Sierra Club CNRCC Resolution:

Pay-As-You-Drive (PAYD) Auto Insurance to Reduce Driving by 8%

This resolution has NOT been passed.
By Steve Raney, Cities21, with help from many others
First version May 2010, current draft date: July 6, 2010.

The California Nevada Regional Conservation Committee of the Sierra Club (CNRCC) hereby augments its current support for driving/parking pricing/incentives that will reduce driving/GHG. Added is support for "effective" statewide PAYD insurance.

In order to reduce statewide driving CO_2 by 8%, mandate PAYD insurance meeting the "Ceres/NRDC silver or gold standard" for all licensed California drivers, phased in over a five-year period, with $50M in financial incentives for faster-moving insurers. Projected annual CO_2 reduction for California is 8.4M tons (68M tons nationwide).

I. Background Information:

With PAYD, drivers who drive less pay less car insurance, and drivers who drive more, pay more car insurance. Currently, drivers who drive less subsidize insurance for drivers who drive more, creating a perverse incentive to drive more and to emit more GHG. (According to EDF, "traditional insurance offers 15 percent or less mileage-based discounts that don't typically capture the full benefit [to insurance companies] of driving fewer miles.") This policy will create a more economically efficient driving insurance market by "internalizing" part of the "negative economic externality" of emitting too much harmful GHG.

Current twice-per-year auto insurance payments are perceived as a "sunk cost." PAYD requires more-frequent payments, transforming the sunk cost into a variable cost, which then motivates reduced driving. The perceived increase in variable driving costs is roughly equivalent to a $1.67 per gallon gas price increase (see appendix below).

The Brookings/Hamilton Project's PAYD report has concluded that "effective" implementation of PAYD will reduce driving and driving CO_2 by 8%. VTPI suggests that the reduction could be even larger than 8%.

Envisioned is a vigorous, competitive private auto insurance market based on a new and improved underwriting paradigm that saves drivers money. The new underwriting paradigm comprehends individual driver risk factors. All things being equal, if you are a bad or dangerous driver, you will pay more for car insurance than a safe driver.

<u>Unfair, actuarially-flawed auto insurance underwriting</u>

The auto insurance industry clings to an insurance underwriting paradigm that the state has concluded is both unfair and actuarially unsound. The California Insurance Commissioner issued a 1994 report concluding that the insurers were not basing rates on actuarially sound and defensible bases and that the greatest discrepancy between actual rates and actuarially sound rates was on VMT (vehicle miles traveled). "Most insurers are currently using rating practices that appear to be arbitrary." "The failure of current rating practices to assign enough importance to the number of miles a vehicle is driven was a major source of premium variations." [From: *Impact Analysis of Weighting Auto Rating Factors …*]

Berkeley transportation consultant Mark Brucker's analysis shows:

> For California, my analysis of rate-setting for some of the biggest insurers shows very low relation of charges to VMT, that the rates are set largely based on weak proxies for safety, such as marital status, gender, location of home (which isn't even necessarily closely related to where you drive), if you have other policies with the company, how long you've been with the company, years of experience.... State Farm, e.g., has two mileage bands only, split at 7,500 miles. From a past auto insurance underwriting

analysis, Farmers weights mileage as 5% of the factors affecting rates, Allstate 8%, State Farm 12%. But in each case the actual effect of mileage is substantially decreased by having very little difference between the rates for low and high mileage drivers. Farmers would shift rates by less than 2% for an increase from 3,000 to 10,000 miles per year. For State Farm it was less than 3% except 3% for collision (less for bodily injury and property damage). AAA of Soouthern California appears to charge less in many cases for those who drive higher mileage-e.g. much less for driving over 50,000 miles than 40,000-50,000 and somewhat less for 50,000 than for 20,000-25,000 on bodily. They also, in the most recent filing I have, show they base rates more on gender than any other factor for Comprehensive. There is actually a very strong positive correlation between VMT and comprehensive costs.

A number of years ago I tried to assess how much other factors were overweighted vs. mileage based on data from British Columbia on actual costs vs. mileage. My conclusion was that factors only indirectly related to costs such as academic records, gender, marital status, years with company etc. were overweighted by from 250-500% by State Farm, 370-800% by Allstate and 1100-1500% by Farmers.

