

First Name: Todd
Last Name: Shuman
Email Address: tshublu@yahoo.com
Affiliation: Analyst, Wasteful UnReasonable Use (WURU)

Subject: WURU Comments on CA ARB SLCP Strategy
Comment:

To CA ARB,

On behalf of Wasteful Unreasonable Use (WURU), I request that CA ARB use a yr2013 Intergovernmental Panel on Climate Change (IPCC) 20-year interval methane Global Warming Potential (GWP) constant for all of its methane-to-CO2 equivalency conversion calculations, as well as require the use of the most current IPCC 20-year interval methane GWP constant in all of its various programs (cap and trade [c&t], compliance offsets under c&t, greenhouse gas [GHG] inventories, existing compliance offset protocols under c&t, future compliance offset protocols that have been proposed for incorporation into c&t, pollution permits, etc.)

I request that CA ARB institute mandatory annual dairy manure and enteric fermentation methane emissions reduction targets of 25% by 2020, 50% by 2025, and 75% by 2030.

I make such requests for the following reasons: the IPCC (5th, 2013) concludes that at the 10-year timescale, the current global release of methane from all anthropogenic sources exceeds (slightly) all anthropogenic carbon dioxide emissions as an agent of global warming; that is, methane emissions are as significant as carbon dioxide emissions in driving the current rate of global warming. At the 20-year timescale, total global emissions of methane are equivalent to over 80% of global carbon dioxide emissions. (At the 100-year timescale, current global methane emissions are equivalent to slightly less than 30% of carbon dioxide emission.)

[Source: Intergovernmental Panel on Climate Change, Climate Change 2013: The Physical Science Basis, page 719, Figure 8.32, <https://www.ipcc.ch/report/ar5/wg1/>]

Because of the above information, all anthropogenic sources of methane emission need to be dramatically reduced as quickly as

possible in order to decelerate further short-term global warming. Continued rapid global warming could trigger the onset of positive climate change feedbacks that might dramatically accelerate the warming of our planet. Since the two biggest sources of anthropogenic methane emissions in California are enteric fermentation occurring within the stomachs of livestock and anaerobic dairy manure lagoons, these two sources need to be strictly regulated under mandatory emission reduction provisions in the near future.

Sincerely,

Todd Shuman, Senior Analyst, Wasteful Unreasonable Use,
2260 Camilar Dr, Camarillo, CA 93010, 805.987.8203, tshublu@yahoo.com

Attachment: Original File Name: Date and Time Comment Was Submitted: 2015-10-27 12:21:36

First Name: Todd
Last Name: Shuman
Email Address: tshublu@yahoo.com
Affiliation: Analyst, Wasteful UnReasonable Use

Subject: Supplemental comments concerning CA ARB and SLCP Reduction Strategy
Comment:

These comments below supplement my previous oral and written comments that I have submitted concerning this process. What follows are my written comments based largely on my testimony at the CA ARB SLCP Reduction Draft Strategy on October 14, 2015 in Diamond Bar, CA at the CA ARB SLCP Reduction Strategy Workshop.

1: CA ARB needs to align its methane GWP policy across all CA ARB policy spheres with recent legislative and executive recognition of the importance of considering 20-year interval methane GWP constants in evaluating methane's atmospheric heat-trapping impacts. This recognition has been recently enshrined into California state law, in AB 1496, Section 1(a).

2: Please specify in the EA very specifically why CA ARB is not, will not, and/or cannot use a 2013 IPCC (AR 5th) 20-yr interval methane GWP when preparing CA ARB-related GHG inventories and calculating other CO₂ equivalencies related to other CA ARB programs (cap and trade, offsets, pollution permits, proposed ACR offset protocols, etc).

3: I request that CA ARB prepare and present an alternative statewide GHG inventory utilizing 2013 IPCC (AR5th) 10-year interval and 20-yr interval methane GWP constants side-by-side with a statewide GHG inventory utilizing the 2007 IPCC 100-yr methane GWP constant currently used by CA ARB.

4: Specify in the EA what barriers exist to incorporating enteric emissions from livestock into CA ARB programs (such as cap and trade), and why enteric emissions are not already incorporated into these programs.

5: The cap and trade program should include enteric emissions from dispersed livestock as a source of methane emission that must be significantly and rapidly reduced. Ranchers and smaller dairy owners who produce livestock in relatively dispersed locations should be required to purchase pollution permits and offset credits just like any other GHG emitter.

