

## Comments Received on the Draft New Mexico CCAG Final Report

**Note: each comment is given a label with date and author, and formatted as “Header 1” and placed in chronological order of the date of the email. CCS has added its response immediately after a specific comment language like these examples:**

*\*KH - Edit accepted.* Karl was “lead” on this comment, and accepted it.

*\*SR - Edit rejected as changing outcome of CCAG-approved recommendation(s). This edit would have changed the meaning, etc.,etc.* Steve was “lead” on this comment, and rejected it, and offered a quick note on why.

Leads: KH=Karl Hausker, KC=Ken Colburn, SR=Steve Roe, ML=Mike Lazarus

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## 11-03 Milne

From: Bruce Milne

To: CCS

Re: Initial CCAG Comments on Existing Draft to CCS by November 3, 2000

Date: 3 November 2006

Here are brief comments regarding general aspects of the draft report:

- 1) In the science arena, the convention is to place figure legends below the graph and table legends above the table. Perhaps the convention is not universal, but academic literature from most if not all fields adheres to the convention. *\*KH – Edit rejected. Not viewed as significantly improving the message of the graphs and tables.*
- 2) Please confirm that the units on the y-axis of Fig. 2-1 are correct. The legend reports tons while the axis is MM tons. *\*KH – Edit accepted. Left hand label deleted. Right hand legend is clarified. 2 dotted graph lines are in units of tons; 2 solid graph lines are in units of 100gm CO<sub>2</sub>e per \$ of economic output (Gross Product).*
- 3) The introductory sentences in Chapter 7 should emphasize the opportunity to reduce GHG emissions by managing the food supply system, especially regarding transportation. The draft introduction minimizes the potential for solutions to come from the agriculture sector. *\*SR – Edit rejected. This issue is reflected in the third bulleted item on page 7-2; hence it is one of the primary reduction opportunities identified.*
- 4) Be sure to break out the savings (positive or negative) in a prominent way that is consistent across sectors and indicate calculations that include overlap or not based on NPV. *\*KH – Edit accepted.*
- 5) I might also encourage scatter plots of the cost per ton versus cumulative GHG reduction (2007-2020) that would make it easy to see where the most economically favorable solutions are found. In contrast, the temptation to display the benefit/cost ratio for each option would obscure the magnitude of savings. *\*KH – all data on NPV, \$/ton, and cumulative tons is presented for each option..*

## 11-03 Epel

-----Original Message-----

**From:** Epel, Joshua [mailto:JEpel@duke-energy.com]

**Sent:** Friday, November 03, 2006 5:10 PM

**To:** Uhl, Mary, NMENV

**Cc:** Karl Hausker; Thomas D. Peterson; Jim.Norton@state.nm.us; OHare, Craig, EMNRD; Aaboe, Erik, NMENV; Weaver, Lany, NMENV; Musick, Brad, NMENV; Ihle, Jack; smithgr1@bp.com;

Bruce.Gantner@conocophillips.com; Ross, Jeffrey

**Subject:** RE: Reminder: First draft CCAG report comments due Friday, November 3

Mary:

Given the short time frame to produce comments, I am highlighting only a few comments. We will need to review the Report in its draft Final version to provide complete comments. My comments only focus on Chapter 5:

Page 5-2: I do not remember any testimony to the effect that IGCC with carbon capture and storage is expected to be widely available in the 2012-2015 timeframe. *\*KC – Text modified to delete sentence entirely, thereby making no reflection regarding likely timeframe for commercialization.*

Page 5-3. I do not remember any testimony to the effect that CSP is approaching commercialization. *\*KC – Text modified to delete two sentences entirely, thereby making no reflection regarding likely timeframe for commercialization.*

Page 5-3. The estimated net cost of only \$17 million is without basis, and should not be included until CCAG members have a chance to evaluate the assumptions. *\*KC – Text retained, with additional explanation via footnote.*

Page 5-12: ES-11. The concepts: “and perhaps someday as a feedstock that when combined with water could be reformed into liquid fuels”, and “Potentially, carbon could also be captured directly from the atmosphere”, are so speculative that they should be removed from the report. These concepts were never discussed by the TWG as remotely viable. *\*KC – Text retained in first referenced sentence, since drawn from agreed language in ES-11 Policy Description. Text in second referenced sentence deleted.*

Page 5-13: ES-13. “3) replace gas-driven compressors with electrical compressors when doing so reduces CO2 emissions” should be deleted. The testimony in the TWG was that replacement of gas driven compressors increases CO2 emissions. Adding the caveat “when doing so reduces CO2 emissions” is not an honest qualifier. If the authors insist on keeping this option on the table, it should be written: “The substitution of gas-driven compressors with electrical compressors will increase CO2 emissions. This strategy should be reevaluated when low carbon electricity is available to operate electrical compressors”. *\*KC – Referenced text reflects preliminary chapter drafting prior to 10/30/06 CCAG meeting. Text was since changed to reflect agreement reached at that meeting.*