How to bring about effective implementation

There are a number of early PAYD insurance policies, state regulations, and state laws, including Progressive Insurance's policy, General Motors' OnStar policy, MileMeter's policy, Puget Sound's pilot, Oregon's state law with tax benefits for insurers who develop such policies, and California's 2009 voluntary PAYD statewide insurance regulation. In addition, "all the other big insurance players - AAA, Allstate, State Farm, Hartford, Erie Insurance, MetLife, Safeco, American Family, Farmers – are in development or beta mode." (from Telematics Update). PAYD innovation has also occurred in Canada, Netherlands, UK, Japan, Finland, Australia, Germany, and South Africa. As a whole, these pioneering efforts have not been effective and have reduced driving by less than 0.1% in the areas where they are applicable.

To be effective, the following is required:

- Mandatory statewide implementation. Voluntary PAYD programs have not been effective in reducing GHG.
- Insurance policies must have the proper features to properly motivate drivers to save money by driving less. NRDC, Ceres, EDF, Victoria Transport Policy Institute, Institute for Transportation and Development Policy, the Conservation Law Foundation, and Calstart have developed a PAYD standard. Under this standard, "gold" and "silver" policies are effective.
- This proposal comprehends that auto insurers are very happy (and profitable) with current actuarially-unsound underwriting and, because of a cost barrier to switching to actuarially-sound underwriting, will fight to maintain the status quo. To bring about an efficient auto insurance market, the state will have to subsidize insurers in developing PAYD policies.
  - Insurers have not promoted PAYD policies effectively. Insurers fought the 2009 attempt to impose PAYD regulations in California. Experts have concluded that insurers must be financially incentivized to create PAYD products as it may take each insurer upwards of $3M to create such policies. Therefore California must mandate PAYD insurance for all licensed California drivers and California must motivate insurers to develop such policies. For motivation, the state should pay insurers $10 for each CA driver who converts to a PAYD policy, for the first 5M CA drivers who switch. Insurer policies will only qualify for $10 switcher payment if they are offered in all other states where the insurer offers auto policies and where the state allows PAYD. This incentive will create a "race" between the insurance companies to convert policies rapidly. The $50M in insurer financial incentives costs only a one-time $2.27 per licensed CA driver. The $50M could be funded from many sources, including via increased auto registration fees.
  - "To my mind, getting widespread implementation of PAYD insurance is the single most effective thing that America can quickly do to reduce traffic and pollution from driving. It would save the majority of households money, cut dependence on oil imports, reduce accidents and health costs, and provide early action to address global warming. If all car insurance premiums were put on a PAYD basis, it could cut greenhouse gas emissions by 8-15%. That's huge. **But getting this result will require government action and incentives to overcome the inertia of the insurance marketplace and state insurance regulations**." — Michael Replogle, former Transportation Director of Environmental

Defense (300,000 members); Global Policy Director and Founder of Institute for Transportation and Development Policy.

Implementation Details

- Financial penalties should be created to ensure 100% of auto insurance policies are PAYD after 5 years.
- Proposed is sound and flexible underwriting based on individual driver risk factors. The PAYD silver/gold standard mentioned above provides substantial opportunity for private sector insurance companies to compete on product features and underwriting skills. Traditional auto insurance underwriting encompasses three separate prices: liability, collision, and comprehensive (comprehensive insures you for losses such as theft of your vehicle). Liability and collision are somewhat obviously positively linearly correlated with VMT. It is less obvious, but also true that comprehensive coverage is also positively linearly correlated with VMT (a VTPI finding).
- Insurer PAYD mileage reporting may be accomplished via:
  a) newly installed in-car hardware such as Progressive Insurance's MyRate device that connects via industry standard cable to in-vehicle computers for odometer readings and then transmits mileage readings via cellular telephony,
  b) GM OnStar hardware is already fully capable without modification,
  c) future US DOT standard "IntelliDrive" in-vehicle telematics hardware will also be fully capable,
  d) Ford Sync is fully capable,
  e) frequent self-reporting with infrequent audits verifying odometer readings.
- The state should collect and report data on progress towards bringing about 100% driver adoption of effective PAYD. The state should collect and report data on VMT per driver, tracking the resultant VMT decrease relative to the 8% or greater projected reduction.
- The issue of handling accidents involving uninsured motorists should be handled by this policy's implementation.
- The California state insurance commissioner shall be encouraged to advocate for the adoption of this climate protecting policy in other states.

