GEORGETOWN CLIMATE CENTER
Georgetown State-Federal Climate Resource Center

State Roles in Reducing Greenhouse Gas Emissions from Transportation

Vicki Arroyo, Executive Director, Georgetown State-Federal Climate Resource Center
and Visiting Professor, Georgetown Law[1]

Initially presented at Meeting of Dialogue on State Roles in U.S. Climate Policy
Chicago, February 3, 2009
Updated October 15, 2009

Contents

1. Overview of state roles in transportation

Transportation emissions account for roughly one third of U.S. greenhouse gas (GHG) emissions that contribute to climate change. As a result, emissions reductions from this sector must be a key component of any comprehensive program to reduce greenhouse gas emissions. A number of states have undertaken a variety of policies and programs to reduce greenhouse gas emissions from the transportation sector, ranging from vehicle emissions standards to fuel mandates and incentives to numerous land-use and driving-reduction policies. In some cases, states have been models for federal policy—for example, President Obama announced in May 2009 that the U.S. EPA and DOT will be implementing a vehicle GHG standard consistent with the program proposed by the state of California and adopted by fourteen other states and four Canadian provinces. In other cases, states and local governments will continue to be the lead policymakers—land use and planning decisions are matters primarily addressed at the sub-national level. Yet even in these cases, the federal government can play an important supportive role by providing guidance, policy models,

[1] *Contact information* – Vicki Arroyo, Executive Director, Georgetown State-Federal Climate Resource Center (also called the Georgetown Climate Center), 600 New Jersey Avenue, NW, Washington, DC 20001; *phone* (202) 661-6556; *email* arroyo@law.georgetown.edu. The author is grateful for assistance from the Harrison Institute faculty (Profs. Robert Stumberg and Matthew Porterfield) and students Rachel Gross, Sarah Coover, Ben Szilagyi, and James Bates for their assistance in researching and writing this paper, and for assistance with updates by Kate Zyla, Policy Director of the Georgetown Climate Center and research assistants Kym Hunter and Gabriel Pacyniak. Judi Greenwald of the Pew Center on Global Climate Change, Prof. Peter Byrne, and various state officials participating in the dialogue also offered helpful input. The Georgetown Climate Center is grateful for support from our funders: Rockefeller Brothers Fund, Emily Hall Tremaine Foundation, Rockefeller Foundation, and Joyce Foundation who make our work possible.

performance standards, and funding. The possibility for both conflict and coordination of activities across levels and agencies of government is important to understand and address in order for climate change policy to be effective.

This paper reviews state roles in transportation policy as it relates to climate change and identifies potential areas of overlap between state and federal authorities and potential areas of conflict. It was initially prepared with assistance of students and faculty of the Harrison Institute in order to inform the WRI/Nicholas Institute dialogue of state officials held from November 2008 to February 2009, and was most recently updated in early October 2009. Each section draws upon (and provides links to) relevant resources, evaluates opportunities for reducing greenhouse gas emissions from the various elements of the transportation sector, and discusses some pertinent issues at the state and federal policy nexus.

State initiatives on transportation are often grouped into three categories (often called the "three legs of the stool") because all are needed in order to achieve significant emissions reductions in this sector. They are aimed at:

1. Vehicles;
2. Fuels; and/or
3. Vehicle miles traveled (VMT).

As discussed in the course of the dialogue, sometimes a fourth leg is added to this list – systems efficiency – which deals with transportation system design, signals, and other factors that can affect both traffic congestion and emissions. The focus of this paper, however, is the first three legs of the stool: vehicles, fuels, and VMT (with some discussion of systems efficiency in this third section).

2. State initiatives and challenges

States have undertaken a variety of policies and programs to reduce greenhouse gas emissions from the transportation sector. The following discussion groups these efforts according to the "three legs of the stool," presents some of the challenges states have faced in implementing these programs, and identifies resources and possible state/federal implementation issues.

a. Vehicle emissions performance

The design, assembly, and maintenance of motor vehicles determine how efficiently they consume fuel and use refrigerants in air conditioning, which in turn affect the amount of greenhouse gases emitted from combustion and leaking refrigerants. States and other jurisdictions can affect vehicle performance either by setting mandatory standards or by encouraging the production and purchase of low-emitting vehicles.

(1) *State-federal relations*

The California car standards mentioned above that have informed development of new federal automobile standards are an outgrowth of their unique authority under the Clean Air Act. Under § 209(a) of the Clean Air Act (CAA), states are prohibited from "adopt[ing] or attempt[ing] to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part." However, because of its historic leadership and unique air pollution problems, California may apply for a waiver from this provision and other states may choose to adopt the California standard if a waiver is granted.[2] Section CAA §209(b)(1) allows the U.S. EPA to grant a waiver to California if the state's standard will be "at least as protective of public health and welfare as applicable Federal standards." It must also prove that its standards are necessary "to meet compelling and extraordinary conditions."[3] The CAA also provides three criteria for the EPA Administrator to use to determine if a waiver should be denied.[4] These criteria are: 1) "the determination that the State is arbitrary and capricious," 2) "such State does not need such State standards to meet compelling and extraordinary conditions," or 3) "such State standards and accompanying enforcement procedures are not consistent with section 7521(a) of this title [CAA]."[5] (That is, the state's requirements for emission control devices pose unreasonable risks to health or safety, there is insufficient lead time for permitting and development of technology, etc.)

In 2005, California applied for a waiver after the state legislature adopted AB 1493 (the Pavley Act) aimed at reducing greenhouse gas emissions from automobiles.[6] California estimates that this plan would result in greater GHG reductions and an equivalent fuel standard of 43 mpg by 2020[7] as compared with the current federal plan, which would require a minimum of 35 mpg by 2020.

The waiver request was initially denied in March 2008.[8] In denying the request, former EPA Administrator Stephen Johnson stated that the request did not satisfy the criteria because a CAA waiver had traditionally only been granted to address problems that are local or regional in nature (not an issue like climate change which has a global scope), and that the concentration of greenhouse gases was virtually uniform throughout the world regardless of emission source.[9] Johnson also made strongly contested claims that California's standard would not meet the CAA criteria of being "at least as protective of public health and welfare as applicable Federal standards."[10]

---

[2] For a discussion of California's historic leadership and special status under the Clean Air Act *see* Ann Carlson, *Iterative Federalism and Climate Change*, 103 Nw. U. L. Rev. 1097, 1107-19 (2009).