Joshua B. Epel

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## 11-03 Ihle

-----Original Message-----

**From:** Ihle, Jack [mailto:jack.ihle@xcelenergy.com]

**Sent:** Friday, November 03, 2006 7:32 PM

**To:** Uhl, Mary, NMENV; Karl Hausker; Thomas D. Peterson; Ken Colburn (E-mail)

**Cc:** Joshua B Epel (E-mail); Jeffrey Burks (E-mail); Prager, Frank P

**Subject:** RE: Reminder: First draft CCAG report comments due Friday, November 3

Mary and CCS,

Attached are utility comments on the CCAG draft report for Chapters 1 and 5. Jeff Burks will get you some further comments for other chapters.

Thanks,  
Jack

### Utility Comments on Chapters 1 and 5 of the Draft CCAG Final Report

**Page 1-4, first full paragraph:** We are not clear what point the following phrase is making. We suggest that it be deleted. *\*KH – Edit accepted but substitute text offered that is more generic.*

“While New Mexico’s emissions growth rate presents challenges, it also provides major opportunities. Because more than XX% of New Mexico’s GHG emissions are directly related to energy and transportation, the opportunity exists for the State to reduce its GHG emissions while continuing its strong economic growth by being more energy efficient, using more renewable energy sources and increasing the use of cleaner transportation modes, technologies and fuels.”

**Page 5-2, last paragraph:** “Advanced coal technologies like integrated gasification combined cycle (IGCC) with carbon capture and storage are not yet fully commercial yet, but are expected to be widely available in the 2012-2015 timeframe.”

We feel that this statement is too optimistic. Carbon capture and storage has not been demonstrated on any IGCC project yet, and all existing IGCC plants have taken several years of operation to reach maximum gasifier availability. We instead suggest the statement “Advanced coal technologies like integrated gasification combined cycle (IGCC) with carbon capture and storage show significant potential for carbon emissions reductions, though they require more development to be considered commercially available.” *\*KC – Text modified to delete sentence entirely, thereby making no reflection regarding likely timeframe for commercialization.*

**Page 5-3, first full paragraph:** We differ with the tone of this paragraph concerning the state of commercialization of renewable and energy storage technologies. We think of “commercial” as a term implying that the technology is reasonably reliable and economically competitive with other options. We do not feel that solar PV, without significant subsidy, is commercial in peak shaving in New Mexico. Solar CSP may be approaching commercialization, but will require significant R&D investment, demonstration and deployment on the order of a few thousand MW to achieve commercialization, per the footnotes in the last ES TWG set of policy recommendations. Some CSP technologies may be able to dispatch electricity for six or more hours after sundown, but it is not clear to us how much electricity this would represent or whether this has been proven in any commercial application of the technology. Finally, the paragraph implies that storage and backup to achieve baseload-like service will be a minor added cost to the cost of energy from intermittent generation technologies. We disagree. Storage technologies under development are likely to add significantly to the cost of energy from intermittent generation sources.

We suggest the following paragraph instead:

“New Mexico has plentiful renewable resources in the form solar and wind energy, and due to the State’s long history as an energy pioneer, unusual human resources to capitalize on these resources. This offers the State a significant leadership opportunity in the commercialization of associated technologies. Solar generation technologies such as photovoltaic (PV) and concentrating solar power (CSP) are emerging technologies with great potential. However, they will require further R&D and deployment to be economically competitive with conventional generation. New Mexico also has untapped wind resources, albeit not necessarily well located to meet domestic demand. Wind’s intermittency inhibits its value for baseload capacity, but its value to the electricity grid can be enhanced by carefully planning wind facilities at multiple sites.”

*\*KC – Text modified to delete two sentences entirely, thereby making no reflection regarding likely timeframe for commercialization.*

### **Page 5-3 to 5-7, “Overview of Policy Recommendations and Estimated Impacts”**

In the calculations supporting the first paragraph of this section, we disagree with the practice of quoting the costs and benefits of the ES TWG as combined with the RCI TWG recommendations. Combining mathematical results from the RCI TWG and the ES TWG recommendations is confusing. In isolation, the ES TWG recommendations have an NPV of over \$1 billion, but this fact is obscured when the ES TWG recommendations are combined with the RCI TWG recommendations, which tend to have a negative cost. We agree that it is appropriate to discuss the policies in combination, but we feel that this discussion should occur in a summary chapter such as Chapter 1, not in the individual TWG chapters. We wish to avoid any possible accusation that the CCAG is hiding costs and benefits, and feel that full and fair disclosure of costs and benefits is essential to the credibility of this report. *\*KC – Text and figures retained; RCI and ES policy options regarding electricity are too closely intertwined to be appropriately separated at the TWG level. Full and fair disclosure is provided through policy option-specific indication of costs and reductions in the chapter tables and the technical appendix.*

