Specific Comments on ICCAC draft Final Report – V3

Note from Marnie: this document is intended to compile the specific comments received on the ICCAC draft Final Report as of 10:00 AM 12/04/08. Five members (Lanning, Tanner, and Woollums/Smith/Carisch) also sent general comments that are included in the document called "General Comments_ICCAC_draft_report_120408.pdf". I have attempted to place the specific comments in order of the report from beginning to end.
Note: This document has been updated to include comments submitted by Rick Ney on 12/04/08 and David Miller on 12/04/08.

ACKNOWLDEGMENTS

No comments received.

MEMBERS OF ICCAC

No comments received.

ACRONYMS AND ABBREVIATIONS

1. p. viii The NHTS definition needs better definition (Easler)

2. p. viii It seems like the OCA (Office of Consumer Advocate) appears somewhere in the report - perhaps include it in on this page (Easler)

EXECUTIVE SUMMARY

1. p. ES-1, missing paren on (ICCAC) in first sentence. (Easler)

2. Executive Summary, page ES-1. Does CCS intend by its reference to the "final decisional meeting" on November 10 that the ICCAC cannot make further decisions at its December 10 meeting? The IUB does not believe this is correct. (Tanner)

3. p. ES-1, sentence 2. Change "…the Iowa Climate Change Advisory Council ICCAC) is responsible for providing recommendations for reducing statewide greenhouse gases, while also considering the cost-effectiveness of different scenarios." To "the Iowa Climate Change Advisory Council ICCAC) is responsible for providing at least one scenario for reducing statewide greenhouse gases by 50% and policy options to accomplish this while considering the cost-effectiveness of different scenarios." (Miller)

4. p. ES-2: Second full sentence, should "existing states" be "existing state"? (Easler)

5. p. ES-2, Footnote re selection of 2005 as base year, suggest explaining that 2005 base year was also used for benefit-cost analyses of various policy options - e.g., generation resource costs evaluated by CRE subcommittee. (Easler)

6. From ES, second bullet, page 1-2:

"Evaluation of the direct costs and direct cost savings of the policy recommendations in Iowa. The ICCAC analyzed quantitatively the direct costs or cost savings of 38 of its 56 policy recommendations. Although the total net cost associated with the 38 policies analyzed is estimated at about $ 4.8 billion between 2009 and 2020, the weighted-average cost effectiveness of the 38 policies is estimated to be approximately $8.50/tCO2e reduced. Many of the policies are estimated to yield significant cost-saving opportunities for Iowans. Other policies will incur net costs."

Add: It should be noted that both the emission reduction estimates and the cost-benefit calculations contain significant uncertainty. (Ney)

Comments: The text of this bullet states that 38 policies were quantified. My count shows only 37 policies where both GHG reduction AND net cost are both quantified. TLU-6 presents a large GHG benefit of 17.7 MMtCO2-e but NPV and cost effectiveness are not quantified. TLU-6 GHG reductions should thus be removed from the calculation of overall cost effectiveness. Taking the $4.8 billion figure and $8.50/tCO2-e figure from the bullet yields an assumed GHG reduction of 564.7 MMtCO2-e. IF you subtract the 17.7 MMTCO2-e from TLU-6 and recalculate cost effectiveness the value would be $10.50/tCO2-e. As currently developed the figures are essentially treating the reductions from TLU-6 as a no-cost option. (Ney)

7. p. ES-2, Key Recommendations, first sentence, change "recommendations" to "policy options". First bullet, delete sentence "ICCAC recommends that the GHG Emission Inventory and Forecast be updated annually". Second bullet, first sentence, change "recommendations" to "options". Third sentence, delete "recommended". Last sentence, change "recommendations" to "actions". (Miller)

8. p. ES-2, Key Recommendations, third bullet point change to "recommendations" to "options". Change "The ICCAC analyzed…" to "With input from ICCAC, CCS analyzed…" (Miller)

9. p ES-3, Key Recommendations, fifth bullet point change references to "policy recommendations" to "policy options". (Miller)

10. p ES-3, Iowa GHG Emissions Inventory and Reference Case Projections, change "were subsequently approved" to "were subsequently received and filed". (Miller)

11. p. ES-3, first full bullet point, last sentence: "the 2020 emission reduction <u>under the 90% reduction</u> scenario is achievable [remove period] based on results. . . " (Easler)

12. p. ES-3, first paragraph under heading *Iowa GHG Emissions Inventory and Reference Case Projections***,** last sentence mentions "comments approved by the ICCAC" - suggest providing a reference to the appendix where these comments are contained. This comment carries over to other references later in the report (e.g., p. 1-8) (Easler)

13. Executive Summary, pages ES-2 and ES-3: The report states that the ICCAC recommends that the GHG EI be updated annually (page ES-2), and states on page ES-3 that the ICCAC recommends that "the state" report biennially to the Governor and the state legislature on the state's progress in reducing GHG emissions under these scenarios. The IUB does not recall that the ICCAC ever voted on these recommendations, which must be discussed by the ICCAC and voted on before they are included in the report. In addition, the IUB does not see the need for the EI to be updated annually because the Iowa DNR has its own emissions inventory that now includes GHGs, which it updates. The IUB does not know what CCS means when it refers to "the state" and does not know who would be able to provide this information to the Governor and Legislature. Therefore, unless the ICCAC affirmatively votes to include these recommendations, the IUB suggests they be deleted. (Tanner)