6: CA ARB should enact significant mandatory annual reduction targets for methane emissions associated with anaerobic manure lagoons and enteric emissions.

7: The annual methane emission reduction targets specified in the Draft Strategy for dairy manure should also be applied to enteric emissions (20 percent by 2020, 50 percent by 2025, and 75 percent by 2030), though these targets should be mandatory for both dairy manure and enteric fermentation. I recommend increasing the reduction target from 20 percent to 25 percent for yr 2020. I feel strongly that the CA ARB proposed annual emission reduction of only 5 methane-related MMTCO₂e for dairy and livestock enteric fermentation (Table 6, page 43) by 2030 is embarrassingly low and ethically unacceptable.

8: Reliance upon weak, voluntary dairy industry methane reduction targets is grossly inadequate and ethically irresponsible, given the speed and scale with which global warming impacts are manifesting themselves. CA ARB needs to lead, not follow, concerning the matter of enteric emissions. CA ARB should be prodding the industry to fund necessary independent research in order to enable compliance with mandatory annual methane reduction

targets of 25 percent by 2020, 50 percent by 2025 and 75 percent by 2030.

9: CA ARB should require the dairy and livestock industry to fund further independent research that explores the viability of methane gas bio-filtration/bioreactors at dairy and beef-product CAFOs, as well as feed/drink-accessible cow methane respirators. CA ARB should also require that independent research into other significant methane-reduction strategies be funded at significant levels by private industry. No public funding should be used for any of this research. No further Greenhouse Gas Reduction Fund (GGRF) resources should be allocated to subsidizing the dairy and livestock industries in any manner, due to the intrinsically anti-social and anti-ecological methane-emission-related consequences of these industries.

10: CA ARB should modify any American Carbon Registry offset protocols currently in use and up for consideration to incorporate either an updated 10-year interval or 20-year interval methane GWP constant. ACR protocols retain a very low, outdated 100-year interval methane GWP constant to preserve carbon credit fungibility over a 100-year period. It is irresponsible for CA ARB to concur with such narrow economic logic in the face of the disturbing climate change-related effects increasingly appearing on our rapidly-warming planet.

11: Mandatory carbon credit insurance should also be incorporated into the cost of any carbon offset credit sold to enable new scientific information to be rapidly reflected in updated and revised SLCP GWP constants.

12: Claims made by previous commenters concerning the methane-related emission of grass-fed versus grain-fed livestock are questionable. Various claims and the research supporting such claims conflict within the scientific literature. It is not clear that enteric emissions from livestock on pasture are less than livestock enteric emissions from livestock in CAFOs.

Moreover, claims concerning the value of pasture-based dairy operation concerning soil carbon sequestration are especially questionable. Typically, the effective GHG impact of enteric emissions occurring on such operations have been discounted in the

most frequently-cited studies by ignoring enteric emissions altogether or through the use of very low and outdated methane GWPs in the GHG-balancing methodologies of such studies.

Nonetheless, methane emissions from pasture-based operations will be less overall relative to CAFO dairy operations due to much smaller manure-related methane emissions and the smaller numbers of livestock that are typically involved. In this light, I concur with the C4RP&E June 10, 2015 comment: "Pasture-based systems stock fewer cows per acre than confinement systems, which reduces enteric emissions. 'The amount of methane emitted by animals is directly related to the number of animals, so that a more intensive farm will have higher emissions...'" Pasture-based dairy systems that involve low manure-related methane emissions and low numbers of livestock relative to current CAFO dairy systems are superior in terms of SLCP reduction value. In addition, water usage devoted to livestock and dairy production would also likely decline if pasture-based dairy systems become ascendant economically and the overall numbers of livestock in pasture-based systems remain cumulatively and substantially lower than in CAFO-based dairy systems.

Regardless, all livestock producers need to be treated like the operators of coal-fired electricity generation providers -- they need to be prodded into stopping the externalization of their private production-related environmental costs onto the broader societies and natural ecosystems on this planet.

Methane polluters should be taxed or fined for the methane pollution they generate, with the tax or fine based upon a methane-into-CO₂-equivalency conversion algorithm that incorporates a 10-year interval methane GWP (at best) or a 20-year interval methane GWP (at worst).