II. Arguments in Favor of Resolution:

1. This is a very cost-effective CO2 reduction policy. If a ton of CO2 is valued at $30, then the single $50M policy implementation cost will provide ANNUAL $253M in CO2 reduction benefits. (Annual CA VMT is significantly understated and is probably more than 280B):

CA population	37,000,000
CA licensed drivers	22,000,000
VMT per capita per year	5,701
CA annual VMT	210,937,000,000
Annual CA CO2 driving tons (20 mpg, 1 lb CO2 per mi)	105,468,500
8% reduction:	8,437,480
Value of annual reduction at $30 per ton	$253,124,400

Per capita VMT: http://www.fhwa.dot.gov/ohim/onh00/bar4.htm

Twelve of 33 US state climate action plans explicitly recommend PAYD insurance implementation (AZ, CA, CO, MD, ME, MN, NH, NM, NC, RI, VA, and VT).

2. The significant vehicle miles traveled reduction provides an additional $6.0B per year in benefits beyond GHG reduction from reduced traffic congestion, reduced local pollutants (particulates, etc), improved health, reduced dependence on foreign oil and associated military spending, and reduced accidents. [Calculations from the Brookings Hamilton Project PAYD report].

3. Says Brookings PAYD study author Pascal Noel. 64% of California households would have lower premiums under PAYD, with an average savings of $276 annually per vehicle. Low income residents, in particular, would benefit.(From: http://latimesblogs.latimes.com/bottleneck/2008/08/pay-as-you-driv.html). Assuming 22M autos in CA, one for each of 22M licensed drivers, the annual California consumer savings is $6.0B.

4. The 8% driving reduction reduces demand for expensive highway capacity increases.

5. The peer-reviewed Moving Cooler report concludes that we must reduce driving (vehicle miles traveled) to meet climate objectives. In the San Francisco Bay Area, ABAG/JPA's Ted Droettboom has stated that even with full implementation of regional smart growth initiatives and full achievement of CAFE, ABAG regional model forecasting cannot meet 2035 CO2 reduction without driving pricing mechanisms that will reduce travel demand.

6. "Because PAYD provides diverse benefits, it can gain support from diverse stakeholders. For example, PAYD pricing is recommended by actuaries, economists, the National Organization for Women, consumer advocates, the U.S. Department of Transportation, various cities and regional governments, environmental groups, energy conservation advocacy organizations, and the Canadian National Motorists Association." – VPTI

7. "PAYD pricing provides greater total economic, social, and environmental benefits than emission reduction strategies that simply increase vehicle fuel efficiency. As a result, PAYD pricing is a very cost effective emission reduction strategy." – VTPI

Table 1 **Comparing Emission Strategies** (Litman, 2007)

Planning Objective	PAYD	Alternative Fuels and Efficient Vehicles
Congestion Reduction	✓	
Road and Parking Cost Savings	✓	
Consumer Cost Savings	✓	
Reduced Traffic Accidents	✓	
Improved Mobility Options	✓	
Energy Conservation	✓	✓
Pollution Reduction	✓	✓
Physical Fitness & Health	✓	
Land Use Objectives	✓	

PAYD reduces total vehicle mileage and increases use of alternative modes, and so supports many planning objectives. Alternative fuels and fuel efficient vehicles provide fewer benefits.

