/4484/.

[11] W. MICHAEL HANEMANN, HOW CALIFORNIA CAME TO PASS AB 32, THE GLOBAL WARMING SOLUTIONS ACT OF 2006 16 (2007).

[12] *Id.*

[13] *Id.* at 17.

[14] *Id.* at 19.

mary recommendation.[15] The report's two key recommendations were to require mandatory reporting of GHG emissions by major industrial sources, and adding a "public goods" surcharge to gasoline.[16] Ultimately, when the Governor's office released the final Report, the public goods surcharge was missing, but the compulsory reporting of GHG emissions was still in place.[17] Additionally, the Report had been amended to include a multi-sector market-based system by means of economic incentives.[18]

The Governor's office spent nearly nine weeks reviewing the final CAT Report, which was finally released on Sunday, April 2, 2006.[19] This was a strategic move on the part of the Governor because Democrats had planned a press conference for April 3, 2006, to reveal new legislation to make the voluntary emission reduction target for 2020 compulsory.[20] The Democrats and the Governor were officially in competition with regard to climate change policy.[21] The Democrats challenged the Governor with AB 32, a bill which was originally introduced by California Assemblywoman Fran Pavley in December 2004 and was designed to revise some of the functions and duties of California Climate Action Registry.[22] The bill was modified and called for CARB to implement regulations by January 2009 for: "(1) the mandatory monitoring and reporting of GHG emissions from major sources, and (2) for reducing statewide GHG emissions to their level in 1990 by 2020."[23] By this time, California Assembly Speaker Fabian Nunez was supporting Pavley's bill so much that he became a co-sponsor of the bill.[24]

While the Legislature was considering AB 32 in the summer of 2006, two major problems plagued the bill.[25] The first issue was critics of the bill contended that global warming was not a local problem and should, therefore, be regulated by the federal government.[26] AB 32 supporters contended that, as the twelfth largest producer of GHG emissions

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[15] *Id.*
[16] *Id.*
[17] *Id.*
[18] *Id.*
[19] *Id.*
[20] *Id.* This is especially noteworthy considering the Governor had just set the 2020 emission target in June.
[21] *Id.*
[22] *Id.* at 19-20
[23] *Id.* at 20.
[24] *Id.*
[25] *Id.*
[26] *Id.*

worldwide, California needed to act.[27] Additionally, supporters felt that California was in the position to influence both national and international standards regulating GHG emissions and energy efficiency.[28]

The second conflict surrounding the bill was the battle between the Administration and the Legislature over provisions that the Administration wanted included in AB 32.[29] Without the desired provisions, the Governor would not sign the bill.[30] Speaker Nunez's rejection of the provisions led to an impasse.[31] The first of the three provisions at the heart of the standstill was which agency would be responsible for achieving the emissions cap established by AB 32.[32] The second was the potential inclusion of emission trading.[33] The final issue was whether or not a "safety valve" would be included.[34]

The first issue of which agency would be responsible for achieving the goals of AB 32 was a problem created by the fact that AB 32 left the specifics of how the goal was going to be accomplished up to an entity in the Executive Branch.[35] Governor Schwarzenegger wanted the CAT to be in charge of enforcing AB 32.[36] However, the Democrats wanted CARB because they regarded it as more independent.[37] The second issue of whether trading of the emissions should be allowed was opposed by the Democrats but supported by the Governor.[38] Governor Schwarzenegger was concerned about the potential harmful economic consequences of AB 32.[39] The third issue, whether or not to include a safety value, arose because the Governor wanted one to be included so that the cap could be adjusted if detrimental economic effects occurred.[40]

The standoff between Governor Schwarzenegger and the Democrats persisted until the very last minute, making the passing of AB 32 very dramatic.[41] The 2005-2006 Legislative Session ended on August 31 and

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[27] *Id.*
[28] *Id.*
[29] *Id.*
[30] *Id.*
[31] *Id.*
[32] *Id.* at 20-21.
[33] *Id.* at 21.
[34] *Id.*
[35] *Id.*
[36] *Id.*
[37] *Id.*
[38] *Id.*
[39] *Id.*
[40] *Id.*
[41] *Id.*

any bill not passed by that date would lapse.[42] An agreement was not reached until the day before the bill would lapse.[43] The final compromise placed CARB in charge of implementing the bill;[44] the language stated that trading "may" be allowed;[45] and a safety valve was included.[46] The bill was finally passed with only 30 hours of the Legislation Session left.[47]