14. Page ES-3, first bullet point, insert the following as the second and third sentence. It could also be added to the end of the first paragraph on page ES-17 discussion Figure ES-7: "For both scenarios, a simple linear extrapolation was used from Iowa's estimated 2009 emissions to the targets of 50% and 90% reductions in 2050, which allowed delineation of interim targets for each scenario in 2012 and 2020. The assumption of linearity was made because there were plenty of reductions in the approved policy options to achieve the interim targets, and a more extensive analysis was beyond the scope of this report." (Schnoor)

15. p. ES-4, last paragraph. Change last sentence to "When all statewide emission sources and sinks are considered, this leads to *net*…" (Miller)

16. p. ES-6. Change Second Heading from "ICCAC Policy Recommendations…" to "ICCAC Policy Options". Change first two paragraphs to read "The ICCAC identified and approved for reporting to the legislature and the governor 56 policy actions. The ICCAC Members present and voting approved 32 of these recommended policy options unanimously, approved 11 more with a super-majority vote (support of 80% or more of the members present and voting), and 13 additional options with a simple majority supporting it. One option failed to gain ICCAC approval. At this time, these policy options have not been prioritized nor ranked with any order of preference. Explanations of objections are in included in Appendices F through J of this Report, which contain detailed accounts of the ICCAC's policy options.

    Of the 56 policy options, 38 were analyzed quantitatively to have a cumulative effect of reducing emissions by about 20 million metric tons of carbon dioxide equivalent (MMtCO2e) in 2012 and 105 (MMtCO2e) in 2020."

    Paragraph 3 – change "recommendations" to "options" (Miller).

17. p. ES-6, second paragraph, first sentence, suggest: "Iowa has recently embarked on statewide public sector energy efficiency initiatives [rather than programs] . . ." This comment carries over to other references to these recent state wide initiatives coming out of EOs (e.g., p. 1-3). (Easler)

18. p. ES-6, third paragraph under *ICCAC Policy Recommendations (Beyond Recent Actions***)**, propose "Figure ES-3 presents a graphical summary . . . associated with the recent federal and state actions . . ." [again, this comment would carry over to other references recent actions] (Easler)

19. p. ES-7, second bullet, change “recommendations” to “policy options”. (Miller). Third paragraph, change “policies recommended” to “policies identified”. Change “final policy option recommendations of the Council” to “final policy options approved by the Council”. Bolded sentence starting with Figure ES-3, change “recommendations” to “policy options”. (Miller).

20. p. ES-8 – ES-15, change “recommendation(s)” to “option(s)” in all table headings and footnotes. (Miller).

21. The last column of Table ES-1 falls off the printed page ES-8 (Schnoor)

22. Table ES-3. Make this the same as Table 1-4 in the TLU-chapter which includes the number of objections in the last column (Schnoor)

23. Executive Summary, page ES-6. There is no mention of ongoing statewide utility energy efficiency programs in the "Recent Actions" section. The IUB is unclear as to why these existing programs and the IUB's oversight of them is not mentioned and how CCS treated the energy savings from these programs. It does not appear accurate to say that Iowa has "recently embarked" on energy efficiency programs, because such programs have been implemented by Iowa utilities since at least 1990. The same comments apply to Chapter 1, page 1.3, Recent State Actions. (Tanner)

24. Executive Summary, page ES-7, regarding the sentences "For the policies recommended by the ICCAC to yield the levels of estimated emission reductions shown in Table ES-2, they must be implemented in a timely, aggressive, and thorough manner. Table ES-3 depicts the final policy option recommendations of the Council and their associated GHG reductions and costs/savings for each sector." The IUB is not aware that the ICCAC agreed to the statement regarding implementation and is not sure what is meant, particularly by the term "aggressive." In addition, at the very least, the IUB recommends that the sentence be modified as follows, consistent with the comments expressed above: "For the policies approved for inclusion by the ICCAC to yield the levels of CCS's estimated emission reductions shown in Table ES-2, they must be implemented in a timely and thorough manner. Table ES-3 depicts the final policy options and CCS's estimates of their associated GHG reductions and costs/savings for each sector." The same comments apply to Chapter 1, page 1-11, and the same changes should be made to that page. (Tanner)

25. Executive Summary, page ES-8, Table ES-1. It is not clear whether the numbers for recent actions include only the federal reductions referred to in the starred note. Do they also include existing Iowa utility energy efficiency actions? (Tanner)

26. Executive Summary, page ES-9, bottom of Table ES-3. Why don't the reductions from recent actions include existing Iowa utility energy efficiency actions? (Tanner)

27. p. ES-12 Table row AFW-6 has asterisk, but no explanation for asterisk [it is explained in similar table in later sections (p. 1-16)] (Easler)

28. p. ES-14, first sentence, suggest: "As explained above . . . , and the costs (or cost savings) of them derived from 2005 baseline data." (Easler)

29. Executive Summary, page ES-17, Figure EX-7. CCS needs to explain this figure more clearly. For example, there should be an explanation of the scenario lines compared with the policy option lines and how CCS developed them. It should be stated explicitly that these are CCS's estimates and CCS developed the figure. (Tanner)