8. PAYD eliminates gender-based auto insurance price discrimination. The National Organization of Women supports PAYD auto insurance because the current system discriminates against women. "Who are better drivers: men or women? On one end of the stereotype spectrum, some contend that men have natural driving skills and are far better at parking. On the other end, some argue that women are more cautious and less reckless behind the wheel. Government figures show the truth - men and women have the same number of accidents per million miles driven. Driving myths and stereotypes recognize only that men tend to have more car accidents but overlook why - men drive more miles per year on average than women. That fact accounts for the higher accident rate among men than that of female drivers of the same age group. In spite of the relevance of the number of miles driven to collision involvement, auto insurers charge adult men and women the same annual car insurance premiums, which means that women, on average, pay more per mile to insure their vehicles than men do." From: http://www.insurancerate.com/milemeter-pay-by-mile-car-insurance.php

9. PAYD is a "pain-free" climate protection policy.

10. PAYD provides a compelling application as part of US Department of Transportation's "IntelliDrive" telematics effort. More specifically, IntelliDrive's "tolling and e-payment" capabilities enable simple, low-cost PAYD implementation.

11. Using terminology from the Reason Foundation's book, *Mobility First*, this PAYD policy:

- Reduces traffic congestion, increasing worker productivity (less time stuck in traffic results in more time for work and family) and hence, increases US competitiveness in the international economy.
- Reduces traffic congestion, improving wellbeing (less time stuck in traffic results in more time for family & self).
- Uses a more accurate pricing mechanism to allow the surface transportation market to adjust to create a more efficient market, overcoming a status-quo-maintaining (stasist) auto insurance technocracy.

12. An 8% reduction in rush hour highway traffic will provide a very substantial improvement in commuting to many Americans.

III. Arguments in Opposition:

1. There are a number of opposing arguments that are based on the denial of scientific evidence for human-caused climate change. We refer climate-deniers to Nobel-prize winner Stephen Schneider's book, "Science is a Contact Sport," as well as the May 2010 special issue of NewScientist Magazine entitled "Living in Denial" that explains the psychology of climate denial.

2. In California, many insurers fought effective PAYD regulation in favor of ineffective PAYD. Surely insurers that are laggards in PAYD will be likely to fight a statewide PAYD mandate. The false objection that PAYD somehow restricts private sector firms from competing has been previously addressed in Background Information above.

Effective PAYD will create a major insurance market disruption with some companies being winners and some being losers. Such market disruptions will generally be fought within a capitalistic system, no matter that a huge societal benefit is created. In addition, there is some small threat that automakers (who control the telematics hardware platform) will "disintermediate" insurers, IE take over the insurance business (although it is far more likely that automakers will partner with insurers).

Early adopter firms such as Progressive, Unigard, MileMeter, and GM could potentially be brought in as allies in favor of mandatory PAYD, as they could potentially obtain a competitive advantage over industry laggards.

By reducing the amount of driving that occurs, PAYD will lead to reduced auto insurance industry revenues. However, it is not clear what the impact will be on industry profits.

3. "Libertarian-sounding arguments intending to support the status quo of the current inefficient transportation market and willfully ignoring negative economic externalities." The US private vehicle surface transportation market is highly regulated and poorly regulated and has many perverse subsidies. This market is by no means an efficient or "free" market, hence objections based on "keeping markets free" are not valid.

4. It is hard to change a system that people are used to.

5. "Odometer auditing is an invasion of privacy." Response from VTPI: "Odometer readings are already collected during vehicle servicing, vehicle sales, and crash investigations; odometer auditing simply standardizes this practice. Odometer auditing does not identify when or where a vehicle has been driven, or other private information."

IV. Who has approved this resolution?

No one yet.

VI. Strategies and Action Plans:

Sierra Club's Sacramento Lobbying Team should "shop this resolution around" to a) sympathetic organizations such as NRDC, Ceres, and EDF and b) sympathetic state legislators. The need for large, cost-effective climate protection is pressing. In order to meet 2020 and 2035 CO2 reduction targets, palatable policies such as PAYD should be enacted into legislation ASAP.

In addition, moves to lower CO2 reduction targets in SB375 target-setting should be countered by the introduction of cost-effective policies such as PAYD that show that large CO2 reduction is achievable with large net economic benefit. The notion that SB375 targets must be reduced is an unwarranted self-fulfilling prophecy.