[3] Clean Air Act, 42 U.S.C. § 7543(b)(1) (2009).

[4] § 7543 (b)(1)(A)-(C).

[5] *Id.*

[6] Cal. Health & Safety Code §43018.5(a) (West 2006).

[7] California Air Resources Board, *Comparison of Greenhouse Gas Reductions for the United States and Canada Under U.S. CAFE Standards and California Air Resources Board Greenhouse Gas Regulations*, vii (2008), *available at* http://www.arb.ca.gov/cc/ccms/reports/final_pavleyaddendum.pdf.

[8] Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 73 Fed. Reg. 12,156, 12,168-69 (Mar. 6, 2008).

[9] *Id.* at 12,156-57 (claiming that "the emissions of motor vehicles in California do not affect California's air pollution problem in any way different from emissions from vehicles and other pollution sources around the world.")

[10] Letter from S. Johnson to Governor A. Schwarzenegger (Dec. 19, 2007) at 1 (claiming California's regulation would result in

While California is the forerunner of state GHG transportation reduction programs, it is not alone. Section 177 of the Clean Air Act allows other states (often called "Section 177 states") to adopt California's standards, and fourteen states[11] and four Canadian provinces[12] are poised to do so.

After his inauguration, President Barack Obama ordered the EPA to reassess its denial of California's waiver request. [13] A number of parties had previously challenged the waiver, including auto manufacturers who insisted that the alternate standards would create an unmanageable patchwork of regulations.[14] Future challenges to the waiver, if granted, were also anticipated. In May 2009, the challenging parties, the state of California, the EPA, and the DOT reached an agreement to resolve current and potential disputes over standards through Model Year 2016.[15]

In accordance with the agreement, the EPA and DOT have announced a joint program to establish GHG and fuel economy standards for passenger vehicles that would achieve GHG reductions equivalent or greater to the California regulations for 2012-2016 model years.[16] Manufacturers have agreed to drop current challenges to the waiver and to forgo any future challenges.[17] California has agreed to revise its standards to allow manufacturers to demonstrate compliance with the state standard by "pooling" their vehicles in California and other 177 state vehicle sales, to use emissions data from federal CAFE standards to demonstrate state compliance, and to allow compliance with EPA standards to serve as compliance with California standards for model years 2012-2016.

Following the joint DOT/EPA announcement of this agreement, the California waiver was granted on June 20, 2009.[18] The granting of the waiver allows California and

---

an average of 33.8 mpg compared to the current Federal goal of 35 mpg), *available at* http://www.epa.gov/otaq/climate/20071219-slj.pdf . California's analysis said otherwise. *See* CARB analysis *supra* note 7.

[11] Arizona, Connecticut, Florida, Maine, Maryland, Massachusetts, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington have already adopted California's standard, and Colorado, Montana, and Utah are considering adopting it. Pew Center on Global Climate Change, *Vehicle Greenhouse Gas Emissions Standards, available at* http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm (last visited Oct. 20, 2009).

[12] British Columbia, Manitoba, Nova Scotia, and Quebec. *See* Michael Bettencourt, *Arnie Defends California's Greenhouse-gas Rules*, The Globe & Mail, Apr. 23, 2009 at G9.

[13] Barack Obama, Memorandum for the Administrator of the Environmental Protection Agency, State of California Request for Waiver Under 42 U.S.C. 7543(b) the Clean Air Act, Jan. 26, 2009, *available at* http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_EPA_Waiver.

[14] *See e.g.*, Central Valley Chrysler-Jeep v. Goldstene, 529 F.Supp.2d 1151 (E.D. Ca. 2007), Lincoln-Dodge v. Sullivan, 588 F.Supp.2d 224 (Dist. R.I. 2008).

[15] Press Release, The White House, *President Obama Announces National Fuel Efficiency Policy*, May 19, 2009, http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy.

[16] *Notice of Upcoming Joint Rulemaking To Establish Vehicle GHG Emissions and CAFE Standards* ,74 Fed. Reg. 24007 (May 22, 2009).

[17] Despite the agreement, the National Automobile Dealers Association and the U.S. Chamber of Commerce recently asked the U.S. Court of Appeals for the District of Columbia Circuit to review EPA's decision to grant California's waiver. *See* the petition by plaintiffs at http://www.cleancarscampaign.org/web-content/legal/docs/CoC-NADA%20petition.pdf (last visited Oct. 6, 2009).

[18] Notice of Decision, Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 74 Fed.Reg. 32744 (July 8, 2009).

other section 177 states to regulate vehicle emissions before 2012 and after 2016. For model years 2012-2016, section 177 states are required to conform with the federal program (National Fuel Efficiency Program). A September 15, 2009 joint proposal includes EPA standards that would achieve a standard of 250 grams of CO_2 equivalent per mile in 2016 as required by the California standards.[19] The 250-gram standard would be achieved through a linear phase-in from 2011, and would be coupled with harmonized fuel efficiency standards for the Department of Transportation. DOT proposes to set combined average fuel economy (CAFE) standards at 34.1 mpg by Model Year 2016.[20]

California is currently in the process of amending its standards to conform with the May 2009 agreement. In August 2009, the California Air Resources Board released proposed amendments to its standards. These amendments outline a mechanism by which manufacturers would be able to demonstrate compliance through pooling vehicle sales with other Section 177 states, and propose that federal CAFE standards be able to be used to demonstrate compliance with California standards.[21] The proposed amendments were considered by the board September 24-25, 2009 which will now proceed with the next stage of the rulemaking.[22] Additional amendments outlining how compliance with federal EPA standards may serve to demonstrate compliance with the California standards are scheduled to be introduced in December 2009.