30. p. ES-17, first sentence, should this be extrapolation rather than EStraplolation? (Easler) (Tanner)

31. p. Es-18, second sentence, suggest: "These include increases in severe weather events and drought, which, in turn, can be expected to adversely affect agriculture and industries dependant on agriculture." [This comment carries over to other similar references in the report (e.g., p. 1-21) (Easler)

32. p. ES-18, last sentence, "The applicable legal standards require action [by whom - suggest specifying] [This comment carries over to other similar references (e.g., p. 1-22)] (Easler)

33. p. ES-18, If this is supposed to be an Iowa solution for climate change then we need to makes sure this report accurately reflects our assessments and vulnerabilities. I am not sure we will be impacted by sea level rise on nearby coastal waterways and related salt water intrusion in Iowa. I think we should leave out any Iowa references in this part of the report, since it seems to be more global in perspective. (Lanning)

34. pages ES-17 and ES-18: The newly included "Summary of Current Scientific Literature on Causes and Impacts of Global Warming" is outside of the legislatively mandated scope of the ICCAC and should be deleted. (Woollums, Smith, Carisch)

35. Executive Summary, pages ES-17 and ES-18, Summary of Current Scientific Literature on Causes and Impacts of Global Warming. This section is irrelevant to the ICCAC process. The ICCAC was charged with developing scenarios to reduce GHG emissions, not debating the causation issue. The ICCAC did not debate or discuss the causation issue at all, and just considered scenarios and options for reduction of GHG emissions. The ICCAC did not research the issue or discuss it. Therefore, this section should be removed. (Tanner)

36. p. ES-17 and ES-18, delete entire section titled “Summary of Current Scientific Literature on Causes and Impacts of Global Warming”. (Miller).

CHAPTER 1 – BACKROUND AND OVERVIEW

1. Chapter 1, page 1-1. The IUB believes the statement regarding what Iowa Code 455B.851 requires of the ICCAC is inaccurate and should be revised. (Tanner)

2. Chapter 1, page 1-2, second bullet. The paragraph should state that "CCS analyzed quantitatively," not the ICCAC, and that these are CCS's estimates. The paragraph should also include a caveat that CCS did not analyze the rate impacts of the EEC options. (Tanner)

3. Chapter 1, pages 1-5, 1-6, and 1-7. The IUB is somewhat uncomfortable with CCS's characterization of the level of involvement by the subcommittees and the ICCAC in reviewing CCS's quantification of estimated GHG reductions and costs of the policy options. (See discussion above.) In addition, in the CRE and EEC subcommittees, it is not accurate to say that the subcommittees discussed co-benefits and costs, feasibility issues, and potential barriers to consensus, because there simply wasn't time. There is also no mention of the fact that CCS ran out of funding partway through the process, which affected its ability to quantify results beyond initial estimates (except with regard to one scenario in EEC-1). It also appears that the lack of funding caused CCS to refuse to provide requested additional meetings of the CRE subcommittee. The IUB suggests that some mention of these items should be included on these pages because they were part of the ICCAC process and they affect the quality of the analysis and results. (Tanner)

4. Chapter 1, page 1-7, Estimates of Costs/Cost Savings. In addition to explicitly stating that these are CCS's estimates throughout the section, as discussed above, the sentence "Standard approaches were taken here" should be eliminated or changed to "CCS used its standard approaches to discounting." (Tanner)

5. Chapter 1, page 1-7, Additional Costs and Benefits. In the CRE and EEC subcommittees, these were not discussed to any degree because of time constraints. (Tanner)

6. Chapter 1, page 1-7, Estimates of Costs/Cost Savings.
Change 38 to 37. Only 37 policies were evaluated for NPV. (Ney)

7. Chapter 1, page 1-8, Iowa GHG Emissions Inventory and Reference Case Projections. The IUB questions whether the last two sentences in the first paragraph are true. See comments above regarding the emissions inventory. (Tanner)

8. From Chapter 1, page 1-12, Table 1-3, either the GHG Reductions value needs to be reduced by removing the impact of TLU-6, or a footnote needs to be placed in the table for TLU to note that the GHG reduction totals include benefits quantified for TLU-6 but no costs are included. This then throws off the calculation of Cost Effectiveness for both the TLU policy options and the overall Total. (Ney)

9. From Chapter 1, page 1-12, Table 1-3: Add a footnote to the table re-stating that both the emission reduction estimates and the cost-benefit calculations contain significant uncertainty (Ney)

10. From Chapter 1, page 1-15, Table 1-4, The Sector Total After Adjusting for Overlaps and Synergies should remove the impact of TLU-6 from the reductions total since no costs are provided. (Ney)

11. From Chapter 1, page 1-17 – under "**Perspectives on Policy Recommendations –** As explained above, the ICCAC considered the estimates of the GHG reductions that could be achieved by 38 of its recommendations, and the costs (or cost savings) of them**":** Insert '37 of ' following "(or cost savings) of" (Ney)

12. Chapter 1, pages 1-21 and 1-22: The newly included "Summary of Current Scientific Literature on Causes and Impacts of Global Warming" is outside of the legislatively mandated scope of the ICCAC and should be deleted. (Woollums, Smith, Carisch)