B. Executive Order S-20-06 Requires a Cap-and-Trade System and Arguably Requires that Agriculture be Included

On October 17, 2006, Governor Schwarzenegger signed Executive Order S-20-06, which was intended to clarify AB 32.[48] The Order gives the Governor authority over the development of the regulations outlined in AB 32 and essentially guarantees an emissions trading system.[49] The Governor's influence is expanded through the Executive Order because it proscribes the "Secretary for Environmental Protection shall continue to be the statewide leader for California's greenhouse gas emission reduction programs."[50]

Additionally, the Order authorizes the Secretary to make recommendations to CARB through a "Market Advisory Committee of national and international experts."[51] The Order further calls for the development of a "comprehensive market-based compliance program" that eventually "permits trading with the European Union [and] the Regional Greenhouse Gas Initiative."[52] It appears that Executive Order S-20-06 clarifies the fact that a cap-and-trade system *allowable* under AB 32 *will be included* in CARB's recommendations.

The majority of the Executive Order is devoted to clarifying the requirement, as opposed to the possibility, of a cap-and-trade system for

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[42] *Id.*
[43] *Id.*
[44] *Id.*
[45] *Id.*
[46] *Id.*
[47] *Id.*
[48] Cal. Exec. Order No. S-20-06 (Oct. 18, 2006), *available at* http://gov. ca.gov/executive-order/4484/. Justin Kirk, Comment, *Creating an Emissions Trading System for Greenhouse Gases: Recommendations to the California Resources Board*, 26 VA. ENVTL. L.J. 547, 556 (2008).
[49] Cal. Exec. Order No. S-20-06 (Oct. 18, 2006), *available at* http://gov.ca.gov/executive-order/4484/. Kirk, *supra* note 48, at 556.
[50] Cal. Exec. Order No. S-20-06 (Oct. 18, 2006), *available at* http://gov.ca.gov/executive-order/4484/.
[51] *Id.*
[52] *Id.*

emissions. A small portion of the executive order, less than one line, sheds some light on whether or not the agricultural sector is to be included in AB 32 and the cap-and-trade system.[53] The Order requires the development of "reporting and reduction protocols, including reporting and reduction protocols for local government and *agriculture*...."[54] However, this sentence does not clarify as much as it convolutes. Months were spent trying to reach an agreement between the Governor and the Legislature. A standoff occurred for weeks;[55] not once was the issue of whether to include the agricultural sector in AB 32 ever discussed. Despite this, because Executive Order S-20-06 was intended to clarify AB 32, this Comment asserts that the section which specifically requires the "reporting and reduction protocols for local government and agriculture,"[56] is very specific and was intentionally included in the Order and must be adhered to.

III. THE CAP-AND-TRADE SYSTEM

Increased levels of GHGs in the atmosphere have caused global temperatures to rise.[57] There are two generally accepted approaches that can be implemented to reduce the build-up of GHGs in the atmosphere.[58] The first approach is to reduce GHG emissions.[59] The second approach is to soak up, or sequester, carbon dioxide ("CO_2") into the terrestrial processes.[60] The second approach, absorption or sequestration, is especially compatible with the agricultural sector because of the various agricultural processes and plants which absorb the GHGs. These two approaches can work together and actually complement one another in a cap-and-trade system.

Countries around the world have implemented cap-and-trade regulatory systems in order to reduce the level of emissions produced.[61] There are two main reasons why this approach is attractive: first, its ability to put an exact and identifiable limit on aggregate emissions and second, its

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[53] *Id.*

[54] *Id.*

[55] HANEMANN, *supra* note 11, at 21.

[56] Cal. Exec. Order No. S-20-06 (Oct. 18, 2006), *available at* http://gov.ca.gov/executive-order/4484/.

[57] EMISSION REDUCTION TRADING PROTOCOL TEAM, A BASIS FOR GREENHOUSE GAS TRADING IN AGRICULTURE 2 (2002).

[58] *Id.*

[59] *Id.*

[60] *Id.* Examples of terrestrial processes include soils and plants.