After the announcement of the fuel standards agreement by the Obama administration, Canada announced in April 2009 that it would establish its own national fuel economy standards equivalent to the new U.S. standards.[23]

For more information & related resources:

State Vehicle Standards

Pew Center on Global Climate Change
http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm

California Air Resources Board
http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

[19] Department of Transportation & Environmental Protection Agency, Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, (Sep. 15, 2009), *available at* http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.d0b5a45b55bfbe582f57529cdba046a0/.
[20] *Id.*
[21] California Environmental Protection Agency, Air Resources Board, Rulemaking to Consider Proposed Amendments to New Passenger Motor Vehicle Greenhouse Gas Emissions Standards, http://www.arb.ca.gov/regact/2009/ghgpv09/ghgpv09.htm (last visited Oct. 10, 2009).
[22] *Id.*
[23] Canada Department of the Environment, *Notice of Intent to Develop Regulations Limiting Carbon Dioxide Emission from New Cars and Light-duty Trucks*, 143 C. Gaz., Apr. 4, 2009 at No. 14, *available at* http://www.gazette.gc.ca/rp-pr/p1/2009/2009-04-04/html/notice-avis-eng.html#d110.

State Incentives

States are also encouraging the purchase and use of lower-emitting vehicles. Incentives include tax credits (supplementing those offered by the federal government) as well as access to high-occupancy lanes on highways.

Hybridcenter.org
http://go.ucsusa.org/hybridcenter/incentives.cfm

U.S. Dept. of Energy
http://www.afdc.energy.gov/afdc/progs/tech_matrx.php
http://www.afdc.energy.gov/afdc/incentives_laws.html

b. Fuel performance

In addition to vehicle performance, the carbon content of transportation fuels has a significant effect on the greenhouse gases emitted per mile driven.

(1) *State-Federal Relations*

(a) *Potential clash of fuel standards*

Thirteen states have developed their own mandates for ethanol in gasoline.[24] Except for Pennsylvania, which specifies that only cellulosic ethanol qualifies for its mandate,[25] these generally do not require that the use of ethanol result in reduction of GHG emissions.

With California in the lead, fourteen states have committed to adopt a low carbon fuel standard (LCFS),[26] which regulates fuels based on lifecycle carbon emissions. The California LCFS is likely to treat corn ethanol – the predominant source of ethanol in the U.S. market – differently than the federal renewable fuel standard (RFS) does. This difference could create a risk of conflict between the two standards.

In its proposed LCFS, California has incorporated an estimate of land use effects in which it assumes that most corn ethanol currently on the market does not reduce

[24] Ark. Code Ann. § 15-13-201 (2008); Ariz. Rev. Stat. § 41-2123 (LexisNexis 2008); Fla. Stat. § 526.203 (2008); Haw. Rev. Stat. Ann. § 486J-10 (LexisNexis 2008); Iowa Code. 1142 §§ 1, 7(b)(2) (2008); La. Rev. Stat. Ann. § 3:4674(C)(1)(2008); Minn. Stat. §§ 239.791(1)(a), (1a)(d)(2) (2007); Mo. Rev. Stat. § 414.255.3 (2008); Mont. Code Ann. § 82-15-121 (2008); N.M. Stat. Ann. § 57-19-29 (LexisNexis 2008); Or. Admin. R. 603-027-0420(3) (2008); 73 Pa. Stat. Ann. § 1650.4 (West 2008); Wash. Rev. Code Ann. § 19.112.120 (LexisNexis 2008).

[25] 73 Pa. Stat. Ann. § 1650.4 (LexisNexis 2008).

[26] California Air Resources Board, The California Low Carbon Fuel Standard Regulation, Draft, Dec. 1 2008, at § 95422, *available at* http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings.htm; Northeast/Mid-Atlantic States Low Carbon Fuel Standard Program, Low Carbon Fuel Framework, Dec. 31, 2008. The eleven east coast states listed within have committed to developing a Memorandum of Understanding, which will outline the development of the regional program by December 31, 2009. The Framework suggests that an 80% reduction from 1990 levels by 2050 may become the program's goal.

GHG emissions compared to gasoline.[27] Corn ethanol critics argue that using cropland to produce fuel reduces the supply of food, which ultimately results in converting additional land into crop cultivation. Conversion of pasture, grassland, conservation reserves, and forests destroys carbon sinks, and the GHG effect could be worse than simply using gasoline.[28] Increased corn production also leads to increased nitrogen runoff, which pollutes groundwater and causes "dead zones" in coastal waterways.[29]

The corn ethanol industry and some scientists reply that: (1) no accurate model exists for estimating land conversion, and (2) corn ethanol is a necessary transitional fuel to establish a renewable fuel market and infrastructure for the low-carbon ethanol that will eventually be produced from cellulose and waste.[30]

Under the Energy Independence and Security Act (EISA), the federal RFS requires production of a particular volume of renewable fuel each year. In 2009, the RFS requires that 11.1 billion gallons of biofuels be included in the nation's transportation fuel supply. This increases incrementally to 36 billion gallons in 2022.[31] In general, in order to be eligible under the RFS, all biofuels, including corn ethanol, must reduce lifecycle GHG emissions at least 20% below those of gasoline,[32] and the federal lifecycle accounting must include secondary land use effects.[33] EPA, however, has proposed interpreting provisions in the EISA to grandfather approximately fifteen billion gallons of corn ethanol, exempting these from the GHG reduction requirement.[34] Furthermore, an amendment to the

---

[27] *See* California Air Resources Board, 1 *Proposed Regulation to Implement the Low Carbon Fuel Standard* IV-49 (March 5, 2009) (showing that average midwest corn ethanol has 4% greater lifecycle emissions than gasoline), *available at* http://www.arb.ca.gov/fuels/lcfs/.

[28] *See, e.g.*, Timothy Searchinger, et al., *Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land Use Change*, 319 Sciencexpress 1238 (Feb. 7, 2008) , *available at* http://www.sciencemag.org/cgi/content/abstract/1151861

[29] *See, e.g.*, National Research Council, Water Implications of Biofuels Production in the United States, National Academies Report in Brief, at 3 (Oct. 2007).

[30] *See e.g.*, Renewable Fuels Association, *Comments on the Advance Notice of Proposed Rulemaking entitled Regulating Greenhouse Gas Emissions under the Clean Air Act* (Nov. 28, 2008) at 2 ("Exclude Any Speculative International Land Use Impacts Until Sound Methodologies are Developed That Have Been Peer-Reviewed, Subject to Rulemaking, and are Objectively Verifiable and Reproducible"), *available at* http://www.ethanolrfa.org/policy/statements/ (viewed Jan. 31, 2009); *see also* comments of Dr. Michael Wang and others, "E- letters" in response to Timothy Searchinger (Aug. 12, 2008), *available at* http://www.sciencemag.org/cgi/eletters/319/5867/1238#10977 the GHG performance of corn ethanol in terms of direct effects, not considering land use. *See, e.g.*, Adam J. Liska et al., *Improvements in Life Cycle Energy Efficiency and Greenhouse Gas Emissions of Corn-Ethanol*, J. of Industrial Ecology 1 (2008), *available at* http://www.growthenergy.org/2009/reports/2009%20JIE%20Improvements%20in%20corn%20ethanol-Liska%20et%20al.pdf

[31] Energy Independence and Security Act of 2007, Pub. L. No. 110-40, § 202(a)(2), 121 Stat. 1492, 1522.