Similarly, Figure 5-3 and all other figures in Chapter 5 should reflect ES TWG policy recommendations only. Again, it is appropriate to combine the overall CCAG set of recommendations, but this should be done in a summary chapter. *\*KC – Text and figures retained; RCI and ES policy options regarding electricity are too closely intertwined to be appropriately separated at the TWG level. Full and fair disclosure is provided through policy option-specific indication of costs and reductions in the chapter tables and the technical appendix.*

Why are the NPV results of policy recommendations deleted from all tables, such as Table 5-1 on page 5-5, in the draft report? The NPV results are instructive and should be included in all cost tables in the report. *\*KC – NPV results will be included in the final report.*

Why are any of the cap and trade cost and benefit numbers included in the draft report in Table 5-1? It is our understanding that cap and trade was left as a non-quantified option, yet the report gives the impression of quantifying what the group agreed not to quantify. Also, the final CCAG ES-14 recommendation did not exclusively recommend cap and trade. *\*KC – Edit already made.*

Are any of the oil and gas cost and benefit numbers included in the calculations supporting the text of this section? It is our understanding that ES-11, ES-12, and ES-13 were left as non-quantified options due to the lack of credible analysis. *\*KC – No.*

The final report should include the costs and benefits due to application of the CCAG recommendations to electric coops. The final report should also explicitly note the inclusion of coops in the calculation of costs and benefits. Inclusion of the costs and benefits of applying the CCAG recommendations to coops is consistent with CCAG recommendation ES-16. *\*KC – Application to coops is already included; text modified to enhance clarity.*

Tribal lands in New Mexico are not under the jurisdiction of the State of New Mexico, and therefore cannot be assumed to be subject to the policy recommendations of the CCAG. Therefore, calculation of costs and benefits of CCAG recommendations should not assume participation from tribal lands. *\*KC – Text retained; concern is covered in Challenges and Opportunities section.*

**Page 5-4 – 5-5, bridging sentence:**

“A substantial expansion of renewable energy in New Mexico, for instance, would be accompanied by a corresponding increase in related jobs in New Mexico as energy investment shifts from fixed assets to labor on a relative basis.”

We feel that this statement is too strong. Modeling will be required to prove whether additional jobs in New Mexico will result from a shift away from conventional generation to renewable generation. The State of New Mexico has begun to undertake such modeling, but results are not yet available. We suggest that “would” be changed to “may” in the sentence. We also suggest that the phrase “as energy investment shifts from fixed assets to labor on a relative basis” be changed to “as energy investment shifts from fuel production to the manufacture of renewable technologies on a relative basis.” *\*KC – Text modified as suggested.*

Page 5-5 sentence: “Energy reliability and security would be enhanced by greater penetration of distributed and renewable energy resources...” We disagree with the reliability implication of this statement. It is not clear that significantly higher levels of intermittent resources, especially wind, will lead to greater reliability of the electric system. *\*KC – Text modified.*

Sincerely,

Jeff Burks  
PNM

Jack Ihle  
Xcel Energy

## 11-06 Burks

-----Original Message-----

**From:** Burks, Jeffrey [mailto:Jeffrey.Burks@pnmresources.com]

**Sent:** Monday, November 06, 2006 10:04 AM

**To:** Uhl, Mary, NMENV; Karl Hausker; Thomas D. Peterson; Ken Colburn (E-mail)

**Cc:** Joshua B Epel (E-mail); jack.ihle@xcelenergy.com

**Subject:** RE: Reminder: First draft CCAG report comments due Friday, November 3

Mary and CCS:

Attached are additional comments from the utility members of the CCAG.

### Utility Comments on Chapters 1-5 Draft CCAG Final Report

#### Introductory Comments

The working assumption for these remarks is that CCS and NMED instructed CCAG to limit the initial round of comments to “high level” observations. As such we reserve the right to make more specific comments regarding the write-up of individual policy recommendations at a later date. .