[61] MARKET ADVISORY COMMITTEE, *supra* note 6, at 5.

potential to realize the emissions-reduction goal at a lower cost than would otherwise be possible.[62]

Four fundamental elements comprise a cap-and-trade system: "the cap, the allowances, trading, and monitoring/enforcement."[63] The cap places a compulsory limit on the total emissions that can be produced by a covered source during a specified period of time.[64] Emission allowances authorize a covered source to emit a specified quantity of the pollutant being regulated.[65] Trading occurs when covered sources under the cap-and-trade program are allowed to buy from and sell their allowances to other covered entities.[66] Monitoring and enforcement ensures that upon the completion of each compliance period, the participating entities in the cap-and-trade system are obligated to surrender allowances equal to the GHG emissions they produced.[67]

The ability to trade allowances yields cost-savings because it promotes emissions reductions from covered sources which are able to achieve the reductions most economically.[68] It also allows those entities to sell their spare allowances at a profit.[69] Costs incurred by the facilities covered under the cap-and-trade program are reduced through the trading of emissions allowances.[70] Thus, the economic impact on workers, consumers, and taxpayers are also reduced.[71] When designing the cap-and-trade system it is imperative that we learn from the past successes and failures of other market based systems.

IV. LESSONS TO LEARN FROM – PAST SUCCESS AND FAILURE

A. The Regional Clean Air Incentives Market

The first urban smog trading program in the world was California's Regional Clean Air Incentives Market ("RECLAIM").[72] States and local air districts were authorized by the 1990 Clean Air Act Amendments to develop economic incentive programs to decrease air pollutants.[73] In an

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[62] *Id.*
[63] *Id.*
[64] *Id.* at 6.
[65] *Id.*
[66] *Id.*
[67] *Id.*
[68] *Id.* at 5.
[69] *Id.*
[70] *Id.*
[71] *Id.*
[72] Kirk, *supra* note 48, at 557.
[73] *Id.*

effort to reduce emissions, RECLAIM was adopted in 1993 by the South Coast Air Quality Management District.[74] In spite of high expectations, RECLAIM is generally considered to be a failure[75] for the following reasons: "lack of adequate banking provisions;"[76] it "resulted in the creation of toxic hot-spots by concentrating pollution in communities surrounding major sources of pollution;"[77] and "an overly generous pool of credits."[78]

B. European Union Emissions Trading Scheme

The first large scale GHG emissions trading system in the world is the European Union Emissions Trading Scheme ("EU-ETS").[79] Modernly, the EU-ETS monitors "six key industrial sectors' energy activities, including electricity and heat-generating plants, which produce approximately half of the total GHG emissions from the participating countries."[80] It would be premature to declare the EU-ETS a success or failure.[81] However, a recent study established it has achieved three significant accomplishments.[82] First, it lowered GHG emissions more than anticipated.[83] Secondly, it spurred a vigorously operating credit market.[84] Finally, it led to a solid rise in credit trading.[85] Allowances in excess of 322 million tons of CO_2 equivalents, valued at $8.2 billion, were traded in 2005.[86] With this much money already in this new and developing market, emission trading appears to be good for business, agriculture, and the economy as a whole.

While it might be considered hasty to officially declare the EU-ETS a victory, it appears to be on the path to success. The EU-ETS focuses on the industrial sectors and electricity generation.[87] However, the program could be more successful if it focused on additional GHG emitters. In

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[74] *Id.*
[75] *Id.* at 558.
[76] *Id.*
[77] *Id.*
[78] *Id.*
[79] *Id.* at 560.
[80] *Id.*
[81] *Id.*
[82] *Id.*
[83] *Id.*
[84] *Id.*
[85] *Id.*
[86] *Id.*
[87] *Id.*

the fight to reduce global warming, even the modest contributors cannot be ignored.[88]

C. Other Systems

The Environmental Protection Agency developed four limited emissions trading programs[89] "to increase flexibility and reduce the costs of compliance with traditional command-and-control requirements under the Clean Air Act."[90] Three major factors resulted in minimal trades and limited financial savings.[91] First, before each credit could be traded it had to be pre-approved by the government based on comprehensive criteria.[92] Secondly, "even approved credits could not be effectively traded as commodities because the expected increase in emissions for the source using the credit had to be less then the emissions reduction for the source providing the credit."[93] Finally, one of the programs was strained by a prolonged administrative process discouraging its use.[94]