[32] Energy Independence and Security Act of 2007, § 202(a)(1).

[33] Section 201 of the Energy Independence and Security Act (EISA) defines lifecycle GHG emissions as: ''the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential."

[34] Under Section 210(a) of the EISA, ethanol from facilities that commenced construction before the date of enactment of the EISA (December 17, 2007) is "grandfathered" – *i.e.* exempt – from compliance with the 20% GHG reduction requirement. In 2008, EPA estimated that 13 billion gallons of ethanol would be covered under this provision. *See* Environmental Protection Agency, Notice of Decision, Regarding the State of Texas Request for a Waiver of a Portion of the Renewable Fuel Standard, 73 Fed. Reg. 47168, 47175 (Aug. 13, 2008), *available at* http://www.epa.gov/fedrgstr/EPA-AIR/2008/August/Day-

climate legislation recently passed by the U.S. House of Representatives would delay any consideration of indirect land use change in ethanol production for up to five years.[35]

This grandfathering of corn ethanol, combined with the fuel's wide availability, could result in the federal RFS conflicting with state LCFSs. Under the RFS, fuel providers must blend a certain amount of biofuels. But the only type of ethanol that is currently available in significant quantities is corn ethanol,[36] which would not meet the state LCFS carbon intensity requirements. Conversely, if fuel providers comply with a state LCFS, they may not be able to blend enough corn-based fuel to meet the federal RFS. This problem is potentially exacerbated if EPA grants a waiver to raise the ethanol blending ceiling (the proportion of ethanol permitted to be added to standard gasoline) from ten percent to fifteen percent.[37]

There are several policy alternatives to deal with this potential conflict. One option would be for states to request a waiver from the RFS from EPA. A second response would be to enable fuel suppliers to use more low-carbon sugar ethanol, for example, which would require relaxation of the tariff on imports from Brazil (see discussion below). A third option would be to ensure that corn ethanol plays a transitional role by limiting the duration of the grandfathering clause in the RFS. These and other alternatives require further study.

(b) ***Potential trade conflicts***

In addition to the threat of conflict with the federal RFS, attempts by states to reduce the carbon intensity of transportation fuels could also be affected by international trade agreements administered by the World Trade Organization (WTO). Although trade agreements do not directly modify state or federal law, they can result in the imposition of trade sanctions by other countries that can generate significant political and economic pressure to amend laws that are found to conflict with the relevant rules. Trade agreements could be used to either promote or oppose GHG mitigation policies.

As an example of a trade rule that promotes GHG mitigation, Brazil has already brought a challenge before the WTO arguing that U.S. corn subsidies violate the WTO's Agreement on Agriculture (AoA) and Agreement on Subsidies and

---

13/a18738.pdf. In its proposed rule for implementing the EISA's provisions regarding the renewable fuel standard, however, EPA has proposed to grandfather a total of 15 billion gallons from the 20% GHG reduction standard. *See* Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Proposed Rule, 74 Fed. Reg. 24904, 24925 (May 26, 2009), *available at* http://www.epa.gov/oms/renewablefuels/rfs2_1-5.pdf. This proposal is based on EPA's interpretation of other language in Section 210(a) of the EISA, which states that "(f)or calendar years 2008 and 2009, any ethanol plant that is fired with natural gas, biomass, or any combination thereof is deemed to be in compliance with such 20 percent reduction requirement…" EPA interprets this language to grandfather ethanol from facilities that commenced construction by the end of 2009 so long as those facilities are powered with natural gas or biomass. *See* 74 Fed. Reg. at 24925.

[35] *See* American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. § 551 (2009).

[36] *See* Energy Information Administration, Annual Energy Outlook Early Release Table 17 Renewable Energy Consumption by Dec. 2008 (showing no cellulosic ethanol available in 2010 and negative net ethanol imports from 2011-2013).

[37] *See* Growth Energy on Behalf of 52 United States Ethanol Manufacturers, Application for a Waiver Pursuant to Section 211(f)(3) of the Clean Air Act for E-15 (2009) *available at* www.growthenergy.org/2009/e15/Waiver%20application.pdf

.

Countervailing Measures (the SCM Agreement). Brazil has indicated that it considers the corn subsidies to be a form of indirect subsidy to U.S. corn ethanol producers. The subsidy improves their competitive position against the lower-carbon sugarcane ethanol that Brazil exports to the United States.[38] Brazil has also suggested that it may challenge the secondary tariff of $0.54 per gallon that the United States imposes on imported ethanol as a violation of U.S. commitments under the General Agreement on Tariffs and Trade (GATT).[39] If Brazil is successful in using trade rules to pressure the United States to reduce or eliminate corn subsidies and the ethanol tariff, it could encourage the importation and use of more sugarcane ethanol, which is lower in carbon intensity.[40]

On the other hand, other trade rules could be used to challenge policies designed to reduce the carbon intensity of fuels. A state LCFS, for example, could be challenged under the Agreement on Technical Barriers to Trade (TBT Agreement) on the grounds that it is not based on "relevant international standards," such as those that are being developed by the International Organization for Standardization (ISO) and the Global Bioenergy Partnership (GBEP). Similarly, if an LCFS is implemented in a manner that provides a competitive advantage to domestically produced biofuels, it could be challenged under provisions of the GATT that prohibit discriminatory mixing rules. Considering such potential challenges in the design of state standards could help mitigate the risk of a violation.