CHAPTER 2 – INVENTORY

1. Chapter 2, page 2-1, Introduction. In addition to explicitly stating that these are CCS's estimates of GHG emissions and sinks as discussed above, the IUB has the following suggestions. In the middle of the paragraph in the sentence beginning with "The ICCAC and TWGs," the sentence should begin with "To the extent possible, the ICCAC and the subcommittees have reviewed," etc. The following sentence should be added to the end of the first paragraph. "At its meeting on November 10, 2008, the ICCAC voted to receive and file the inventory and forecast and to forward it to the Governor and Legislature for their consideration. (Tanner)

2. p. 2-9, third paragraph, last sentence discusses projection GHG emissions in the reference case. I would suggest explaining here that reference case assumes significant additions of wind resources and excludes two base load coal plants that are currently at various stages in the permitting and approval processes. (Easler)

3. p. 2-11, If the I&F relies on utility supplied load forecasts, please explain how/in what respect the AEO 2007 and update to AEO2008 is utilized. (Easler)

4. p. 2-11: only a minority portion of the DAEC uprate is devoted to serving Iowa energy consumers. (approx. 70% is owned by Florida Power - and is not under contract to Iowa utilities). (Easler)

CHAPTER 3- EEC

1. p. 3-4, second paragraph, discussing opportunities for reducing GHG through electricity production . . . suggest adding CHP opportunities from Chapter 4, especially since much of projected load growth is coming from larger customers. (Easler)

2. p. 3-6 second paragraph, second sentence: I'm not sure that Government hihg-performance building standards (EEC) have little overlap with utility efficiency programs. Does this assume that government buildings are not eligible for or do not participate in utility EE programs? (Easler)

3. Chapter 3, page 3-6. CCS should explain that it is interpreting the various EEC Policy Options when it makes statements such as the second sentence in the first paragraph: "EEC-8 targets low-income residential customers who tend to use energy inefficiently, but are typically hard to reach for utility energy efficiency programs." The IUB questions whether CCS has studies to support its opinion that low-income residential customers tend to use energy inefficiently, wonders about its accuracy, and finds the comment offensive and disparaging. The IUB suggests the phrase be removed from the report. CCS should make clear on pages 3-6 and 3-7 that it is the source of the "overlap" adjustments among the various policy options. (Tanner)

4. Chapter 3, page 3-7. The last paragraph states:

    a. Iowa's Executive Orders #41 (Governor Vilsack) and #6 (Governor Culver) to reduce energy use in state buildings will also have an impact on future GHG emissions. The avoided electricity and natural gas GHG emissions are estimated at about 0.30 MMtCO2e in 2020.

5. This statement by CCS does not account for the GHG reductions of either the 0.8% current results being achieved by Iowa IOUs, or the possible effects of the 1.5% scenario being examined by the IUB. The IUB wonders why this was done and how CCS treated the energy savings from these existing programs. (Tanner)

6. Chapter 3, page 3-8. The first paragraph offers a number of opinions or assumptions about the effects of the policy options in Chapter 3. The report should make clear these are CCS's opinions, or provide sources for the opinions. The second paragraph asserts " For these policies recommended by the ICCAC to yield the levels of savings described here, they must be implemented in a timely, aggressive and thorough manner." The report should make clear these are CCS's opinions. The sentence should also state the policies are "options" rather than "recommendations" that are being forwarded to the Governor and Legislature for their consideration. As discussed above, the IUB does not know what "aggressive" means in the context of implementation of the policy options. (Tanner)

7. p. 3-8 suggest adding Iowa Energy Center to implementing entities under EEC-1. [IEC would be a potential implementing entity under a number of initiatives (EEC-4, EEC-7)] (Easler)

8. p. 3-10, EEC-5: Under the potential mechanisms discussed, I strongly object to the focus on utility decoupling especially when little or no attention is given to the other mechanisms under Options 2 and 3. (Easler)

9. page 3-11, EEC-9 Discussion:

"By a majority vote, the ICCAC recommends that Iowa comply with the targets in the Midwestern Governors Association Energy Security and Climate Stewardship Platform, signed in November 2007 by Governor Culver."

Comment: The language "comply" in inappropriate since the MGA program has not yet been finalized. Suggest replacing text with:

"By a majority vote, the ICCAC recommends that Iowa *participate in the development and implementation of* the Midwestern Governors Association Energy Security and Climate Stewardship Platform, signed in November 2007 by Governor Culver." (Ney)

CHAPTER 4 – CRE

1. p. 4-2: It seems like CHP should be included in the opening paragraph under significant opportunities. (Easler)

2. p. 4-2, third paragraph: why are feed-in tariffs limited to utility-scale renewable resources? I would suggest deleting "utility-scale" from the sentence beginning "Implementation". In the same paragraph, suggest changing "Smaller distributed resources are specifically targeted" to "Smaller distributed resources can be specifically targeted . . ." (Easler)

3. Chapter 4, page 4-2, Key Challenges. As discussed above, the report should state these are policy options that the ICCAC is forwarding to the Governor and Legislature for their consideration. In addition, these paragraphs appear to be CCS's opinions, and should be identified as such if they are to be included in the report. The third paragraph refers to policy options, such as an RPS, that were not adopted by the ICCAC, and to feed-in tariffs without the limiting language regarding federal avoided cost contained in the policy option. If it is to be included, the paragraph should be changed to more accurately describe the ICCAC policy options. Finally, the second paragraph describes the combined heat and power policy option as CRE-7, when it is CRE-11 (Tanner)