The Acid Rain Trading Program ("ARTP") is the biggest and most triumphant experiment with emissions trading in the United States.[95] The ARTP is a cap-and-trade system created by Title IV of the 1990 Clean Air Act Amendments,[96] which is designed to reduce sulfur dioxide ("SO_2") emissions.[97] Under the program, total SO_2 emissions dropped over three million tons between 1994 and 2001.[98] The design choices of this program not only led to its success, but also dramatically improved perceptions of cap-and-trade systems.[99]

Preceding the implementation of AB 32, the most noteworthy GHG emissions trading system in the United States was the Regional Greenhouse Gas Initiative ("RGGI"). In fact, the RGGI, which is a coalition of seven east coast states, is the *only* existing compulsory cap on GHG emissions outside of California.[100] Unfortunately, for the purpose of this Comment, little can be learned from the RGGI because its sole focus is

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[88] Dave Owen, *Climate Change and Environmental Assessment Law*, 33 COLUM. J. ENVTL. L. 57, 91 (2008).

[89] Kirk, *supra* note 48, at 562.

[90] *Id.*

[91] *Id.*

[92] *Id.*

[93] *Id.*

[94] *Id.*

[95] *Id.* at 563.

[96] *Id.*

[97] *Id.*

[98] *Id.*

[99] *Id.*

[100] HANEMANN, *supra* note 11, at 2.

on emissions from electric power generation and the RGGI cap is far less strict than AB 32.[101] However, it is important to remember that EO S-20-06 specifically permits trading with the RGGI.[102] This is noteworthy because the RGGI is the only existing compulsory cap on GHG emissions outside of California and AB 32 is the first economy-wide cap on global warming emissions in the nation.[103] If these two programs can find a way to work together it could lead to even greater success for each program. It is not enough to just learn from the past successes and failures of other market based systems. The implications of applying the cap-and-trade system to the agricultural industry must also be considered.

V. IMPLICATIONS OF APPLYING THE CAP-AND-TRADE SYSTEM TO THE AGRICULTURAL INDUSTRY

A. Agriculture is the Fourth Largest GHG Emitter in California

From 1990 to 2004, in California the total gross GHG emissions attributed to agriculture[104] was 8.3 percent.[105] This made the agricultural sector the fourth largest GHG emitter in California.[106] The agricultural and forestry sectors produce GHG emission "composed mostly of nitrous oxide from agricultural soil management, CO_2 from forestry practice changes, methane from enteric fermentation,[107] and methane and nitrous oxide from manure management."[108] These emissions experienced both increases and decreases from 1990 to 2004, with a net increase of 23.8 percent.[109] Despite the fact that agriculture might appear to be only a

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[101] *Id.*

[102] Cal. Exec. Order No. S-20-06 (Oct. 18, 2006), *available at* http://gov.ca.gov/executive-order/4484/.

[103] California Enacts Nation's Toughest Global Warming Bill, *supra* note 3.

[104] "Agriculture" includes forestry. CALIFORNIA ENERGY COMMISSION, INVENTORY OF CALIFORNIA GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2004 10 (2006)

[105] *Id.* at 8.

[106] *Id.*

[107] Enteric Fermentation is the fermentation that takes place in the digestive system of animals. In particular ruminant animals (cattle, buffalo, sheep, goats, and camels) have large fore-stomach, or rumen within which microbial fermentation breaks down food into soluble products that can be utilized by the animal. Methane is produced in the rumen by bacteria as a by-product of the fermentation process. This CH_4 is exhaled or belched by the animal and accounts for the majority of emissions from ruminants. Methane also is produced in the large intestines of ruminants and is expelled. AP 42, FIFTH EDITION, VOLUME I, CHAPTER 14: GREENHOUSE GAS BIOGENIC SOURCES (1998), *available at* http://www.epa.gov/ttn/chief/ap42/ch14/.

[108] CALIFORNIA ENERGY COMMISSION, *supra* note 104, at 10-11.

[109] *Id.* at 11.

small contributor in the overall GHG emissions, it is still the fourth largest contributor in the state. It must be held accountable and therefore must be a participant in the cap-and-trade system introduced by AB 32.