#### Chapter 1 Background and Overview

##### Overview of CCAG Policy Recommendations

There should be an explicit explanation of the limitations of the cost-benefit analysis employed by CCS/NMED. For example, no attempt was made to estimate the impacts on electricity and natural gas rates or other energy costs. *\*KH – Edit accepted. New section on Analysis of Options gives overview with pointers to Appendix E, and contains footnote: “The analysis addressed cost and did not attempt to estimate specific price changes or utility rate changes that might result from implementation of a policy option.”*

Page 1-4: There needs to be a clear and thorough explanation that one of the underlying assumptions of the CCS analysis is that the policies recommended by CCAG will impact the output of over 24 million tons of CO<sub>2</sub> from existing and proposed coal-fired power plants located on tribal lands even though the State of New Mexico does not have regulatory jurisdiction over these plants and nothing the CCAG has proposed will require these plants to comply with the CCAG's recommended policies. *\*KH – Edit accepted.*

The fact that nearly 25% of the projected emissions of CO<sub>2</sub> for 2020 will come from sources not subject to state regulation is a significant issue. There have been numerous discussions on this issue during the CCAG process yet CCS/NMED continue to down play the impact this will have on New Mexico's ability to meet the Governor's emissions goals. The use of the "alligator jaws graph" without appropriate caveats or use of scenarios depicting tribal participation and non participation in CCAG recommendations, is presumptuous at best and misleading at worst. We would not be serving the Governor and public if we were not totally forthcoming about the limitations of the CCAG policies in meeting the Governor's GHG emissions reductions goals. *\*KH – Edit accepted..*

We also recommend that the Overview of CCAG Policy Recommendations include a summary table identifying emissions projections and what policy suites and how the policy suites will impact projected emissions reductions in the various sectors in 2010 and 2020. An expansion of one of the reference case tables to show this information would be helpful. *\*KH – In progress.*

## **Chapter 2 -- Inventory and Forecasts of Emissions of GHG Emissions**

### Page 2-9, Consumption vs Production-Based Emissions

This section raises the issue of how best to account for GHG emissions for accounting and policy purposes, yet never makes any conclusions about which approach is used for purposes of the CCAG analysis and recommendations. Accordingly, it is not clear whether the emissions reductions from CCAG policy recommendations are impacting emissions from the perspective of a "consumption based" or "production based" accounting system. Without this clarification CCS runs the potential risk of comparing apples and oranges and overstating the emissions reductions achievable by the suite of policies recommended by CCAG. For example, emission reductions from energy efficiency will, over time, impact future load growth and thus future additions of baseload generation, but will do nothing to impact existing generation. In isolation this could be a reasonable conclusion, but when aggregated with Energy Supply policies that reduce the CO<sub>2</sub> emissions from power plants runs the risk of overstating or double counting effective reductions. *\*KH – Edit accepted. Chap 1 and 2 now refer clearly to the adoption of a consumption-based approach for elec. sector, and production-based approach for other sectors (applies to inventory, projections, and option scoring). The scoring of overlapping and integrating policy options are noted in summary tables, and methodologies are described sector by sector in the relevant Appendix..*

Some clarity needs to be brought to the issue of what accounting mechanism is being used for purposes of tracking emissions reductions attributed to the CCAG policy recommendations and a credible "netting" out of emissions reductions needs to occur. *\*KH – Edit accepted. See response above .*

The report needs to be more transparent in describing how the accounting occurred for each group of policy recommendations; i.e. whether the policy is targeted at emissions

reductions under a production based or consumption based accounting system. Under no circumstances should the emissions reductions from different accounting mechanisms be aggregated. *\*KH – Edit accepted. This comment and others led CCS to do a additional review of these key issues, and this resulted in a CCS request to the CCAG to adjust the inventory and projections by using a production-based approach to the fossil fuel production sector. See separate memo on this..*

### **Chapter 3 -- Goals and Cross-Cutting Issues**

#### **Page 3-1, Key Challenges and Opportunities**

It is a significant overstatement of the facts to say “This situation, however, provides New Mexico with unusual opportunity to influence how regional or national cross-cutting programs are designed and implemented....” This might be true of public education and outreach efforts but it is an unsupportable ascertain with respect GHG reporting and registries. Several recognized and accepted national/international protocols and registries already exist, in fact the State of New Mexico is following the WRI protocol through its membership in the CCX. At a minimum, New Mexico’s protocols should adopt or fully conform with existing reporting protocols and in order to achieve economies of scale and efficiency should join a registry instead of attempting to create a state registry. This is critical, especially if the State is expecting the costs of such a registry and reporting program to be “borne primarily by participants”. *\*KC – Comment reflects an inaccurate reading of the intent of the referenced paragraph. Text providing an example relative to CCX (an example of NM’s seizing leadership opportunities, but not “going it alone”) has been inserted to clarify intent.*

#### **Page 3-3, CC-2 State Greenhouse Gas Registry**

The assertion is made that “Having a GHG Registry can encourage GHG reductions” This statement should be removed. It is accurate to say that a GHG registry is a necessary part of a credible GHG emissions reduction effort but it is not sufficient by itself to “encourage” emissions reductions” as alleged in the text. *\*KC – Text modified..*