Sincerely,

Todd Shuman, Senior Analyst, Wasteful UnReasonable Use (WURU),
Camarillo, CA 805.987.8203, tshublu@yahoo.com

Attachment: Original File Name: Date and Time Comment Was Submitted: 2015-10-30 10:31:14
[Version with typographical errors corrected]

First Name: helen
Last Name: conly
Email Address: conlyhelen@gmail.com
Affiliation: CFROG Citizens for Responsible Oil & Gas

Subject: Lifespan of methane in atmosphere - community health
Comment:

Citizens for Responsible Oil & Gas, Ventura County
www.cfrog.org

October 30, 2015

To the California Air Resources Board (CA ARB),

Citizens for Responsible Oil and Gas (CFROG) supports the adoption and widespread use of a more scientifically-defensible methane GWP value that is consistent with methane's expected lifespan in the atmosphere. Since methane does not remain in the atmosphere for 100 years, it is not reasonable for CA ARB to continue using a methane GWP based upon a 100-year interval. Even use of a 20-year methane GWP is questionable, given that methane has an approximate atmospheric half-life of 7 years and a generally stated lifespan of 12 years. CA ARB use of a 10-year interval methane GWP makes the most sense to us, as such use would comport CA ARB policy with the actual science concerning methane and provide California with a strong, short-term policy lever to control the progression of global warming. Such a policy lever may be essential in the near future to help prevent the onset of positive climate change feedbacks that might dramatically accelerate the warming of our planet.

In any case, CFROG believes strongly that polluters should be required to pay for the methane pollution they generate, based upon a methane-into-CO₂-equivalency conversion algorithm that incorporates a 10-year interval methane GWP (at best) or a 20-year interval methane GWP (at worst). Whatever methane GWP constant is used should be based upon the most recent IPCC GWP values.

CFROG believes that these requests are reasonable and prudent for the following reasons.

1: Use of a 10-year methane GWP would promote a much more rapid

reduction in annual methane emissions than continued use of a long-interval methane GWP. Annual methane emissions need to be reduced as quickly as possible if we are to slow down the rapid rate of planetary warming that is occurring. The IPCC (AR5th, 2013) has concluded that at the 10-year timescale, the current global release of methane from all anthropogenic sources will exceed (slightly) all anthropogenic carbon dioxide emissions as an agent of global warming; that is, methane emissions will be as significant as carbon dioxide emissions in driving the rate of global warming in the near future. At the 20-year timescale, the IPCC notes that total global emissions of methane will be equivalent to over 80% of global carbon dioxide emissions. [Source: Intergovernmental Panel on Climate Change, Climate Change 2013: The Physical Science Basis, page 719, Figure 8.32, <https://www.ipcc.ch/report/ar5/wg1/>]

2: The rationale for using a short-interval methane GWP is provided within the CA ARB Draft SLCP Reduction Strategy document itself: "Climate change is no longer a problem to be defined simply in terms of a legacy we leave to our grandchildren or impacts in the year 2100. It is affecting us now, and will only accelerate in our lifetime. Due to the urgency of the issue, and the need to recognize the costs and benefits of addressing it immediately, we use 20-year GWPs in this report to quantify emissions of SLCPs." [See page ES-6.]

The rationale is also supported by recent actions taken by the California Legislature and Governor Brown. The State of California, in AB 1496, has now officially acknowledged the importance of considering the heat-trapping impacts of methane over a much-shorter timescale: "The people of the State of California do enact as follows: SECTION 1. The Legislature finds and declares all of the following: (a) Methane is . . . an extremely potent greenhouse gas, with 20 to 30 times the warming power of carbon dioxide over a 100-year period and more than 80 times over a 20-year period."

For these reasons, CFROG recommends that CA ARB adopt a yr2013 Intergovernmental Panel on Climate Change (IPCC) 10-year interval methane Global Warming Potential (GWP) constant for use in all annual, short, and mid-term interval methane-to-CO2 equivalency

conversion calculations.

CFROG further requests that CA ARB require the use of the most current IPCC 10-year interval methane GWP constant in all of its various programs (cap and trade [c&t], compliance offsets under c&t, greenhouse gas [GHG] inventories, existing compliance offset protocols under c&t, future compliance offset protocols that have been proposed for incorporation into c&t, pollution permits, etc.) with regard to all annual, short, and mid-term interval calculations, analyses, and emission values.

CFROG repeats for the record: methane polluters should be taxed or fined for the methane pollution they generate, with the tax or fine based upon a methane-into-CO₂-equivalency conversion algorithm that incorporates a 10-year interval methane GWP (at best) or a 20-year interval methane GWP (at worst).