B. Pros of Including Agriculture in the Cap-And-Trade System

Market based incentives[110] are extensively favored by economists because they are more economically efficient than regulatory approaches.[111] A carbon tax on CO_2 under a cap-and-trade system will increase costs of fossil fuel and cause an increase in less emission intensive fuels such as renewable forms of energy.[112] Rather than dictating a "mandatory blending rate, portfolio standard, or production target" an incentive-based program allows the market to determine whether renewable fuel should be used and if so, when it should be used and how much should be used.[113] A system of tradable emission credits creates "an opportunity for producers in the agricultural sector to remove and reduce farm GHG emission and generate credits (or offsets) that can be sold to sectors that face higher GHG control costs."[114]

A common fear of including the agricultural sector in the cap-and-trade system is that the price of agricultural products, including food, might increase causing American families to pay more for the same products. While this is a valid concern, it is not necessary. A significant portion of the goods and services consumed in California which are quite GHG-intensive[115] are produced out of state;[116] conversely, a considerable portion of the goods and services consumed in California which are GHG-unintensive[117] are produced within the state.[118] Consequently, a cap-and-trade limit which causes the price of the GHG emissions to increase will cause consumption to be redirected away from imported production and towards domestic production. This will not only lower GHG emissions but it will also enhance the domestic economy.[119]

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[110] Market based incentives including carbon taxes or cap-and-trade systems.

[111] Gilbert E. Metcalf & John M. Reilly, *Policy Options for Controlling Greenhouse Gas Emissions: Implications for Agriculture*, CHOICES, 1st Quarter 2008, at 34.

[112] *Id.*

[113] *Id.*

[114] EMISSION REDUCTION TRADING PROTOCOL TEAM, *supra* note 57, at 2.

[115] GHG-intensive means that the good, service, or process creates a significant level of GHGs.

[116] HANEMANN, *supra* note 11, at 18.

[117] GHG-unintensive means that the good, services, or process creates a minimal level of GHGs.

[118] HANEMANN, *supra* note 11, at 18.

[119] *Id.*

VI. RECOMMENDATIONS

Other GHG emission reduction programs came about before the cap-and-trade system of AB 32. However, until now none of the programs have been directed at agriculture. It is helpful to look to these previous programs when designing and implementing a GHG emission reduction program for California.

One of the most important design features is whether to impose the system upstream or downstream.[120] In the energy industry, examples of upstream application include: coal mines, natural gas, oil wells, refiners, or important points for energy.[121] On the other hand, downstream refers to the consumers of fossil fuels.[122] Either option would encourage the reduction of energy use and lower associated emissions. For agriculture and land-use, upstream would mean applying the tax or cap-and-trade system on the land owner.[123] In the agricultural sector, downstream refers to the consumers of the agricultural products.[124]

It is also essential to make the cap-and-trade system comprehensive.[125] This requires the cap-and-trade system to include as many GHG producing sources as possible.[126] Numerous studies have established that the cost of an abatement program is significantly reduced when the program is comprehensive.[127] In addition to reducing the cost of the program, being comprehensive is also essential to be more effective in reducing GHG emissions. Including as many GHG emitters as possible will hold more sources accountable. This will not only reduce the cost of the program, but also cause a greater overall reduction in GHG emissions.

Where agriculture and land use are concerned, a troublesome feature of the proposed legislation is the reluctance to include land use emissions and other GHG emissions from agriculture on the same basis as other emission sources.[128] This is troublesome because all sectors producing GHG emissions should face consequences and pay the price for those emissions.[129] There is proposed legislation which includes crediting systems. This is a step in the right direction; however, it does not actually fully bring the agricultural emissions into a cap-and-trade or tax system

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[120] Metcalf, *supra* note 111, at 34.
[121] *Id.*
[122] *Id.*
[123] *Id.*
[124] *Id.*
[125] *Id.*
[126] *Id.*
[127] *Id.*
[128] *Id.* at 36
[129] *Id.*

in the same way as other emitting activities.[130] Such a system allows landowners to have their cake and eat it too. It would allow landowners to receive credits if they were able to demonstrate abatement, but there are no consequences if they merely choose to continue emitting.[131]

Energy emissions are produced by the agriculture sector and those emissions will be included in an energy cap-and-trade system.[132] However, agriculture also produces methane from livestock and rice.[133] It also produces nitrous oxide from fertilizer use.[134] Bringing all, or at least large sources, of GHG emitters under a cap-and-trade system would treat them consistently with energy related emissions.[135]