4. Chapter 4, page 4-2, Overview. There should be a third bullet that discusses the electric rate impacts as shown on the chart on page G-1 (Tanner)

5. p. 4-3, second paragraph regarding transmission issues. Is this uncertainty recognized in the CRE's reference case that assumes significant additions of wind in 2014-2020? It should be. (Easler)

6. p. 4-3, CRE-13 (Pricing Strategies), include feed-in tariffs as another mechanism. (Easler)

7. Chapter 4, page 4-3. The sentence regarding policy option CRE-4 in the middle of the second paragraph should be changed to read: "One option levies a fee based on the greenhouse gas emissions from electric generation to transition society to new, non-GHG-emitting and low-emitting sources of electricity by funding specified activities such as energy efficiency, research and development, and renewable sources of energy (CRE-4). The same comment applies to the last sentence on the page (Tanner)

8. Chapter 4, page 4-8, CRE-3. The following sentences should be added to the end of the description. "A federal cap-and-trade program is offered as the first choice of the ICCAC. A regional cap-and-trade program, such as the MGA program, is the second-best choice. A state-level program is not likely to be a cost-effective option and is therefore not recommended." (Tanner)

9. Chapter 4, page 4-8, CRE-4. The following phrase should be added to the end of the first sentence: "that is intended to transition society to new, non-emitting or low-emitting sources of electricity." The beginning of the final sentence should be changed as follows: "The decarbonization fund could only be used for programs and initiatives that transition society to a low-carbon future, such as for new non-emitting or low-emitting generation, energy efficiency" etc. (Tanner)

10. Chapter 4, page 4-8, CRE-3 Discussion: My recollection is that we also discussed a federal cap-and-trade, and in fact, expressed a preference for a far-reaching national approach over a regional approach. (Ney)

11. Chapter 4, page 4-9, CRE-7. The first sentences should be changed to read: "By a majority vote, the ICCAC offers a policy option to determine the economic feasibility of nuclear power in a carbon-constrained environment and to define specific state legislative and regulatory actions to facilitate the licensing, financing, and construction of new power plants in Iowa. The option has a goal to consider building one new 1200-megawatt nuclear power plant in Iowa by January 1, 2020, if deemed feasible." Then the last sentence should be eliminated. (Tanner)

CHAPTER 5 – TLU

1. From Chapter 5, bottom of page 5-2 and page 5-3
   "The use of fuels with lower per-mile GHG emissions is growing in Iowa, and larger market penetration is possible. Conventional gasoline- and diesel-fueled vehicles can use low-level blends of biofuels. Alternative-technology vehicles can also use higher-level blends of biofuels, as well as other types of alternative fuels, such as natural gas and hydrogen. The type of fuel used

is a crucial determinant of impact on emissions, as some alternative fuels have relatively little GHG benefit. Currently, the most prevalent biofuel in Iowa is corn-based ethanol, which as minimal GHG benefit from a life-cycle perspective.[1] Key determinants of impact will be the development and deployment of fuel types. At present, fuel distribution infrastructure is a constraining factor."

"1 Biofuels analysis was based on information from the Argonne National Laboratory's GREET model, version 1.8, which indicates a life-cycle emission reduction of 15.9% for E85 corn ethanol. See Appendix H for more details on assumed reduction factors for various types of biofuels."

Comment: Remove the statement, "Currently the most prevalent biofuel in Iowa is corn-based ethanol, which has minimal GHG benefit from a life-cycle perspective" because it is unnecessary and arbitrary. First, who makes the judgment that a 15.9 percent reduction is 'minimal'? In the transportation sector in particular, a 15% reduction is very significant. Second, a review of Appendix H as referenced by the footnote shows that E85 from corn-based ethanol represents a 17.6 percent decrease. Third, the results of the GREET model are highly dependent upon a number of assumptions, including fuels used in production if the fuel, the distance and modes by which the fuel must travel, and many more variables. Also remove the footnote. (Ney)

2. From Chapter 5, page 5-9, TLU-6 Discussion

"This policy option focuses on reducing GHG emissions within Iowa by improving the fuel economy of the light duty vehicle fleet by providing incentives such as feebates, tax credits for low-GHG vehicles, operating incentives for low-GHG vehicles, and vehicle registration fees which are reduced for low-emission vehicles and increased for high-emission vehicles. The goal of this policy would be to increase the fuel economy of the light duty vehicle fleet in Iowa by 20% by 2012, 100% by 2020, and 250% of more by 2050. This policy recommendation would need to pass through the legislative process and implemented by state and local government agencies in partnership with the affected parties."