Sincerely,

CFROG Board of Directors

John Brooks, Carol Holly, Helen Conly, Rain Perry, **Todd Shuman**
Policy Advisors to CFROG

Steve Colome PhD, Leif Dautch LLP, Kevin & Theresa Hartigan,
Richard Holly LLP, Mary Ann O'Connor, Sarah Otterstrom PhD, Vickie Peters,
Tomas Rebecchi, Diane Underhill, C Tom Williams PhD

Attachment: www.arb.ca.gov/lists/com-attach/82-slcpdraftstrategy-ws-WzhTNF0wADpVNV19.pdf Original File
Name: California Air Resources BoardCFROG comments10302015.pdf Date and Time Comment Was Submitted: 2015-10-30 12:24:53

From: "Segall, Craig@ARB" <Craig.Segall@arb.ca.gov>
To: Todd Shuman <tshublu@yahoo.com>; "McCarthy, Ryan@ARB" <ryan.mccarthy@arb.ca.gov>
Cc: Ara Marderosian <ara@sequoiaforestkeeper.org>; Esq. Megan E. Gallagher <megangallagher-law@gmail.com>
Sent: Monday, November 30, 2015 2:18 PM

Subject: RE: CORRECTED Proposal to adopt a mandatory annual methane emissions fee or fine on each ton of uncaptured, unburnt methane

Dear all,

Thank you for your submission. I am writing to confirm we have received it.

Craig

Craig Segall
Senior Staff Counsel
California Air Resources Board
(916)-323-9609
Craig.Segall@arb.ca.gov

From: Todd Shuman [mailto:tshublu@yahoo.com]
Sent: Friday, November 27, 2015 12:52 PM
To: McCarthy, Ryan@ARB
Cc: Segall, Craig@ARB; Ara Marderosian; Esq. Megan E. Gallagher
Subject: Fw: CORRECTED Proposal to adopt a mandatory annual methane emissions fee or fine on each ton of uncaptured, unburnt methane

To Ryan McCarthy, Science and Technology Policy Advisor, California Air Resources Board

Attached is our proposal for a methane emissions fee. We request that you consider this proposal as you and CARB move forward with the development of an Environmental Assessment concerning the Short-lived Climate Pollutants Reduction Strategy.

Sincerely,

Todd Shuman, Camarillo, CA 805.987.8203

----- Forwarded Message -----

From: Ara Marderosian <ara@sequoiaforestkeeper.org>
To: sierrarm@calepa.ca.gov; nancy.mcfadden@gov.ca.gov; secretary@resources.ca.gov; craig.segall@arb.ca.gov; mary.nichols@arb.ca.gov
Cc: exsec@ios.doi.gov; cyrice@usbr.gov; ecurtis@usbr.gov; pfujitani@usbr.gov; Todd Shuman <tshublu@yahoo.com>; Mike Hudak <mikehudak@binghamtonwireless.com>; MeganGallagher-Law@gmail.com; alison@sequoiaforestkeeper.org
Sent: Monday, November 23, 2015 2:52 PM
Subject: CORRECTED Proposal to adopt a mandatory annual methane emissions fee or fine on each ton of uncaptured, unburnt methane

23 November 2015

To California Governor Jerry Brown, Mary Nichols, Chair of California Air Resources Board (CARB), Secretary of California Natural Resources Agency John Laird, State Senator Kevin De Leon, Asm. Toni Atkins, State Senator Ricardo Lara, Asm. Tony Thurmond, Asm. Dar Williams, State Senator Fran Pavley, Ryan McCarthy (Science & Technology Policy Advisor, CARB), Craig Segall (Senior Staff Counsel, CARB):

Greetings,

Attached is the CORRECTED proposal, submitted Sunday, November 22, 2015 9:41 PM by Sequoia ForestKeeper (SFK) and Wasteful UnReasonable Use (WURU), and Megan E. Gallagher, Esq. (Attorney at Law), for California Air Resources Board to adopt a mandatory annual methane emissions fee or fine on each ton of uncaptured, unburnt methane.

We would appreciate a receipt of submission. If you have questions, please don't hesitate to contact us. Thank you.