### **Chapter 4 – Residential, Commercial and Industrial Sectors**

#### **Page 4-1, Overview of GHG Emissions**

There needs to be additional clarification around the impact RCI measures will have on CO2 emissions. Emission reductions from energy efficiency will, over time, impact future load growth and thus future additions of base load generation, but will do nothing to impact emissions from existing generation. Somehow this nuance needs to be included in the discussion about the effect of the RCI policies on emissions. What we are looking for is a better explanation of how and what sector’s emissions RCI policies will impact. *\*ML – Edit accepted and addressed in footnote 5 to chap 4.*

Jeff Burks

Jack Ihle

PNM Resources

Xcel Energy

## 11-04 Smith

-----Original Message-----

**From:** Uhl, Mary, NMENV [mailto:mary.uhl@state.nm.us]

**Sent:** Monday, November 06, 2006 6:10 PM

**To:** Ken Colburn

**Cc:** tdp1@mac.com

**Subject:** Comments from Reid Smith

### NM CCAG Draft Report Comments November 4, 2006 Reid Smith

Chapter 1:

Page 1-7: It is assumed that the TWG tables will be updated to reflect finalized decisions made at the last CCAG meeting. *\*KH – Yes..*

Chapter 2:

Apologies for not thinking of this earlier but the inventory lacks methane from active coal mining, natural coal seam seeps where they extrude to surface, and abandoned coal mining. This may be quite significant but even if not needs to be at least noted and included in discussion. Methane emissions from coal mining and natural seeps are well known and get a lot of attention.

*\*KH – Chapter 2 and Appendix D do include an estimate of GHG emissions from coal mining, and Appendix D acknowledges various sources including natural coal seam seeps and the generally poor data availability for these types of sources.*

Page 2-1: Correct Arizona to New Mexico in the first sentence of Chapter 2. *\*KH – Edit accepted.*

Page 2-8: Clarify the following to note whether it is NM specific or National: *Fossil fuel industry emissions grew rapidly in the 1990s with total natural gas production rising from 1015 billion cubic feet in 1990 to 1802 billion cubic feet in 2000. Natural gas production has dropped slightly since 2000* *\*KH – It is NM, and text has been clarified.*

Page 2-13; Table 2-4: The natural gas production shown in the table does not match the production in the narrative description on page 2-8 and noted above. Also, the projection of flat natural gas production through 2020 is likely not valid. As the TWG has stated on several occasions, Statewide NG production is expected to begin declining near the end of this decade.

*\*KH – Edit. The fossil fuel portion of Table 2-4 has been eliminated because of the CCS recommendation of taking a production-based approach to the fossil fuel production sector.*

*Analysis of options throughout utilized the flat production scenario rather than the declining scenario per the specified choice of the TWG.*

### Chapter 3:

Page 3-3: The following statement, “*Every effort should be made to maximize consistency with federal, regional, and other states’ GHG reporting programs.*”, needs to be strengthened. There has been considerable work done on reporting structures, issues, protocols, and methodologies for the last decade and it is absolutely critical that NM recognize the outcome of these and either adopt or design in full conformance with them to have a credible program that can either achieve reciprocity with other State/Regional programs or fold seamlessly into a National/International program. *\*KC – Text modified as suggested.*

The above discussion also applies to the discussion of registry development on pages 3-3 and 3-4. *\*KC – Text modified as suggested.*

### Chapter 4:

Page 4-12: RCI-5 description includes a statement relating to 30% “green power” by 2010. This is not consistent with the discussions in the ES TWG nor the discussion and decisions at the final CCAG meeting and should be updated based on the ES discussions. *\*ML – This option concerns green power purchasing by State or State-affiliated entities. It is separate from the Renewable Portfolio Standard (ES-1).*

### Chapter 5:

Page 5-2: The following statement, *Advanced coal technologies like integrated gasification combined cycle (IGCC) with carbon capture and storage are not yet fully commercial yet, but are expected to be widely available in the 2012-2015 timeframe*, is not reflective of discussions regarding future availability of advanced coal technologies. I believe the consensus was that wide availability and commerciality was at best a remote possibility in the time frame noted. *\*KC – Text modified to delete sentence entirely, thereby making no reflection regarding likely timeframe for commercialization.*

Page 5-2&3: The following statement, *Natural gas producers and processors benefit from the fact that steps which reduce methane venting, leaks, or combustion – of which there are many – enable more product to come to the market, producing a genuine win-win situation*, needs to be qualified to indicate that the win-win only occurs where actions are both technically and economically feasible. *\*KC – Text modified as suggested.*

Page 5-3: Do we believe the following statement is accurate and that CSP is approaching commerciality? *Concentrating solar power (CSP) is an emerging technology approaching commercialization.* I believe the sense of the TWG was that this was promising technology but not approaching commercialization. *\*KC – Text modified to delete two sentences entirely, thereby making no reflection regarding likely timeframe for commercialization.*