Methane emissions created by enteric fermentation accounted for 112 million metric tons of CO_2 equivalent emissions in 2005.[136] This was about twenty percent of total emissions attributable to agriculture.[137] Large beef and dairy industries produce the majority of these emissions.[138] If agriculture is to be treated consistent with energy, there should be a tax per head of cattle based on average emissions.[139] Modification of an animal's diet can alter emissions and the government could give credits for emission reductions caused by such dietary modifications.[140]

Agriculture and land use have the potential to serve as a source[141] of GHG emissions or a sink[142] for GHG emissions.[143] Approaches that are applied to other industries such as the industrial sector or energy sector should also be applied to the agriculture sector.[144] It should be mandatory for landowners to inventory carbon stock changes.[145] This would allow

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[130] *Id.*
[131] *Id.*
[132] *Id.*
[133] *Id.*
[134] *Id.*
[135] *Id.*
[136] *Id.*
[137] *Id.*
[138] *Id.*
[139] *Id.*
[140] *Id.*
[141] Source: Any process or activity that results in the net release to greenhouse gases, aerosols, or precursors of greenhouse gases into the atmosphere. MARKET ADVISORY COMMITTEE, *supra* note 6, at 95.
[142] Sink (or carbon sink): A naturally occurring process, activity, or mechanism that removes a GHG from the atmosphere. MARKET ADVISORY COMMITTEE, *supra* note 6, at 95.
[143] Metcalf, *supra* note 111, at 36.
[144] *Id.*
[145] *Id.*

landowners to sell the credits in the market.[146] Such a program can be restricted to agriculture landowners above a specified threshold in order to capture sources that are significant GHG emitters.[147] In order for small GHG emitters to circumvent excessive management and high monitoring costs, agricultural GHG sources which are low GHG emitters, would be allowed to opt into the cap-and-trade system.[148] Such an approach is analogous with the approach that is proposed to deal with carbon capture and sequestration produced by power plants. It will provide consistent treatment across all sectors of emissions.

VII. WILL AB 32 SURVIVE A DORMANT COMMERCE CLAUSE CHALLENGE?

Now that it has been established that a cap-and-trade system is required and the benefits that it will bring have been established, there could be a potential issue preventing such a program from being implemented. California's authority to deal with particular issues and the tactics it can implement to further the interests of its citizens is restricted by the US Constitution.[149] Due to the fact that the benefits and burdens of AB 32 "have the potential to extend beyond state lines," it is likely that questions will arise regarding whether or not California has overstepped or will overstep its boundaries.[150] The cap-and-trade system that will likely be implemented under AB 32 may "implicate interstate commerce and, hence, the Constitution's dormant Commerce Clause."[151] Particularly, the dormant Commerce Clause becomes an issue when the state makes an effort to tackle the "leakage" issue.[152] Leakage is a problem that occurs when entities in California, which are regulated under the cap-and-trade program, relocate outside the state so that they can avoid being regulated.[153] California must be cognizant of the dormant Commerce Clause while combating leakage.[154] If AB 32 cannot survive a dormant Commerce Clause challenge, it will be deemed unconstitutional and therefore void.

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[146] *Id.*
[147] *Id.*
[148] *Id.*
[149] Chemerinksy, *supra* note 1, at 10653
[150] *Id.* at 10654.
[151] *Id.*
[152] *Id.*
[153] *Id.*
[154] *Id.*

The purpose behind AB 32's cap-and-trade system is simple: "to reduce [California's] contribution to GHGs in the global atmosphere."[155] Even though the purpose of AB 32 is simple, California is confronted with many considerable obstacles in constructing an effective cap-and-trade system.[156] One large issue is the fact that those outside of the state could counteract any progress AB 32 achieves.[157] To guarantee that the reductions that AB 32 will achieve within California result in an overall reduction of GHGs, California "will need to design a program that takes precautions to guarantee that gains from such reductions are not lost through GHG increases elsewhere."[158]

A serious problem facing California's cap-and-trade system is leakage.[159] The main objective of AB 32 is to reduce California's impact on global warming.[160] However, if the reductions in GHGs that California is able to achieve are simply relocated to other states, then leakage will largely counteract California's efforts.[161] Anti-leakage measures are necessary "to plug the holes" in AB 32's cap-and-trade system, thus preventing the benefits of the program from being wasted.[162] It is important that these anti-leakage measures be "applied evenhandedly and without discriminatory effects on economic activity outside the state."[163]