Sincerely,

Mr. Ara Marderosian, Sequoia ForestKeeper®
P.O. Box 2134 Kernville, CA 93238
(760) 376-4434 ara@sequoiaforestkeeper.org

Todd M. Shuman, Wasteful UnReasonable Use
Camarillo, CA, 805.987.8203, 805.236.6456, tshublu@yahoo.com

Megan E. Gallagher, Esq. Attorney at Law, Adjunct Professor, MeganGallagher-Law@gmail.com 916.420.5110

From: "Segall, Craig@ARB" <Craig.Segall@arb.ca.gov>
To: Todd Shuman <tshublu@yahoo.com>; "McCarthy, Ryan@ARB" <ryan.mccarthy@arb.ca.gov>
Sent: Wednesday, December 16, 2015 1:34 PM
Subject: RE: CARB SLCP Reduction Strategy and New Aspirational Target of 1.5 degrees Centigrade. Re-formatted with blank lines added

Thank you for your feedback, Todd.

To answer your phone call question: We will release the EA for the draft plan along with the next draft plan – which we currently expect to happen in Q1 2016.

Craig Segall
Senior Staff Counsel
California Air Resources Board
(916)-323-9609
Craig.Segall@arb.ca.gov

From: Todd Shuman [mailto:tshublu@yahoo.com]
Sent: Wednesday, December 16, 2015 12:55 PM
To: McCarthy, Ryan@ARB; Segall, Craig@ARB

Subject: CARB SLCP Reduction Strategy and New Aspirational Target of 1.5 degrees Centigrade. Re-formatted with blank lines added

December 16, 2015

To Ryan McCarthy and Craig Segall, California Air Resources Control Board

In light of recent events in Paris (in particular, the adoption of the Paris Agreement at the UNFCCC COP21), I request that CARB immediately modify its draft “comprehensive strategy to reduce emissions of SLCPs” to strongly promote achievement of the aim of the Paris Agreement parties to limit global temperature increase to no more than 1.5 degrees Celsius above pre-industrial levels. Below is the language from the agreement concerning this objective and aim:

Annex PARIS AGREEMENT Article 2

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to *pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels* . . . (emphasis added).

To achieve such an aim, SLCP emissions will need to be dramatically reduced very soon.

Dr. Robert Howarth, a professor at Cornell University in New York, emphasized this fact in an article recently published in The Nation: “If we continue methane production at current rates, the world will run up against the 1.5 degrees limit in 12 to 15 years,” [<http://www.thenation.com/article/scientists-warn-paris-climate-agreement-needs-massive-improvement/>]

Dr. Drew Shindell, Professor of Climate Sciences at Duke University and Chair of the Climate and Clean Air Coalition (CCAC) Scientific Advisory Panel, also emphasized the urgency in aggressively targeting SLCPs for emission reduction: “we cannot get down to 1.5°C without targeting both SLCPs and CO₂. We can’t even keep below two degrees without targeting both,” [<http://www.ccacoalition.org/en/news/efforts-reduce-short-lived-climate-pollutants-strengthened-cop21>]

According to the 2013 IPCC AR5th, SLCPs already in the atmosphere will account for most of the positive atmospheric radiative forcing that will occur over the next 10 years. Even over the 20-year Time Horizon, roughly 60 percent of the positive radiative forcing that will occur in the atmosphere will be due to SLCPs. This will be only temporarily mitigated by the short-term negative radiative forcing effect of sulfur dioxide concentrations in the atmosphere. (See attachment summarizing the IPCC tables and figures that contain the information concerning positive radiative forcing agents.)

To strongly promote achievement of this aim, the CARB will need to modify its “comprehensive strategy to reduce emissions of SLCPs” and incorporate strong, substantive mandatory annual SLCP emission reduction targets for all SLCPs and all sources of SLCPs. CARB will also need to change its accounting mechanism concerning SLCPs to conform to the 2013 IPCC AR5th recommendations, which currently constitute the best available science concerning this matter. I recommend one set of state emission reduction targets for CO₂, and another set for the SLCPs, using SLCP radiative forcing values as the metric for the latter. In practice, this would be roughly equivalent to using a 10-year or 20-year interval GWP with regard to methane.

I recommend once again that CARB “put a price” on a ton of uncaptured, unburnt methane emission. This price should be substantial, so that it will drive meaningful reductions in methane emission in California in the near future. Such a price should also help

reduce the odds that another climate disaster (such as the one currently occurring in Ali-so Canyon) will again occur in California.