Page 5-3: The following paragraph needs to be totally rewritten to decouple the RCI and ES options in terms of reduction deliverability and cost. Bundling them as shown obscures the approximate \$1 billion cost for the ES options and almost \$1 billion savings from the RCI options. This severely degrades the transparency and policy/decision making utility of the ES policy discussions. This is critical!! *\*KC – Text retained per similar earlier comment.*

*As summarized in Figure 5-3, coupled with RCI policy options that reduce electricity demand, these policy recommendations could lead to GHG emissions reductions from reference case projections of 13 MMtCO<sub>2</sub>e per year by 2020, cumulative reductions of almost 85 MMtCO<sub>2</sub>e from 2007 through 2020, at a net cost of only \$17 million through the year 2020 on a net present value basis (NPV).<sup>1</sup> The weighted average cost of saved carbon from the policy options for which quantitative estimates of both costs and savings were prepared was less than \$7 per metric ton of CO<sub>2</sub> equivalent (after eliminating potentially overlapping options). When coupled with RCI demand reduction measures and their associated cost savings, the 85 MMtCO<sub>2</sub>e cost only \$0.21 per MtCO<sub>2</sub>e*

Page 5-10; ES-6 description: Do we believe the following statement is accurate and that IGCC is very close to commerciality? “IGCC is expected to be fully commercialized well before 2020.” I believe the sense of the TWG was that this was possible but certainly not proven or demonstrated as technically or economically feasible for major applications. *\*KC – Text modified as suggested.*

Page 5-12; ES-11: The following two statements, “and perhaps someday as a feedstock that when combined with water could be reformed into liquid fuels”; “Potentially, carbon could also be captured directly from the atmosphere.”, are so speculative that they negatively affect the credibility of the report. Perhaps they should be moved to an R&D section that deals with theoretically valid but wildly speculative potentials. They really don’t belong in a discussion of CO<sub>2</sub> injection and storage or reuse. *\*KC – Text retained per ES-11 policy option description. Second sentence deleted per earlier similar comment.*

Page 5-13; ES-13: This description needs to be totally rewritten to reflect the discussions and changes to the detailed policy options. *\*KC – Text changed to reflect agreement reached at 10/30/06 meeting.*

## Chapter 6

Page 6-2: The following statement, “These benefits include (but are by no means limited to) reduced local air pollution”, is not necessarily true. Some energy saving/efficiency steps create additional “traditional pollutants” and this needs to be a core criteria/element in policy options to increase efficiency. *\*KH – Edit rejected. It is reasonable to expect that in the TLU sector, higher vehicle efficiency, more biofuels, lower VMT, less idling, etc. will result in a net decrease in traditional pollutants..*

Page 6-2: Remove Arizona and insert New Mexico in the last paragraph. *\*KH – Edit accepted.*

## Chapter 7

Page 7-3: Production of methanol from cellulose materials has not been demonstrated as technically or economically feasible on any commercial scale. This needs to be noted in the discussion along with a call for R&D (there is substantial R&D at the federal level and in several private venues) to help enable it as a future possibility. *\*SR – Edit accepted.*

Page 7-11, A-11; The goal to increase in-state production of biodiesel is in direct conflict with the statement, “*There is limited capacity within the state for crop production to support biodiesel production without the use of cropland that is currently used for other purposes or is part of the Conservation Reserve Program*” made earlier in Chapter 7. *\*SR – Edit accepted, issue addressed.*

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## 11-12 Bensinger

-----Original Message-----

**From:** Charles Bensinger [mailto:newworld@timewindow.com]

**Sent:** Sunday, November 12, 2006 6:37 PM

**To:** Uhl, Mary, NMENV; Karl Hausker

**Subject:** Re: Edits to TLU Draft

Hi Karl:

I have two short additions I like to make to the latest TLU draft:

1. Page 6-3, second paragraph:

Greater alternative fuel use .....lifecycle GHG emission. **ADD: Use of zero emission vehicles running on electricity or hydrogen made from renewable sources can dramatically reduce GHG emissions.** *\*KH – Edit accepted*

2. Page 6-8, Add the ZEV/LSV chart: *\*KH – Edit rejected simply in interest of keeping summaries short.*

ADD: **The goal levels and timing for hybrid vehicles, low speed vehicles (LSV), and zero emisison vehicles (ZEV) sales are as follows:**

**ADD Chart from TLU-6, page 2.**

Thanks,

Charles

## 11-14 Ames

-----Original Message-----

**From:** Eric Ames [mailto:ames@westernlaw.org]

**Sent:** Tuesday, November 14, 2006 12:15 PM

**To:** 'Uhl, Mary, NMENV'; 'Singer, Tom'

**Cc:** lucyjohn@hotmail.com; BenLuce@NMCCAE.org; kcolburn@symbioticstrategies.com; ames@westernlaw.org

**Subject:** RE: CCAG Comments

Mary –

I appreciate the opportunity to comment on the November 12 CCAG draft report.