“The assumption that the costs of climate recovery will be prohibitively high simply does not stand up to scrutiny. A study by McKinsey & Company last year documented large opportunities to reduce U.S. emissions by 2030 that could be achieved with a negative cost — meaning that these represent investment opportunities that would increase the productivity of the overall U.S. economy.” – Carl Pope, Sierra Club

Re the task of reducing carbon emissions. “There is a fundamental difference in a mind-set that perceives what is needed as massive sacrifice and one that views the challenge as accelerating an economically attractive and sorely needed transition with a carefully designed program of market reform.” – Carl Pope, Sierra Club

VII. PAYD References:

- Entertaining & informative youtube video and petition drive for PAYD insurance in British Columbia: http://www.paydpilot.ca .
- The Hamilton Project, “Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity,” http://www.brookings.edu/~/media/Files/rc/papers/2008/07_payd_bordoffnoel/07_payd_bordoffnoel.pdf
- “Impact Analysis of Weighting Auto Rating Factors to Comply with Proposition 103,” by Hunstad, Bernstein, and Turem. California Department of Insurance, December 1994. http://www.insurance.ca.gov/0400-news/0200-studies-reports/0600-research-studies/auto-policy-studies/executive-summary.cfm
- “Drive More, Pay Less,” http://switchboard.nrdc.org/blogs/jhorner/drive_less_pay_less_the_new_pa.html
- “Pay-As-You-Drive Insurance Product Rating System” by Ceres, NRDC, EDF and others. http://www.ceres.org/Document.Doc?id=512
- Failure of CA PAYD regulation: “California Misses a Big Chance with Pay-As-You-Drive,” http://switchboard.nrdc.org/blogs/jhorner/california_misses_a_big_chance.html .
- “Pay as You Drive Pricing Backgrounder,” VTPI, http://www.vtpi.org/paydbc.pdf
- “Pay As You Drive: The Future of Auto Insurance,” by Todd Litman, VTPI, NAIC Annual Meeting, 12 June 2009. PPT http://www.naic.org/documents/committees_ex_climate_payd_auto_insurance.pdf
- Jason E. Bordoff (2008), Pay-As-You-Drive Car Insurance, Brookings Institution (www.brookings.edu/articles/2008/spring_car_insurance_bordoff.aspx).
- Ceres (2009), Drive Less, Pay Less: Environmental and Transportation Groups Unveil Performance Standard for Pay-As-You-Drive Auto Insurance, Ceres Investors and Environmentalists for Sustainable Prosperity (www.ceres.org); at www.ceres.org/Page.aspx?pid=1157 .
- Stephen J. Dubner and Steven D. Levitt (2008), “Freakonomics: Not-So-Free Ride,” New York Times, 20 April 2008, (www.nytimes.com/2008/04/20/magazine/20wwln-freakonomics-t.html).
- Allen Greenberg (2009), Costs and Benefits of Varying Per-Mile Insurance Premiums Based Upon Measured Risks Specific to Each Mile Driven, TRB Annual Meeting (www.trb.org); at www.vtpi.org/AG_PAYD.pdf.
- Robin Harbage (2009), Usage Based Insurance-From Theory to Practice, Casualty Actuarial Society (www.casact.org); at www.casact.org/education/rpm/2009/handouts/harbage2.pdf .
- Todd Litman (1997), “Distance-Based Vehicle Insurance as a TDM Strategy,” Transportation Quarterly, Vol. 51, No. 3, Summer 1997, pp. 119-138; at www.vtpi.org/dbvi.pdf .
- METRO (2007), Pay-as-You-Drive (PAYD) Insurance Pilot Project, King County Metro (www.metrokc.gov/exec/news/2007/pdf/Payasyougofacts.pdf).
- William Vickrey (1968), “Automobile Accidents, Tort Law, Externalities and Insurance: An Economist’s Critique,” 33 Law and Contemporary Problems, pp. 464-470; at www.vtpi.org/vic_acc.pdf .