Comment: During the last ICCAC meeting we had a fairly lengthy discussion, and agreement, regarding using the terminology 'GHG emission efficiency" versus 'fuel economy' which would place the focus of TLU-6 on the focus of the ICCAC to reduce GHG emissions. Forcing 'fuel economy' standards could inadvertently raise GHG emissions by forcing more vehicles back to gasoline operation and away from cleaner fuels that have lower energy contents. Suggestion is to replace 'fuel economy' with 'GHG emission efficiency" wherever it occurs in discussion of TLU-6. (Ney)

3. From Appendix H, Page 8-40, TLU-6

Comment: During the last ICCAC meeting we had a fairly lengthy discussion, and agreement, regarding using the terminology 'GHG emission efficiency" versus 'fuel economy' which would place the focus of TLU-6 on the focus of the ICCAC to reduce GHG emissions. Forcing 'fuel economy' standards could inadvertently raise GHG emissions by forcing more vehicles back to gasoline operation and away from cleaner fuels that have lower energy contents. Suggestion is to replace 'fuel economy' with 'GHG emission efficiency" wherever it occurs in discussion of TLU-6.

Reviewing the language of paragraph 1 of the Policy Description on page H-40 illustrates the problem:

"For example, if the current fuel economy is 20 miles per gallon (mpg), goals of 21 mpg by 2012 and 25 mpg by 2020 could be adopted. All other things being equal, increasing fuel economy from 20 mpg to 25 mpg would reduce fuel consumption and the resulting greenhouse gases by 20%."

The math of this discussion only works if the choice of fuel remains constant, but this policy design cannot ensure that is the case. Most alternative fuels have lower heat content and therefore non-optimized vehicles will see a reduction in 'fuel economy'; thus the policy as currently written could force a switch from E10 to gasoline in order to improve 'fuel economy'. Even if emissions were to be decreased by the gain in fuel economy, the decrease would not be linear, i.e. a 20% improvement in fuel mileage will NOT necessarily yield a 20% reduction in GHG because of fuel switching. At some point, forcing only fuel economy could potentially lead to increases in GHG emissions. It is for this reason that we discussed and agreed to re-orient the policy to 'GHG emission efficiency" in order to take into account both the fuel type and fuel economy of the vehicle for the impact on GHG emissions. (Ney)

CHAPTER 6 – AFW

1. p. 6-1, first paragraph, change first 3 sentences to read "While the agriculture, forestry, and waste management (AFW) sectors are responsible for significant greenhouse gas emissions, the sector is also a significant sink for greenhouse gases in soils and in forest stocks. The gross AFW contribution to carbon dioxide equivalent (CO2e) gross emissions in 2005 was 30 million metric tons (MMt), or about 25% of the state's total. However, the AFW contribution to net emissions in 2005 was only 3 MMtCO2e due to the net sequestration of carbon in the forestry and agriculture sectors. (Miller).

2. p. 6-6 to end, references to "recommendation(s)" to "option(s)" or in some casese "identified policy options" – see Miller's email (Miller).

CHAPTER 7 - CC

1. Change all references to "recommendation(s)" in Chapter 7 to "options(s)". (Miller)

2. p. 7-1, Key Challenges and Opportunities, change first sentence to read "The ICCAC was charged with identifying a baseline case and GHG reduction scenarios with at least one of those scenarios aimed at achieving a 50% reduction of GHGs below a baseline year by 2050. In addition, the ICCAC chose to look at a second scenario aimed at achieving a 90% reduction of GHGs below the baseline year by 2050."

   Change second paragraph from "ICCAC based its recommendations…" to "ICCAC based its identified options…" (Miller).

APPENDIX A – SENATE FILE 485

No comments received.

APPENDIX B – DESCRIPTION OF PROCESS

1. Appendix B, page B-1. The memo was presented to the ICCAC at its meeting on December 13, 2007, not 2008. (Tanner)

APPENDIX C – MEMBERS OF SUBCOMMITTEES

No comments received.

APPENDIX D – INVENTORY

1. Appendix D, page D-1. The final Emissions Inventory and Report was not "approved" by the ICCAC. The IUB thinks the Emissions Inventory and Report should be included in the Appendix, rather than just providing a web link. Therefore, the second paragraph should be changed as follows: "The final report, incorporating comments provided by the Subcommittees, was received and filed by the ICCAC, to be forwarded to the Governor and Legislature for their consideration." Then the entire report should be included in the Appendix. (Tanner)

APPENDIX E – METHODS FOR QUANTIFICATION

No comments received.

APPENDIX F – EEC

1. Appendix F, pages F-2 through F-4. The report should make clear that CCS performed all analyses and made all adjustments or exclusions for the "overlap analysis" and "cumulative impacts" for the EEC options. (Tanner)

2. Appendix F, page F-2. At the end of the second paragraph, the last sentence is confusing. CCS explains that "it is important to consider whether addressing the specific energy use would add to the overall reductions, or would just be subsumed into the more general reduction goal." CCS should explain the "general reduction goal" and whether this is an overall goal for the EEC options, or some other goal. In the fourth paragraph, CCS states that the EEC-3 option "does not overlap with EEC-2 because, as it is written, it does not target natural gas." A closer look at option EEC-3 on page F-14 shows that the "Goals" are to "Reduce electricity, natural gas, and heating fuels consumption across all end-user categories by 2% of retail sales annually." CCS should correct the paragraph. (Tanner)

3. Appendix F, page F-3. In the first paragraph at the top of the page, CCS states for option EEC-5 that "this measure targets an incremental 1.5% of retail sales being conserved via energy efficiency by 2012, which, when combined with EEC-12, would exceed achievable levels of

programmatic energy efficiency." CCS should explain and document its source for the statement. (Tanner)