#### Chapter 5:

Overview of Policy Recommendations and Estimated Impacts, p. 5-3 – The fourth sentence includes a parenthetical indicating that the quantitative estimates of costs and savings do not include the oil and gas options. As you know, CCR did prepare quantitative estimates for the oil and gas options and, in fact, they will be attached to the report. To be accurate, a footnote should be added reflecting that (1) quantitative estimates for the oil and gas options were prepared and can be found in the Appendices H-5, H-6, H-7, and H-8; and (2) the quantitative estimates for the oil and gas options were not included because of general, non-data-specific objections by industry representatives. *\*KC – Text modified (footnote inserted).*

Summary of Results, p. 5-7 – For ES-11, ES-12, and ES-13, the summary says that the estimated cost/saving (\$/tCO<sub>2</sub>e) is "not estimated". As noted above, this is not true. CCR did calculate these values, but industry representatives objected to their inclusion. While the ES-TWG agreed not to include these values in the summary, it is erroneous to say they were not estimated. Accordingly, a footnote should be added reflecting that (1) these values were prepared and can be found in Appendices H-5, H-6, H-7, and H-8; and (2) these values were not included because of general, non-data-specific objections by industry representatives. *\*KC – Text modified (footnote inserted).*

ES-11, p. 5-13 – In the second sentence of the first paragraph, "carbon" should be "carbon dioxide". The purpose of natural gas extraction is to capture carbon; in that pursuit, carbon dioxide "can be (and sometimes is being) captured" from natural gas in order to produce a saleable product. *\*KC – Text modified as suggested.*

ES-12, 5-14 – In the first sentence of the first paragraph, the phrase "subject to verification of technical and economic feasibility and reduction potential" should be deleted. The structure of the sentence makes the recommendations subject to this condition. The ES-TWG, in approving ES-12, never debated or agreed to this condition. Indeed, the condition does not appear in the preceding CCAG draft, and is not flagged as a substantive change in response to a comment.

As a matter of policy, it is not necessary or appropriate to require the verification of technical and economic feasibility and reduction potential in order to implement these recommendations. With respect to voluntary measures (and encouragement to participate in voluntary federal and state programs), there is no need for verification, particularly if it is read to imply some kind of independent scientific inquiry. Obviously, it would be helpful to know this information in order to persuade members of the oil and gas industry to implement the measures, but it is not necessary to "verify" that information. With respect to mandatory measures, the ES-TWG agreed that implementation would include consideration of "technical feasibility and cost and investment recovery mechanisms, *if appropriate*". Nothing in this language conditioned implementation on "verification of technical and economic feasibility and reduction potential". We never agreed to such a condition, and nothing here or in the law should be read to preclude the State of New Mexico from using its regulatory power to force technology if it decides such exercise to be reasonable and appropriate in the circumstances. *\*KC – Text retained; handout approved by CCAG on 10/20/06 included this text.*

Appendix A: *(Taken as Appendix H.)*

Table 2, p. H-4 – same comment as above for Summary of Results, p. 5-7. *\*KC – Text modified (footnote inserted).*

ES-11, H-44 – same comment as above for ES-11, p. 5-13. *\*KC – Text modified as suggested.*

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## 11-14a Singer

-----Original Message-----

**From:** Singer, Tom [mailto:tsinger@nrdc.org]

**Sent:** Tuesday, November 14, 2006 3:15 PM

**To:** Uhl, Mary, NMENV

**Cc:** Jim.Norton@state.nm.us; Craig O'Hare; Aaboe, Erik, NMENV; Weaver, Lany, NMENV; Musick, Brad, NMENV; Karl Hausker; Thomas D. Peterson; kcolburn@symbioticstrategies.com; lucyjohn@hotmail.com; Ben Luce; Jeanne Bassett; Spencer, Theo

**Subject:** RE: Revised draft CCAG report is available

Mary – Here are my comments on what I have seen of the draft report so far. Please distribute them more widely as appropriate. Thanks. Tom

ES-15: The last sentence of the first paragraph **must** read “Utilities must take action to ensure that each covered generating facility meets this standard.” The underlined phrase would replace “their generation mix.” *\*KC – Text modified as suggested.*

Key Challenges & Opportunities:

I suggest that the content of last sentence of para 2 (on RCI DSM) be moved to line 2 of this para and inserted after “including” to indicate the relative cost-effectiveness of DSM in reducing carbon emissions from energy production and supply. *\*KC – Receiving sentence referenced relates to supply rather than consumption so subject sentence not moved. Text modified in subject sentence to reinforce DSM cost effectiveness.*