The U.S. Constitution expressly grants the U.S. Congress the power to regulate interstate commerce.[164] However, "[t]he dormant Commerce Clause is a constitutional principle not actually mentioned in the text of the Constitution" but rather "is an unwritten logical extension of Congress' power that prevents states from usurping Congress' authority to regulate interstate commerce."[165] The principle behind the dormant Commerce Clause is the idea that states are not allowed to discriminate against other states "simply to give a competitive advantage to in-state businesses."[166]

When courts are reviewing a dormant Commerce Clause challenge, they first look to whether the law discriminates against out-of-state busi-

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[155] *Id.*
[156] *Id.*
[157] *Id.*
[158] *Id.*
[159] *Id.* at 10655.
[160] *Id.*
[161] *Id.*
[162] *Id.*
[163] *Id.*
[164] U.S. CONST. art. 1, § 8, cl. 3.
[165] Chemerinksy, *supra* note 1, at 10656
[166] Granholm v. Heald, 544 U.S. 460, 472 (2005).

nesses.[167] If a regulation does discriminate against out-of-state commerce then the courts will apply the strict scrutiny standard of review.[168] If the state's regulation does not discriminate, but rather operates evenhandedly, it is still subject to the dormant Commerce Clause; however, the court will apply a balancing test often referred to as the *Pike* balancing test.[169]

The first issue that a court must tackle in a dormant Commerce Clause analysis is the appropriate level of scrutiny to apply.[170] In order to determine the appropriate level of scrutiny the court will first determine if the state regulation is discriminatory.[171] Discriminatory regulations come in two forms: (1) facially discriminatory laws; and (2) facially neutral laws.[172] Laws that differentiate between in-state entities and out-of-state entities in the language or terms of the law are facially discriminatory.[173] On the other hand, facially neutral laws do not differentiate between in-state and out-of-state entities in their language or terms, but rather ultimately have discriminatory effects.[174]

If a law is found to be facially neutral, the court will review the law based on its impacts on interstate commerce.[175] If a facially neutral law does not create barriers to trade, prohibit the flow or increase the costs of interstate commerce, or distinguish between in-state entities and out-of-state entities, courts will deem the law nondiscriminatory.[176] If a law has been found to be discriminatory, in order for it to not fail under the dormant Commerce Clause the court must determine that "the law has a legitimate and substantial purpose and that there are no less discriminatory" alternatives that can accomplish the same purpose.[177] The court will evaluate both prongs; however, the burden of establishing that there are no less discriminatory alternatives is especially difficult.[178] If the court determines that there is a potentially less discriminatory alternative for the state to accomplish its goal, then the court will require the state to

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[167] Chemerinksy, *supra* note 1, at 10656
[168] *Id.*
[169] Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).
[170] Chemerinksy, *supra* note 1, at 10657
[171] *Id.*
[172] Hunt v. Wash. State Apple Adver. Comm'n, 432 U.S. 333, 350-53 (1977).
[173] Chemerinksy, *supra* note 1, at 10657
[174] *Id.*
[175] *Hunt*, 432 U.S. at 352.
[176] *See id.*
[177] Chemerinksy, *supra* note 1, at 10657
[178] *See*, e.g., Hughes v. Oklahoma, 441 U.S. 322 (1979).

abandon the discriminatory law and instead follow the less discriminatory alternative.[179]

The balancing test is applied when the state law is not discriminatory.[180] In *Pike v. Bruce Church*, Inc., the Supreme Court articulated the standard for a balancing test for dormant Commerce Clause challenges: "Where the statute regulates even-handedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits."[181]

It is well founded that "one state in its dealings with another may not place itself in a position of economic isolation."[182] Therefore, "where simple economic protectionism is effected by state legislation, a virtually per se rule of invalidity has been erected."[183] The purpose of AB 32 is not to isolate California economically. The purpose of AB 32 is to help the fight against global warming. The hardships created by this legislation are placed solely on in-state entities. AB 32 would not be found unconstitutional under economic protectionism.