4. Appendix F, page F-3. The third paragraph on option EEC-8 includes the statement that "this measure provides new sources of funding for energy efficiency investments." A closer look at option EEC-8 on page F-33 suggests the source of funds is vague, but Iowa investor-owned utilities are mentioned prominently. CCS should clarify its interpretation to identify the new sources of funds. (Tanner)

5. p. F-13 EEC-2, Barriers to Consensus. Please insert the following text: "The goals set forth by this policy are not technically feasible with existing natural gas technologies. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation." (Woollums, Smith, Carisch)

6. p. F-39 EEC-9, Barriers to Consensus. Please insert the following text: "A phased-in, technology and policy-driven national approach to reduce long-term global greenhouse gas emissions while minimizing the costs and risks to the economy is preferable to and more cost-effective than a mix of regional policies. Furthermore, a regional policy could put Iowa at a disadvantage if pre-empted or overlapped by a federal program, thereby adding significant costs to Iowans. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation." (Woollums, Smith, Carisch)

7. p. F-54 EEC-12, Barriers to Consensus. Please insert the following text: "This policy does not adequately quantify the costs of program delivery, the impact of load growth scenarios, or the impact of how electric utilities manage existing generation fleet resources. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation." (Woollums, Smith, Carisch)

8. Appendix F, Annex A, pages F-67 and F-68. The Annex should identify CCS as the entity performing the analysis. The Annex should use "CCS" instead of "we" in three places in the first paragraph of the Annex. (Tanner)

APPENDIX G – CRE

1. Appendix G, page G-1. At the bottom of the table, there are no numbers in the boxes for "Sector Total After Adjusting for Overlaps" and "Sector Total Plus Recent Actions" under the column "Change in Generation Cost in 2020 $/MWh." The IUB thinks CCS should provide these numbers. (Tanner)

2. Appendix G, page G-3, second paragraph. Change CRE-4a to CRE-4. (Tanner)

3. p. G-12 CRE-2, Barriers to Consensus. Please insert the following text: “This policy does not adequately address the need for and cost of transmission upgrades, the feasibility of the renewable energy generation estimates, the potential impact on offset markets of mandating such renewable targets, or the cost impacts of the aforementioned items. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation.” (Woollums, Smith, Carisch)

4. Appendix G, page G-13, CRE-3. The IUB thinks the second bullet under "Related Policies/Programs in Place" should be moved to the bottom of the "Policy Description" and that the sentence "Thus, a federal cap-and-trade program is recommended as the first choice." Should be underlined or printed in bold type. Under "Parties Involved," third line, "pear" should be changed to "per." (Tanner)

5. p. G-14 CRE-3, Barriers to Consensus. Please insert the following text: “A phased-in, technology and policy-driven national approach to reduce long-term global greenhouse gas emissions while minimizing the costs and risks to the economy is preferable to and more cost-effective than a mix of regional policies. Furthermore, a regional policy could put Iowa at a disadvantage if pre-empted or overlapped by a federal program, thereby adding significant costs and compliance obligations to Iowans with little or no incremental benefit. Currently, the Midwestern Governors Association cap-and-trade program lacks in key details regarding scope, timing, offsets, and other key design criteria to accurately assess potential impacts on Iowa citizens. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation.” (Woollums, Smith, Carisch)

6. Appendix G, page G-23, CRE-6. In the third bullet under "Policy Design," second line, "previewed" should be changed to "reviewed." (Tanner)

7. Appendix G, CRE-7. Per the comments at the last ICCAC meeting, the last paragraph on page G-26 should be moved to "Goal" under "Policy Design." On page G-27, also per the last ICCAC meeting, there should be an asterisk placed near Table G-7-1 referring the reader to the "Key Uncertainties" section. On page G-28, under "Key Uncertainties," second paragraph, did the ICCAC vote to delete the last two sentences of the paragraph at the last meeting? (Tanner)

8. CRE-7, Page G-28 Barriers to Consensus. Add the following paragraph as an objection: “Objections were also raised that nuclear power has so many liabilities associated with it that are not reflected in the cost analysis of the ICCAC process. For example, its economics require investment now that would not pay-off for 10-12 years, and it is unlikely that investors will be willing to capitalize such a project given the current credit crisis. Commercial nuclear wastes (spent fuel rods) do not have a viable storage/disposal option at this time and require diligence for 40,000 years for the longest-lived radioisotopes to decay. Yucca Mountain, Nevada, is the

proposed repository, but it is neither a popular option among people in Nevada nor among citizens of the states like Iowa through which the nuclear waste will need to be transported to reach its ultimate destination. Terrorism and nuclear proliferation are additional concerns regarding the widespread transportation of high-level nuclear wastes. Reprocessing of the wastes is currently not an option in the U.S. either. Considering all these liabilities, some Council members felt that it did not merit being a part of ICCAC's portfolio of policy options, and it is not necessary to utilize this option to achieve the scenario targets." (Schnoor)

9. Appendix G, CRE-8. On page G-30, under "Goals," the IUB suggests the sentence "For the purposes of quantification, 8b is used for calculations and in the summary table" be either underlined or printed in bold type to clarify what CCS has quantified. In addition, there is an extra "for" in the same sentence that should be removed. On page G-31, in the paragraph beginning with "The DOE report," there is an extra "in Iowa" in the second sentence that should be removed. On page G-32, Table G-8-2, the IUB suggests the phrase "8b was used for CCS's quantification" be added to the title of the table for clarification. (Tanner)