For more information & related resources:

Low carbon fuel standards (LCFS)

CARB
www.arb.ca.gov/fuels/lcfs/lcfs.htm

EPA-Public Fleet Goals
Energy Efficiency and Alternative Fuel Goals for Public Fleets.
http://www.epa.gov/cleanenergy/energy-programs/state-and-local/state_planning.html#eeaf

Biofuel mandates

Pew Center on Global Climate Change
Mandates and Incentives Promoting Biofuels,
http://www.pewclimate.org/what_s_being_done/in_the_states/map_ethanol.cfm

Biofuel tax incentives and grants

DOE Alternative Fuels and Advanced Vehicles Data Center
Ethanol incentives and public fleet goals,

[38] *Brazil Seeks WTO Probe of U.S. Farm Subsidies*, The Journal of Commerce Online, Sept. 13, 2007, *available at* http://www.joc.com/node/396300.
[39] Jamie Strawbridge, *Brazil Mulls Ethanol Case Against U.S. On Tariff Classification*, Inside U.S. Trade, Aug. 8, 2008.
[40] There is some support in Congress for eliminating the tariff. *See* The Affordable Food and Fuel for America Act, H.R. 3187, 111th Cong. (2009), would phase out the ethanol tariff by 2014. *See also* H.R. 2956, 111th Cong. (2009).

http://www.afdc.energy.gov/afdc/ethanol/incentives_laws.html

Public fleet goals

EPA State Action Plans Database
States with public fleet requirements, http://yosemite.epa.gov/gw/StatePolicyActions.nsf/(LookupMatrices)/Transportation_Alternative+Fuel+Vehicles?OpenDocument.

c. Vehicle Miles Traveled (VMT) & Congestion Management

Finally, greenhouse gases can be reduced in the transportation sector through individual behavioral changes such as driving less often, driving shorter distances, and spending less time idling, and policies can provide incentives for these changes. A recent study published by the Urban Land Institute found that aggressively implementing a full range of strategies aimed at reducing VMT could result in 18 to 24 percent reductions in on-road greenhouse gas emissions by 2050.[41] Because many VMT reduction strategies depend on state and local functions, such as the design of roads and communities, states can play an especially critical role in achieving VMT reductions.

(1) *State and local initiatives and related resources*

While local governments have the lead in zoning, state governments have the power to encourage VMT reductions by providing the right incentives for drivers and local jurisdictions. States can provide financial incentives and enact enabling statutes to give local governments the authority and the means to make positive changes. Below are examples of some initiatives that state and local governments can use to combat VMT growth and reduce greenhouse gas (GHG) emissions.

(a) *Land use*

Land use initiatives have significant potential for decreasing GHG emissions;[42] however, they will also require planning and coordination between different divisions of state and local governments in order to align transportation policies, environmental policies, and housing policies.

i. **Transit-oriented, infill and brownfield development**

Revitalizing the urban core and planning mixed-use development within walking distance of transit stops can greatly reduce VMT.[43] Governments

[41] Based on the "aggressive deployment" and "maximum deployment" scenarios. Urban Land Institute, Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions 5 (2009), *available at* http://www.movingcooler.info [hereinafter Moving Cooler].

[42] The Urban Land Institute (ULI) argues that shifting 60 percent of new growth to compact patterns would save 79 million tons of CO_2 annually by 2030, equivalent to a 28 percent increase in federal vehicle efficiency standards by 2020. Ewing, Reid et al., Growing Cooler: the Evidence on Urban Development and Climate Change, Urban Land Institute, 2007. In another study, ULI finds that integrated land use strategies (not including pedestrian and bicycle strategies) are estimated to achieve cumulative on-road GHG emissions reductions from 0.2 to 4.4 percent over baseline by 2050, one of the largest potential reductions of any strategy. Benefits are expected accrue slowly in the short term because of the difficulty in implementation, but escalate rapidly in the long term. Moving Cooler *supra* note 41 at 40-41.

[43] The Center for Clean Air Policy has estimated that comprehensive regional smart growth planning strategies that include

could encourage these practices through property tax incentives, streamlined permit processes, making "excess" state land available for high-density development, providing municipalities with "tax-increment financing" authority, or requiring trip-reduction features in major developments.[44]

ii. **Permitting & zoning reform**

Local zoning rules often prohibit mixed-use and mixed-income development. By instead providing incentives for developers to create these types of facilities, zoning could be used to reduce the amount of driving needed in a community.[45] Other strategies include prohibiting uses that promote vehicular travel, such as drive-through restaurants or gas stations, and requiring minimum densities in transit locations.[46] Additionally, reducing minimum parking space requirements could discourage driving when alternatives are available and create additional space for transit-oriented development (TOD).[47]

iii. **Pedestrian and bicycle-oriented design**

Smart-growth planning, including requirements that streets are safe for pedestrians and bicyclists, can reduce trips made by car.[48] Several states have enacted legislation requiring safe designs in all new construction projects.[49] In April 2009, New York City passed an ordinance requiring certain new and converted multifamily dwellings, residential and commercial buildings, and parking garages to provide bicycle parking.[50]

---

complementary land use, transit and travel demand management policies and programs could reduce regional VMT between 3 to 25 percent. *See* Center for Clean Air Policy, *Transportation Guidebook*, http://www.ccap.org/guidebook/ (last visited Oct.21, 2009). For more information on state opportunities to implement land-use VMT reduction policies, *see* John L. Renne, *Smart-Growth and Transit-Oriented Development at the State Level: Lessons from California, New Jersey and Western Australia*, 11 J. Pub. Transportation 3, (2008); Cambridge Systematics, Transportation Research Board, The Role of State DOTs in Support of Transit-Oriented Development (TOD), NCHRP 25-25/Task20 (Apr. 2006), *available at* http://www.trb.org/NotesDocs/25-25%2820%29_FR.pdf *See generally*, Robert Cervero et. al, *Transit-Oriended Development in the United States: Experiences, Challenges and Prospects*, TCRP Report 102 (2004), *available at* http://www.tcrponline.org/bin/publications.pl?mode=abstract&cat_id=23&pub_id=1333 (last visited Oct. 20, 2009).

[44] San Mateo County, CA received a Smart Growth Achievement award in 2002 from the Environmental Protection Agency for providing financial incentives to build housing within walking distance of rail stations. *See* County Association of Governments of San Mateo County - National Award for Smart Growth Achievement - 2002 Winners Presentation http://www.epa.gov/smartgrowth/san_mateo.htm (last visited Oct. 20, 2009).