If in its attempts to counter leakage, California treats out-of-state industries differently than in-state industries, it is very likely that California will lose in a dormant Commerce Clause challenge.[184] Given the near impossibility of surviving a strict scrutiny test, California's most feasible option is to create a cap-and-trade system in a manner that would make the *Pike* balancing test applicable, or in other words, to create the system that is not discriminatory.[185]

When analyzing the first prong of the balancing test, a legitimate public purpose, "a reviewing court will evaluate California's legitimate interests in enacting a GHG cap-and-trade program."[186] California is off to a strong start with the justifications the state has already detailed in AB 32.[187] When analyzing the second prong of the *Pike* balancing test, the court will balance California's benefit versus the burden the state's policies place on the interstate commerce.[188]

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[179] *See id.*
[180] Chemerinksy, *supra* note 1, at 10657
[181] *Pike*, 397 U.S. at 142.
[182] Baldwin v. G.A.F. Seelig, Inc., 294 U.S. 511, 527 (1935).
[183] Philadelphia v. New Jersey, 437 U.S. 617, 624 (1978).
[184] Chemerinksy, *supra* note 1, at 10658
[185] *Id.*
[186] *Id.*
[187] *Id.*
[188] *Id.* at 10659.

California can place itself in a better situation by intelligently designing its cap-and-trade system. There are two components that designers of the cap-and-trade system should keep in mind: (1) "the more squarely that California can place the regulatory burden on in-state actors the better;" and (2) the easier California makes it for out-of-state entities to act in accordance with with the cap-and-trade system the better.[189] These components are important to keep in mind because the more burdensome the cap-and-trade system is the more likely it is that it will not survive the *Pike* balancing test.[190] Designers of the cap-and-trade system will want to make sure that its system will place out-of-state entities that want to participate in California's market in a comparable position with in-state entities.[191]

AB 32's cap-and-trade system will survive a dormant Commerce Clause challenge if system designers: (1) avoid laws which would fall under the strict scrutiny standard of review; (2) attach regulatory obligations on in-state activities; and (3) establish that the regulatory procedures achieve the state's legitimate objectives by assembling documentation.[192]

There are steps that California can take to place itself in the optimum position in case the court hearing the dormant Commerce Clause challenge decides the *Pike* balancing test is the applicable standard of review.[193] California needs to build a strong record by tying its procedures and explaining its policies in light of the threats it is attempting to ward off.[194] California needs to position the compliance burdens of regulations on in-state entities in order to satisfy the burden prong of the *Pike* balancing test.[195] Furthermore, the state will further strengthen its cause if it makes it simple to comply with the cap-and-trade system and ensures that out-of-state entities do not have different burdens or have to abide by different processes than those required of in-state entities.[196] Focusing on California as much as possible will be essential in surviving a *Pike* balancing test.[197] If California regulates in an unbiased way and takes the

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[189] *Id.*
[190] *Id.*
[191] *Id.*
[192] *Id.*
[193] *Id.*
[194] *Id.*
[195] *Id.*
[196] *Id.*
[197] *Id.*

appropriate steps to justify the cap-and-trade system, California can withstand a dormant Commerce Clause challenge.[198]

VIII. CONCLUSION

To date, California has been exceedingly influential on both a national and international level in establishing standards for the regulation of air pollution.[199] California can become a leader in the emerging global market for GHG reduction technologies. A well-designed comprehensive cap-and-trade program, which includes the agricultural sector, can be dually beneficial by reducing GHG emissions while also yielding economic growth in California through development of reduction technology.

It is desirable to implement a multi-sector market-based system because an incentive-based system will stimulate the agricultural industry to reduce emissions. It will also cause the industry to generate innovative ideas in reduction technology. Where to place regulation, upstream or downstream; comprehensiveness of treatment; and burden distribution are all areas that need to be addressed. The idea that agriculture and land-use activities must be treated differently under a carbon pricing system has dominated the literature to date. This Comment rejects such a notion and asserts that "[a]gricultural emissions should be fully included and activities that reduce emissions should be eligible for credits."[200] In order for the cap-and-trade system to be viable, cost-effective, and efficient, it must be comprehensive. Therefore, it must include the agricultural sector. The cap-and-trade system allowable under AB 32, and arguably required by EO S-20-06, should be applicable to the agricultural industry.

CAREY L. HARTSOCK

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[198] *Id.*

[199] HANEMANN, *supra* note 11, at 20.

[200] Metcalf, *supra* note 111, at 36.