10. Appendix G, CRE-10, page G-38. Under "Related Policies/Programs in Place," "CRE-4a/4b" should be changed to "CRE-4." (Tanner)

11. p. G-49 CRE-13, Barriers to Consensus. Please insert the following text: "Self-generation and displacing part or all of one's own energy demand is more likely cost-effective than interconnecting for small (i.e. less than one MW) generation sources. However, this policy gives the impression that interconnection for small sources is technically and economically feasible, and does not adequately address potential safety concerns to distribution system electrical workers. As noted in the Iowa electric utilities' transmittal memo to Chairman Schnoor, dated December 3, 2008, regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation." (Woollums, Smith, Carisch)

12. Appendix G, Annex A, page G-50. The Annex should identify CCS as the entity performing the analysis. The Annex should use "CCS" instead of "we" in three places in the first paragraph of the Annex. (Tanner)

APPENDIX H – TLU

1. p. H-30 TLU-4, Barriers to Consensus. Please insert the following text: "This policy has very high costs and very low emissions reduction potential and does not meet the primary objective of achieving cost effective greenhouse gas emission reductions. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation." (Woollums, Smith, Carisch)

2. TLU-8, Page H-58 Key Uncertainties. Add the following paragraph to the end: "An Iowa Clean Car program in which the fuel economy of Iowa's entire fleet is tracked would likely rely on a

greenhouse gas life cycle assessment (LCA) of the fuel choice as well as the emission standards for cars and light trucks. California has embarked on such an assessment in their Clean Car program, and the U.S. Environmental Protection Agency is also charged with doing an LCA for transportation fuels under the 2007 Energy Independence and Security Act (EISA). It is possible that ethanol, the current biofuel of choice, would fare poorly in terms of such an overall assessment. This is because greenhouse gases are emitted while growing corn (e.g., nitrous oxide emissions from the denitrification of nitrogen-fertilizers) and from converting land for additional corn supply. This could present a huge challenge to agriculture in Iowa and the ethanol industry depending upon exactly how the life cycle assessment of the fuel is performed." (Schnoor)

3. TLU-10, Page H-71 Key Uncertainties. Add the following paragraph to the bottom of the page: "A Low Carbon Fuel Standard for Iowa would likely rely on a greenhouse gas life cycle assessment (LCA) of the fuel. In the case of ethanol, this would include the indirect emissions from growing corn as feedstock for the ethanol production industry and from conversion of land (emissions of carbon dioxide to the atmosphere from land disturbance). California has embarked on such an assessment for their Low Carbon Fuel Standards, and the U.S. Environmental Protection Agency is also charged with doing an LCA for transportation fuels under the 2007 Energy Independence and Security Act (EISA). It is possible that ethanol (E10 and E85) would fare poorly in terms of such an assessment (e.g., a 20% reduction in GHG emissions from renewable fuels, or EU's objective of 120 g CO2e/km). This is because greenhouse gases are emitted while growing corn (e.g., nitrous oxide emissions from the denitrification of nitrogen-fertilizers) and from converting land to corn. This could present a huge challenge to agriculture in Iowa, producers, refiners, and blenders depending upon exactly how the life cycle assessment of the fuel is performed and if ethanol-from-corn fails to qualify as a low carbon fuel. It is likely that cellulosic ethanol, the next generation biofuel, will have a much better greenhouse gas performance assessment and will certainly be classified as a low carbon fuel." (Schnoor)

APPENDIX I – AFW

1. Change "Recommendations" to "Options" in Title and throughout appendix – see Miller's email. (Miller)

2. p.I-5, AFW-1, Timing, change "Restricting application from" to "reducing application to". (Miller)

3. p. I-11 AFW-1, Barriers to Consensus. Please insert the following text: "This policy has very high costs and very low emissions reduction potential and does not meet the primary objective of achieving cost effective greenhouse gas emission reductions. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation." (Woollums, Smith, Carisch)

4. p. I-28, AFW-4, Policy Description, change “This policy recommends reducing” to “This policy option involves reducing…” (Miller)

APPENDIX J – CC

1. Appendix J, CC-2, page 7, Implementation Mechanisms. Per the decision of the ICCAC at its last meeting, remove the sentence "During 2009, the ICCAC will divide into new subcommittees to foster the implementation of these actions, especially those requiring immediate and early action." In addition, the next sentence should be changed to read, "During 2009, ICCAC members may be involved with further design and development of these policy options and related implementation strategies." (Tanner)

2. p.8 CC-2, Barriers to Consensus. Please insert the following text: “The ICCAC report does not provide sufficient information or analysis of what policies would be implemented during what timeframe to achieve the reduction scenarios, nor does it assess the feasibility and cost of the policies or the ultimate economic burden on the economy and citizens in Iowa. Furthermore, the scenarios do not follow a realistic slow-stop-reverse pathway for reduction of greenhouse gas emissions. As noted in the December 3, 2008, transmittal letter from the Iowa electric utilities to Chairman Schnoor regarding barriers to consensus, this policy does not assess technical feasibility nor does it accurately communicate potential costs of implementation.” (Woollums, Smith, Carisch)