- Frost & Sullivan Report, Pay As You Drive (PAYD) – New Age Vehicle Insurance Based on Core Telematics Foundation, June 6 2007, http://www.frost.com/prod/servlet/market-insight-top.pag?docid=99661873. It is interesting to consider how the NRDC/Ceres gold/silver PAYD standard would support innovative "youth safety" underwriting by Norwich Union. N.U. charges risky 18-23 year-olds by time of day (and possibly by type of road driven). Peak hour has one price. Driving in the dangerous late night driving hours (11PM-6AM) is charged at a very high rate of $1.50 per hour. Driving during safer daylight off-peak hours is charged at only $.07 per hour. I would expect that N.U. might have to modify their underwriting to bring about VMT reduction while also achieving safer driving. N. U.'s underwriting can be more aptly characterized as "pay how you drive."
- Telematics Update, Can Telematics Reinvent Auto Insurance?, March 2010. http://social.telematicsupdate.com/industry-insight/can-telematics-reinvent-auto-insurance. The cost per year for Progressive's MyRate in-car cellular hardware is $60.
- State Environmental Resource Center, PAYD Talking Points, http://www.serconline.org/payd/talking.html. "Two drivers of the same age, sex, and driving history, who drive the same model car, have an equal chance (0.0003% per mile driven) of getting into an accident. Driver A uses his/her car to drive to work for an average of 30 miles per day, plus another 50 miles on the weekend. This amounts to 5,200 miles per six-month policy period. Driver B rides the bus or bikes to work to decrease gas and parking costs and the hassles of driving and parking downtown. Driver B averages 30 miles total per week, totaling 780 miles per six-month policy period. With traditional time-based insurance, the two drivers pay the same amount per six-month policy period, but Driver A is 6.7 times more likely to have an accident than Driver B. Assuming each driver pays $300 every six months for car insurance, Driver A is paying six cents per mile of coverage, while Driver B is paying more than 38 cents per mile. Driver A is 6.7 times more likely to have an accident, yet pays 83% less per mile than Driver B. This example clearly illustrates that the current insurance pricing system does not fairly account for risk, and forces Driver B to subsidize Driver A."
- Wikipedia (2009), "Usage-Based Insurance," Wikipedia. This article has a bit of a straw man PAYD scheme, imagining strange potential drawbacks. http://en.wikipedia.org/wiki/Usage_based_insurance.
- Science as a Contact Sport: Inside the Battle to Save the Earth's Climate, Stephen Schneider. http://stephenschneider.stanford.edu/SAACS/saacs_book.htm
- NewScientist Magazine Special Report: Living in Denial, May 2010, http://www.newscientist.com/special/living-in-denial

Appendix: Perceived pricing / behavior change motivation of various policies:

policy name	perceived gas price increase per gallon	expected VMT change	employer perceived economic impact	commuter perceived economic impact	Applies to	Reference
$14 per ton carbon allowance	$0.13	0%	large loss	small loss	All VMT!	extrapolate Hamilton project
$50/ton carbon allowance	$0.45	2%	larger loss	medium loss	All VMT!	extrapolate Hamilton project
$0.05 VMT fee (much more pain than current gas tax)	$1.00	5%	neutral	medium loss	All VMT!	extrapolate Hamilton project
$200/ton carbon allowance	$1.81	9%	huge loss	big loss	All VMT!	extrapolate Hamilton project
Pay per mile, $1,000/yr ins policy	$1.67	8%	neutral	neutral	All VMT!	Brookings Hamilton Product PAYD report: http://www.brookings.edu/opinions/2009/0212_pay_as_you_drive_bordoff.aspx
$4 cashout	$3.33	10%	$880M CA loss	nice gain	commuting only	APA Book: Parking Cashout by Shoup. VTPI has this too
$2 parking charge + $4 cashout	$5.00	23%	in-fill profit	progressive green redistribution	commuting only	$2 Daily Workplace Parking Charge + $4 Cashout. http://www.cities21.org/TRB_Paid_Parking2.pdf
Moving Cooler 2050 $5/gal gas tax increase	$5.00	28%	huge loss	big loss	All VMT!	Moving Cooler report: http://www.movingcooler.info/

20 mpg is assumed. Sure CAFE will increase, but actual mpg isn't very high these days.

Politically, employers perceive the short run negative impact, rather than large long-term benefits

A carbon allowance creates a price per ton of CO2. The Federal Kerry-Lieberman energy bill does not price transportation carbon.