[45] The City of Chicago uses incentive-based zoning to encourage mixed-income development, offering additional square footage in exchange for the construction of affordable units. Douglas Shoemaker, Center for Transit-Oriented Development, Tools for Mixed-Income TOD (2006), *available at* http://www.reconnectingamerica.org/public/show/tools.

[46] The city of Seattle create an overlay zoning district around new light-rail and monorail corridors that prohibit drive-in businesses and permits single-family development only if minimum density standards are met. The Role of State DOTs in Support of Transit-Oriented Development, *supra* note 43 at 65.

[47] Reducing the number of parking spaces can also save on construction costs and make TOD more affordable. A case study of six San Francisco neighborhoods found that the standard requirement for off-street parking increased costs for single family homes and condominiums by more than 10 percent. California Department of Transportation, *Statewide Transit-Oriented Development (TOD) Study Factors for Success in California*, (Feb., 2002), http://transitorienteddevelopment.dot.ca.gov/PDFs/Parking%20and%20TOD%20Report.pdf (last visited Oct. 20, 2009).

[48] Chicago, IL, set a goal of having 5% of all trips under five miles completed by bicycle by 2015. City of Chicago, Bike 2015 Plan, http://www.bike2015plan.org/execsumm.html (last visited Oct. 20, 2009).

[49] For example a Florida statute requires pedestrian and bicycle oriented designs for new road construction projects. Fla. Stat. § 355.065 (2008).

[50] NY Zoning Code Text Amendment, Article II, Chapter 5, Section 25-80. Adopted April 22, 2009, *available at* http://www.nyc.gov/html/dcp/html/bicycle_parking/index.shtml

(b) ***Transportation alternatives***

The cost of transportation alternatives will vary greatly depending on which alternatives are developed.

i. **Improve existing transit services**

Improving transit that already exists can be a cost-effective way of reducing GHG. Transportation services could implement more routes, run routes with greater frequency, increase service hours, lower fares, or start park-and-ride programs.[51] Provision of real-time information can also enhance transit service and increase ridership.

ii. **Implement new transit alternatives**

There are several different options to consider when developing transportation alternatives. Light rail transit such as electric streetcar, trolley, or tramway are often preferred by customers over buses but may have higher GHG emissions.[52] Bus rapid transit has fewer stops then normal bus routes and has increased ridership in some cases over normal bus routes.[53]

(c) ***Individual incentives***

Individual incentives can be effective because they directly influence the amount an individual spends for travel. ULI's Moving Cooler found that pricing strategies have some of the greatest potential to reduce GHGs.[54]

i. **Pricing Strategies**

Road and parking pricing programs improve GHG emissions in two ways; they discourage people from driving and for those that do still drive, there is better traffic flow which produces lower GHG emissions than highly congested stop-and-go driving. There are several types of pricing strategies considered:

- *Congestion pricing* – Time-variable tolls.
- *Cordon pricing* – Charging all vehicles entering high-use areas. [55]

---

[51] *See* Richard H. Pratt et. al., *Traveler Response to Transportation System Changes: Interim Handbook*, TCRP Web Document 12 (Project B-12), Chapters 9-12, (2000) *available at* http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_webdoc_12.pdf. The study provides an in-depth analysis of ridership changes due to fare changes, route expansion, service frequency and parking.

[52] Press Release, World Resources Institute, *Enhanced Buses Best Option for DC-Area "Purple Line," WRI Finds*, http://www.wri.org/press/2009/01/enhanced-buses-best-option-dc-area-purple-line-wri-finds (last visited Oct. 20, 2009).

[53] Los Angeles, CA, has implemented several rapid bus lines. Ridership on rapid buses has increased up to 40% since 2000. Los Angeles County Metro, Metro Rapid, Overview, http://www.metro.net/projects_studies/rapid/overview.htm (last visited Oct. 20, 2009).

[54] The largest reductions achievable through state policies would come through congestion pricing or pay-as-you drive insurance. Moving Cooler *supra* note 41 at 40.

[55] In 2008 the New York State Traffic Congestion Mitigation Commission proposed a plan to implement cordon pricing in Manhattan and received funding from DOT to implement the plan, however the plan failed to win necessary approval from the New York Legislature. Plan NYC, Pilot Congestion Pricing, http://www.nyc.gov/html/planyc2030/html/plan/transportation_congestion-pricing.shtml (last visited Oct. 20, 2009). The Congressional Budget Office released a study in March 2009 concerning the effectiveness of different types of road pricing. New York's attempt at cordon pricing is highlighted. Congressional Budget Office, Using Pricing to Reduce Traffic

- *Parking pricing* – Fees in dense areas to encourage "park once" behavior.

ii. **Commuter incentives** (often employer based)
Carpooling and telecommuting can both reduce VMT.[56] Guaranteed ride home programs and preferential car pool parking encourage carpooling. Business can be given incentives (through property tax reductions or otherwise) to offer telecommuting or alternative work schedule programs.

iii. **Pay-as-you-drive insurance** [57]
Pay-as-you-drive insurance charges per mile driven instead of a lump sum, creating an incentive to reduce driving.

(d) ***Systems efficiencies***

Steps taken to increase road efficiency can reduce the GHGs produced per mile driven in the near term. However, some of these improvements can be at odds with VMT reductions (and even long-term GHG reductions) where they encourage more miles to be driven.[58]

i. **Congestion management**
- *Construction to improve traffic flow*
GHG reductions can be achieved by improving traffic flow. Possible improvements include: reducing bottlenecks, building turning lanes, and using roundabouts instead of stop signs.
- *Technological Improvements*[59]
Traffic flow can be improved by using intelligent transportation system technologies, traffic signal optimization, and ramp metering.

ii. **Individual driving habits**
An individual's driving habits affects the amount of GHGs they produce. Driver education classes could teach "eco driving," ways of producing less GHG per mile.[60] States could also implement or enforce current anti-idling

---

Congestion, 9 (Mar. 2009), *available at* http://www.cbo.gov/ftpdocs/97xx/doc9750/03-11-CongestionPricing.pdf

[56] Employer-based commute strategies could achieve cumulative GHG reductions of up to 1.7 percent of baseline. Moving Cooler *supra* note 41 at 42.