Sincerely,

Todd Shuman, Wasteful UnReasonable Use, Camarillo, CA 805.987.8203

From: Todd Shuman <tshublu@yahoo.com>

To: "erika.contreras@sen.ca.gov" <erika.contreras@sen.ca.gov>; "lawrence.cooper@sen.ca.gov" <lawrence.cooper@sen.ca.gov>

Cc: Kip Lipper <kip.lipper@sen.ca.gov>; Henry Stern <henry.stern@sen.ca.gov>; "mary.nichols@arb.ca.gov" <mary.nichols@arb.ca.gov>; Ara Marderosian <ara@sequoiaforestkeeper.org>; Jan Dietrick <jdietrick9@gmail.com>; Mike Hudak <mike.hudak@gmail.com>; Robert Warren Howarth <howarth@cornell.edu>; Prof Drew Shindell <drew.shindell@duke.edu>

Sent: Tuesday, January 12, 2016 3:32 PM

Subject: Concerns about SB 878, with regard to the proposed 2030 statewide methane reduction target

To State Senator Ricardo Lara,

We are forwarding to you a recent comment that was emailed to the California Air Resources Board (CARB) in mid-December, 2015. It stresses the urgency of rapidly and dramatically reducing methane emissions within California in order to help our species retain a chance of limiting global warming on our planet to no more than 1.5 degrees Celsius. We forward it to you, as it is germane to legislation that you will soon be introducing in the California Senate.

We have just reviewed the summary of your prospective legislation, SB 878. It calls for a 40 percent reduction in methane emissions by year 2030. This target is identical to the year 2030 statewide methane reduction target presented by the CARB in its September 30, 2015 Draft Short-Lived Climate Pollutants [SLCP] Reduction Strategy (page 41, 43, and 45, <http://www.arb.ca.gov/cc/shortlived/2015draft.pdf>). In that CARB document, there is a minimal and grossly inadequate voluntary reduction target proposed for the methane emission source of dairy and livestock enteric fermentation. Over the course of 15 years, methane emissions associated with dairy and livestock enteric fermentation (which constituted about 30 percent of all statewide methane emissions in 2013 [page 42]) will be largely ignored under the proposed CARB voluntary reduction target for this emission source.

In our view, such a result would be unconscionable and inexcusable. Given the rapid warming of our planet, especially in places such as the Arctic, significant and mandatory reduction targets for all sources of SLCP must be instituted and implemented by the CARB. Without wide institution and implementation of such measures, our planet will

heat up far beyond 1.5 degrees Celsius, with severe adverse impacts to both human and non-human residents on our planet in both the near and more-distant future.

If SB878 is enacted into law with a mandated statewide methane reduction target that largely conforms to the inadequate overall methane reduction target proposed in the CARB Draft SLCP Reduction Strategy, we believe that CARB institution and enforcement of significant, mandatory methane emission reduction measures for all major methane emission sources is unlikely to occur. We implore you to increase the proposed mandatory statewide methane emission reduction target in your bill from 40 percent to 67 percent by 2030, and specify that there be significant and mandatory reduction targets for all major sources of methane emission in California, including livestock and dairy enteric emissions.

Sincerely,

Todd Shuman, Senior Analyst, Wasteful Unreasonable Use, 2260 Camilar Dr.,
Camarillo, CA 805.987.8203

Ara Marderosian, Executive Director, Sequoia ForestKeeper, Kernville,
CA 760.378.4574

Jan Dietrich, Steering Committee, Ventura County Climate Hub, Ventura,
CA 805.746.5365

Dr. Mike Hudak, Author and Environmental Advocate, Binghamton, NY 607.240.5225

Appendix: December 16, 2015 letter to the CARB

From: Todd Shuman <tshublu@yahoo.com>

To: "ryan.mccarthy@arb.ca.gov"< ryan.mccarthy@arb.ca.gov>; "craig.segall@arb.ca.gov"< craig.segall@arb.ca.gov>

Sent: Wednesday, December 16, 2015 12:51 PM

Subject: CARB SLCP Reduction Strategy and New Aspirational Target of 1.5 degrees Centigrade

December 16, 2015

To Ryan McCarthy and Craig Segall, California Air Resources Control Board

In light of recent events in Paris (in particular, the adoption of the Paris Agreement at the UNFCCC COP21), I request that CARB immediately modify its draft “comprehensive strategy to reduce emissions of SLCPs” to strongly promote achievement of the aim of the Paris Agreement parties to limit global temperature increase to no more than 1.5 degrees Celsius above pre-industrial levels. Below is the language from the agreement concerning this objective and aim . . .