Regarding IGCC with CCSR, paragraph 2 line 6 contains the language “... though they require more development to be considered fully commercially available.” Para 3, regarding solar, contains the language “... However they will require further R&D and deployment to be economically competitive with conventional baseload generation.” I do not believe the CCAG endorsed this view of the relative commercial readiness of these technologies, nor do I think CCS has the appropriate expertise to make such judgments. *\*KC – Text modified to delete referenced sentences entirely, thereby making no reflection regarding likely timeframe for commercialization.*

## 11-14b Singer

**From:** Singer, Tom [mailto:tsinger@nrdc.org]

**Sent:** Tuesday, November 14, 2006 8:53 PM

To: Uhl, Mary, NMENV

Subject: FW: CCAG final report language on IGCC w/ CCSR

Here are some additional comments underscored and in caps from colleagues at NRDC. Again, please distribute as appropriate. Tom

### ES-6 Advanced Coal/Fossil Technologies (e.g., IGCC with carbon capture)

*Re edits below, \*KC – Text retained; suggestions appear reasonable, but did not come up in TWG discussion.*

Advanced fossil technologies such as COAL GASIFICATION AND integrated gasification combined cycle (IGCC) may ACHIEVE greater efficiency than conventional fossil technologies, and can therefore have lower CO2 emission rates. Advanced fossil technologies combined with carbon capture and sequestration reuse (CCSR) could enable significantly lower CO2 emissions. Policies to promote advanced fossil technologies for new coal plants may include mandates, incentives, or a combination two. THE WESTERN GOVERNORS' ASSOCIATION'S CLEAN ENERGY BLUEPRINT, ADOPTED IN JUNE 2006, ENCOURAGES STATE GOVERNMENTS TO PROVIDE STATE LEVEL INCENTIVES ONLY FOR THESE ADVANCED FOSSIL TECHNOLOGIES THAT EITHER ACHIEVE OR MOVE SUBSTANTIALLY TOWARD GASIFICATION WITH SEQUESTRATION AND REUSE.

The CCAG recommends that the State encourage all new coal plants in New Mexico, or customers in New Mexico, to be built with advanced fossil technologies and CCSR. Because development of an IGCC plant involves risks and uncertainties that have inhibited rapid commercialization, the CCAG recommends an incentive-based approach rather than a mandate. Accordingly, the CCAG recommends that the state develop an incentive package to encourage utilities and independent power producers to develop advanced fossil technologies with CCSR. Incentives should be structured to encourage high rates of CCSR (e.g., net CO2 emission rates no higher than those of a state-of-the-art natural gas combined-cycle generation facility) and only be offered for advanced fossil technologies with CCSR. Cost recovery for prudent investments in advanced fossil technologies with CCSR should be structured to fully compensate utilities. The CCAG also recommends that New Mexico task a state agency (e.g., OCD, has this regulatory authority) to provide technical resources for carbon sequestration, including evaluation of suitable storage sites, and possibly the administration of incentives.

## 11-16 Thaddeus

-----Original Message-----

From: Eva Thaddeus [mailto:evathad@nmia.com]

Sent: Thursday, November 16, 2006 6:01 PM

To: NMENV Uhl Mary; Karl Hausker

Subject: cross-cutting edit proposed

Hello Mary and Karl,

I'm not seeing an executive summary on the website yet. Am I missing

it?

Cross-cutting looks good. I did take a shot at rewriting the paragraph about the contributing issues checklist. Proposed revision reads:

At its January 11, 2006 meeting, the CCAG also asked that a checklist be developed to define "contributing issues" which warrant consideration when evaluating GHG emission reduction strategies. The list of contributing issues includes x y and z(state them all) and can be found at the end of Appendix F. This checklist was made available to TWGs to consider as they formulated their policy recommendations.

*\*KH – Edit accepted. Similar text added to Chap 1 .*

## 11-17 Epel

-----Original Message-----

**From:** Epel, Joshua [mailto:JEpel@duke-energy.com]

**Sent:** Friday, November 17, 2006 4:37 PM

**To:** Uhl, Mary, NMENV; Smith, Gordon Reid

**Cc:** Jim.Norton@state.nm.us; Craig O'Hare; Aaboe, Erik, NMENV; Weaver, Lany, NMENV; Musick, Brad, NMENV; Karl Hausker; Thomas D. Peterson; kcolburn@symbioticstrategies.com

**Subject:** RE: Revised draft CCAG report is available

Mary:

On page 5-15, first full paragraph, please strike the last sentence:" 3) replace gas-driven compressors with electric compressors when doing so reduces CO2 emissions" . *\*KC – Edit rejected. Contradicts text in handout approved by CCAG on 10/30*

Joshua B. Epel