[57] A Brookings Institution study found that implementing PAYD in California would result in an 8 percent driving reduction from light duty vehicles. Jason Bordoff et al., The Impact of Pay-As-You-Drive Insurance in California, The Brookings Institute (July 2008), *available at* http://www.brookings.edu/papers/2008/07_payd_california_bordoffnoel.aspx

[58] Moving Cooler found that transportation system changes that improve the flow of traffic, such as intelligent transportation system technologies, can achieve significant reductions, especially when these systems communicate with each other. At the same time, capacity expansion and bottleneck relief strategies actually resulted in increased GHG emissions over the long term. Moving Cooler *supra* note 41 at 43.

[59] Tucson, AZ implemented an intelligent transportation system in 2004. They have used it to relieve congestion and improve traffic flow. Research and Innovative Technology Administration, Department of Transportation, Intelligent Transportation System Benefits, http://www.itsbenefits.its.dot.gov/its/benecost.nsf/ID/11AA42D96687F6C785256A9B004FB057?OpenDocument&Query=BApp. (last visited Oct. 20, 2009)

[60] Eco-driving programs are underway in European countries. *See* Eco Drive, www.ecodrive.org (last visited Oct. 21, 2009). These programs focus on teaching drivers techniques that have been shown to achieve reductions of up to 340 lbs of CO2 emissions per driver per year, if practiced. Moving Cooler *supra* note 41 at 42.

laws, which would decrease GHGs with the same amount of VMT.[61]

iii. **Lower maximum speed limits**[62]
Generally, 55 miles per hour is the most GHG-efficient maximum speed limit; however, most states have speed limits significantly higher. The Moving Cooler study found that speed limit reductions to 55 miles per hour created the greatest short-run emission reductions.[63]

For more information & related resources:

Moving Cooler
Urban Land Institute analysis of policies for reducing vehicle miles traveled and resulting greenhouse gas emissions reductions
http://www.movingcooler.info

Center for Clean Air Policy
http://www.ccap.org/images/guidebook/CCAP_Transportation_Guidebook_Part1.pdf

Center for Climate Strategies
http://www.climatestrategies.us/ewebeditpro/items/O25F17651.PDF

Smart Growth Online
http://www.smartgrowth.org/news/bylocation.asp

Government of California
http://gov.ca.gov/fact-sheet/10707/

California Air Resources Board
http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf

Smart Growth America
http://www.smartgrowthamerica.org/transportation.html

Department of Transportation
http://www.fhwa.dot.gov/safetealu/index.htm

(2) ***State-federal relations – federally funded state and local initiatives***

---

[61] Connecticut's anti-idling law prohibits idling of all "mobile-source" engines for more than three consecutive minutes, and has recently produced an "idling-ticket brochure." *See* R.C.S.A. § 22a-174-18 (b)(3)(C); *see also* Connecticut Department of Environmental Protection, Anti-Idling Efforts in Connecticut, http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322086&depNav_GID=1619 (last visited Oct. 21 2009).

[62] Kansas Energy Chart Book. GHG emissions decrease as a car's speed increases up to approximately 55 mph, above which GHG emissions increase. Kansas Energy Council, Kansas Energy Chart Book, *Vehicle Speed vs. Greenhouse Gas Emissions*, http://kec.kansas.gov/chart_book/Chapter10/13_SpeedvsGHG.pdf (last visited Oct. 20, 2009).

[63] Not including economy-wide strategies. Moving Cooler *supra* note 41 at 42.

Funding and project approval procedures are the two biggest challenges states face when trying to implement programs to reduce vehicle miles traveled (VMT). The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), is the third federal transportation law to allow flexibility in the range of projects that could use federal transportation money. Many groups praise this bill for continuing to increase the flexibility of spending for public transit, but others claim the bill does not go far enough.[64]

Of a total $286.4 billion dedicated for federal surface transportation funding, SAFETEA-LU allows only $52.6 billion for transit programs. It authorizes 80% of funding for capital projects to come from federal dollars, but only 50% of operating expenses.[65] Some argue these caps show a bias towards highway projects. A greater proportion of highway costs is capital; a greater proportion of public transit is operating expense. Additionally, SAFETEA-LU requires more complex and rigid approval procedures for public transportation. Supporters of VMT reduction hope that when SAFETEA-LU expires in 2009 the new authorization will be friendlier to alternative transportation systems.

(a) *Pending Federal Legislation*

Congress failed to pass a new transportation reauthorization bill prior to the expiration of the previous authorization which expired on September 30, 2009. Instead, the House of Representatives and the Senate passed a short-term one month extension of the current authorization.[66] In passing the extension Congress failed to prevent the loss of $8.7 billion of state funding due to an accounting provision.[67] It is likely that a longer extension will be passed by the end of October, and that there will not be full consideration of a new bill until 2010.[68]

While considering reauthorization, a comprehensive transportation reauthorization bill was proposed in the House of Representatives by Transportation and Infrastructure Committee Chair James Oberstar (D-Minn). The Surface Transportation Authorization Act of 2009 would authorize $500 billion of transportation funding over six years, and would make significant changes to transportation policy. The bill would:

- Dedicate $337.4 billion for highway construction investment and $99.8 billion for mass transit;[69]
- Require the EPA and DOT to set national transportation emissions

[64] Smart Growth America, *available at* http://www.smartgrowthamerica.org/transportation.html (last visited Jan. 30, 2009).
[65] U.S. Department of Transportation, SAFETEA-LU, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, *available at* http://www.fhwa.dot.gov/safetealu/index.htm (last visited Jan. 30, 2009).
[66] Josh Voorhees, *Congress Misses Deadline: States Lose $8.7 billion*, Environment and Energy Daily, Oct. 01, 2009.
[67] *Id.*
[68] *Id.*
[69] H. Comm. on Transportation and Infrastructure, The Surface Transportation Authorization Act of 2009: A Blueprint for Investent and Reform, Executive Summary 4 (June 18, 2009), http://transportation.house.gov/Media/file/Highways/HPP/Surface%20Transportation%20Blueprint%20Executive%20Summary.pdf. (last visited Oct. 20, 2009).

reduction goals;[70]

- Require states and metropolitan regional planning organizations to develop targets and strategies to meet national emissions reduction goals, and to specifically consider land-use patterns that reduce dependency on single-occupant vehicle trips;[71]
- Maintain and increase flexibility for states and metropolitan areas to fund transit projects;[72]
- Define federal objectives in transportation policy, including the "lessen[ing] of environmental impacts from the transportation network"[73]
- Include a $50 billion investment in 11 high-speed rail corridors.[74]

In addition, the American Clean Energy and Security Act (ACESA),[75] a comprehensive climate change bill that passed the House of Representatives on June 26, 2009, includes a section for reducing greenhouse gas emissions through "transportation efficiency." That section, written to complement the national standards language proposed in the proposed Surface Transportation Authorization Act of 2009, directs the EPA to issue regulations for establishing national transportation emission reduction goals. It also directs the EPA to standardize methods and models for developing such targets and for collecting data on transportation-related emissions.[76]

The recently introduced Clean Energy Jobs and American Power Act, a comprehensive climate change bill currently under discussion in the Senate, includes a similar section on "transportation efficiency".[77] The current Senate bill includes much more detailed requirements for agency rulemaking than it counterpart in the House[78], with comprehensive directions for both DOT and EPA to establish transportation regulations to reduce GHGs. The bill also requires states and metropolitan planning organizations (MPOs) to create detailed strategies "likely to achieve" transportation-related targets, and requires states to consider specific transportation-related emissions strategies.[79] Additionally, the bill creates a transportation efficiency grant program eligible to receive cap-and-trade

[70] H. Comm. on Transportation and Infrastructure, The Surface Transportation Authorization Act of 2009: A Blueprint for Investent and Reform 24-26 (2009), http://transportation.house.gov/Media/file/Highways/HPP/Surface%20Transportation%20Blueprint.pdf. (last visited Oct. 20, 2009

[71] *Id.*

[72] H. Comm. on Transportation and Infrastructure, The Surface Transportation Authorization Act of 2009: A Blueprint for Investent and Reform, Executive Summary 7 (2009), http://transportation.house.gov/Media/file/Highways/HPP/Surface%20Transportation%20Blueprint%20Executive%20Summary.pdf. (last visited Oct. 20, 2009).

[73] *Id*. at 5.

[74] *Id*. at 4.

[75] Also referred to as the "Waxman-Markey" bill. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009).

[76] H.R. 2454 § 222.

[77] Clean Energy Jobs and American Power Act, [hereinafter 'Kerry-Boxer'] §112, 'Greenhouse Gas Reductions through Transportation Efficiency'

[78] *Compare* HR 2454 § 222 *with* Kerry-Boxer *supra* note 77 at §112.

[79] Kerry-Boxer *supra* note 77 at §112.

funding.[80]

For more information and related resources:

The Surface Transportation Authorization Act of 2009
Committee print of comprehensive transportation bill proposed by Rep. James L. Oberstart (D-Minn.), chair of the Committee on Transportation and Infrastructure: http://transportation.house.gov/Media/file/Highways/HPP/OBERST_044_xml.pdf

Summary documents available on committee website: http://transportation.house.gov.

American Clean Energy and Security Act of 2009
Comprehensive climate change legislation text and summary documents, as passed by the House of Representatives. Sec. 222 focuses on transportation: http://energycommerce.house.gov/index.php?option=com_content&view=article&id=1633&catid=155&Itemid=55

Clean Energy Jobs and American Power Act ["Kerry-Boxer"]
Complete bill and related summaries available at the Senate Environment and Public Works Committee website: http://epw.senate.gov/public. Section 112 focuses on transportation efficiency.

(b) ***Executive Branch Federal Initiatives***

On June 16, 2009, the Obama administration announced a joint "sustainable communities" partnership between the Department of Transportation, the Department of Housing and Urban Development, and the Environmental Protection Agency.[81] The partnership aims to "improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide. In specific, the partnership proposes to:

- Make planning grants available to integrate housing, transportation, water infrastructure, and land use;
- Provide a vision for sustainable growth that helps communities apply federal investments in an integrated fashion;
- Redefine federal housing affordability measures in a transparent way that includes transportation costs;
- Target new development at underutilized sites that already have transportation choices and other infrastructure;
- Align DOT, HUD and EPA programs;
- Undertake joint research, data collection and outreach.

[80] *Id.* at § 113.
[81] Department of Transportation, Department of Housing and Urban Development & Environmental Protection Agency, Partnership Agreement; Sustainable Communities, June 16, 2009, *available at* http://www.epa.gov/dced/pdf/dot-hud-epa-partnership-agreement.pdf

Related Resources:

Sustainable Communities Partnership
http://www.epa.gov/dced/2009-0616-epahuddot.htm.

(c) *State Legislation*

Many states have begun passing legislation to promote alternative transportation as a means of reducing GHG emissions. California has gone one step further with its new land use bill. Senate Bill 375: Redesigning Communities to Reduce Greenhouse Gases, is the first to try to reduce GHG by curbing urban sprawl. The bill requires the California Air Resources Board to set regional passenger vehicle GHG emissions targets. It also requires each of the 18 Metropolitan Planning Organizations (MPO) to create a plan to reach these targets. The strategies will cover transportation and housing policies, and regional land-use plans. The bill provides financial incentives and a streamlined process for environmental permits for projects that are consistent with emissions targets.[82]

Most supporters of VMT reduction policies would agree that complementary and comprehensive programs work better than several smaller, unconnected programs. This need for oversight and facilitation could be met by the federal government. Congress could use the reauthorization of the federal transportation bill as an opportunity to help states coordinate their land use and public transportation policies. The federal government could provide more funding or streamlined approval processes for projects that meet minimum VMT reduction guidelines. It could make public transit funding a priority over highway funding, or at least increase the funding share for operational expenses, which would promote transit projects. The federal government could also set national VMT reduction goals and issue advisory best practice guides. This would give states the information they need to make informed decisions about transportation alternatives and land use, including information about job production potential, GHG emissions reductions, fuel savings for residents, and other economic benefits.

3. Conclusion

States have a central role to play in developing and implementing transportation policy and in crafting programs to reduce GHG emissions from that sector. As new federal policies to reduce emissions from transportation are put in place, the contributions of states and their role as co-regulators, innovators, and implementers should be recognized. This paper identifies potential areas of conflict and cooperation in state and federal policies affecting this sector, outlines some possible options for resolving potential conflicts, and identifies areas for future research and analysis.

[82] Cal. S.B. 375 (2009) *available at* http://leginfo.ca.gov/cgibin/postquery?bill_number=sb_375&sess=CUR&house=B&author=steinberg